

## Integration of health and wellbeing services with general health services



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# Executive Summary

## Purpose

The Government is committed to the introduction of a single-tier health service, supported by universal health insurance, where access is based on need, not ability to pay. Under universal health insurance (UHI), everyone will be insured for a standard package of primary and hospital care services, including mental health services. Insurance will be provided under a multi-payer insurer model with no distinction between 'public' and 'private' patients. It is anticipated that the system will be founded on principles of social solidarity, encompassing the fundamental tenets of financial protection, open enrolment, lifetime cover and community rating.

It is understood that, while primary and hospital care will be funded mainly via the UHI system (with purchasing largely devolved to insurers), specialised care services, public health services and social care services, including long-term care, will be funded by general taxation. While funded separately, these services will be delivered in an integrated manner around the needs of the person. The purpose of the review is to supplement the overall work module on the basket of services referred to above as well as into wider health reform work.

## Questions

The evidence review required by the Department of Health should consider the international evidence in relation to mechanisms and structures used to integrate 'general health services' (i.e. primary care and hospital services providing for diagnosis and treatment of illness and disease) and health and wellbeing services (i.e. public health services such as preventative services, health promotion programmes, screening etc.) around the needs of the individual and the population. The Department of Health posed five questions in relation to the integration of general health services and public health services, which are:

1. Define health and wellbeing and integrated health care?
2. Describe the mechanisms - used to integrate health and well-being and general health services in other health care systems?
3. What potential future policy directions for integrating health and wellbeing services with general health services are identified in the jurisdictions included in the review?
4. What are the features of a successful system integrating health and wellbeing services with general health services?
5. How is success measured in a system integrating health and wellbeing with general health services?
6. What is the process to integrate service?

## Methods

The first step in this review was to identify relevant literature to answer the questions posed by the Department of Health on the topic of integration between general health services (medical care) and health and wellbeing services (public health services). This was initiated by a systematic search of the literature to identify articles appropriate to answer the review questions and we searched the thesauruses in Medline, CINAHL, and Business Elite databases to identify relevant keywords in the areas of integration, medical care and public health and then we searched these databases using combinations of the identified search terms. We completed a web search through the Google search engine (using the words public health and medical care and integration or collaboration) to identify grey literature. From these sources, a total of 939 hits resulted which required screening for suitability.

At that point, given the number of articles to be screened and the three and half-month period allocated to conducting the review, we undertook further discussions with the Department of Health to decide the best way to meet the deadline for completing the review so as to align with policy-making timescales. We suggested using one seminal study and 15 reviews of the topic that we had located and using original references when we needed to check a review for accuracy. Following discussion we agreed on a 'rapid evidence assessment' approach, which for the purpose of this report, we defined as a review of previously completed systematic or literature reviews in the area of integration between public health and medical care complimented by iterative searches on topic areas not covered by the 16 papers identified at the start of the review. We developed an extraction form to extract the data from the 16 papers in a systematic manner. In total 78 papers were used to compile the report.

## Question 1: Definitions

There are many definitions of health and wellbeing, and for the purposes of this report we used the World Health Organization (WHO) definition which describes 'health and wellbeing as everyone achieving his/her potential to enjoy complete physical, mental and social wellbeing.' The attainment of health and wellbeing requires an organised system to maintain and promote health and this is known as the public health system. Public health is uniquely situated in that it is concerned with population health with a focus on wellness, prevention of disease or its deterioration, and the collection and analysis of information. The core functions of public health are: population health assessment and consultation, health and disease surveillance, health protection, health promotion, disease and injury prevention and detection, and disaster response.

Primary medical care is defined by the Institute of Medicine (IOM) as the 'provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community'. It is important given the subject of the review to isolate the joint functions of public health and primary medical care which include: health assessment, surveillance and evaluation; health promotion; and the prevention and detection of disease or injury.

'Integrated care' is a complex and still evolving concept. A literature review (in 2009) yielded approximately 175 definitions. Integrated care touches all aspects of health care including public health, medical care (including acute hospital and primary medical care) and social care. In addition, there are many approaches to dealing with the concept of integration.

Integration (from the Latin *integer*, meaning whole or entire) generally refers to combining parts so that they either work together or form a whole. In the literature the term collaboration is used interchangeably with integration. Collaboration comes from the Latin *collaborare* meaning to labour together and can be defined as a joint effort of multiple individuals or work groups to accomplish a complex task or project. Yet another term that is used in the literature to describe uniting services in the health system is coordination from the Latin *coordinatio*. Coordination is defined as the bringing of different elements of an organisation (or complex activity) into a relationship that will ensure effectiveness and harmony. In addition, the word synergy, from the Greek word *synergia* meaning 'working together', is used to describe the interaction of elements of the public health system and primary medical care system to produce an effect greater than the sum of their individual effects.

There is no unified or commonly agreed conceptual model for health systems integration and there is considerable diversity in the structures and processes for integration. Terminology plays a critical communications role with respect to how we envisage, design, deliver, manage, regulate, finance and evaluate healthcare services. This lack of specificity and clarity in the definition and process of integrated care hinders systematic understanding and successful, real-world application of integration. While there is a lot of conceptual work surrounding integration, there is a lack of a solid empirical framework.

## Question 2 Mechanisms or strategies

Integration has many dimensions such as focus, breadth, virtual or real, degree, type and level. The focus of integration efforts can vary and include different populations: entire communities or enrolled specific populations irrespective of health status, vulnerable or at risk sub-groups and patients with complex illnesses. The breadth of integration is described as horizontal or vertical and these forms of integration may be real or virtual: real integration entails mergers between organisations, whereas virtual integration takes the form of alliances, partnerships and networks created by a number of organisations. The degree of integration describes a minimum of three forms of integration:

- Linkage: the least-change approach, entails providers working together on an ad-hoc basis within major system constraints;
- Co-ordination: a structured, inter-organisational response involving defined mechanisms to facilitate communication, information-sharing and collaboration while retaining separate eligibility criteria, service responsibilities and funding;
- Full integration: the most transformative combination, refers to a 'new' entity that consolidates responsibilities, resources and financing in a single organisation or system in order to deliver and pay for the entire continuum of care.

The number of levels for integration depends on the author. Some authors describe five levels of integration; funding, administrative, organisational, service delivery, and clinical. Others describe three levels of integration: macro (regulation, policy and strategic planning), meso (organisational and professional) and micro levels (clinical). The **three levels** were originally described by **Shortell and colleagues** and a sociological approach (i.e. macro (functional), meso (organisational and professional), and micro (clinical)) was applied to these three levels by **Delnoij and colleagues**. These **three levels** were used by **Curry and Ham** in their review of integration for UK.

**Fulop and colleagues** (2005) identified **five types** of integration and then presented them in a systemic environment:

1. Organisational integration is where organisations are brought together through legal instruments or agreements such as mergers (forming a single entity), collectives (forming an administrative grouping), or networks (forming a virtual group);
2. Functional integration is where back-office and support functions are integrated;
3. Service integration is where different clinical services are integrated at an organisational level such as through multidisciplinary teams;
4. Clinical integration is where care by professionals and providers to patients is integrated into a single coherent process within and between professionals and their organisations, such as the use of one care plan, shared clinical guidelines and protocols, and devolved shared decision-making;
5. Normative integration is where the ethos of shared organisational and professional values enables trust and collaboration in delivering health care within and across organisations. Skilled leadership and consistent communication are important enablers of this process; and,
6. Systemic integration is where there is alignment of regulation, policies and incentives at the administrative and organisational level known as the integrated delivery system.

**Rosen and colleagues** adapted Fulop and colleagues first five types of integration into **six integrative processes** with the service user at the centre.

1. **Clinical integrative processes** aimed to achieve consistent clinical standards across different settings, for example across community clinics, hospitals and day centres. They were underpinned by guidelines in clinical settings, or shared working practices such as a shared single assessment in the health and social care context.
2. **Informational integrative processes** involves the use of electronic patient records; population registers to identify gaps in clinical and preventive care; clinical 'point-of-care' prompts to support adherence to guidelines and standardise care along clinical pathways and across organisational boundaries; patient access to their own medical record to support self-management of care, such as checking results, and for self-organisation, such as booking appointments; and secure messaging and shared access to selected clinical data between primary and specialist clinicians. This was a challenging aspect of integration in each site and was an area of significant variation between electronic medical records and data protection regulations restricted the scope for data sharing and required explicit rules about rights of access to confidential data.
3. **Organisational integrative processes** relate to the governance arrangements between participating organisations. They encompass: the relationships between organisations, such as partnership; structural integration through merger or contractual relationships; the arrangements in place to define and implement goals and objectives; and the assurance frameworks to ensure that agreed objectives are achieved.
4. **Financial integrative processes** relate to budgetary arrangements and payment systems in place across the organisations participating in integration.
5. **Administrative integrative processes** relate to administrative and functional links across participating organisations, such as human resource management and seconded staff. They are particularly useful for small groups of practising doctors who may otherwise lack the necessary scale to run these functions efficiently. Examples are: shared administrative functions, such as contract and claims management; central employment of shared staff; and joint education and training across professional groups.
6. Normative integrative processes relate to developing shared values and aligned professional standards across participating individuals, groups and organisations.

**San Martin-Rodriguez and colleagues** identified **three determinants** of successful collaboration through a review of ten studies completed between 1980 and 2003. The countries covered in the review are not stated precisely but Canada, UK, USA and Mexico are mentioned. They conclude that successful collaboration in health care teams can be attributed to numerous elements, including processes at work in interpersonal relationships within the team (the interactional determinants), conditions within the organisation (the organisational determinants), and the organisation's environment (the systemic determinants).

- The systemic determinants are further classified under a social system, cultural system, professional system and educational system;
- The organisational determinants are further classified under the themes structure, philosophy, administrative support, resources and co-ordination mechanisms;
- The interactional determinants are sub-classified under the themes willingness to collaborate, trust, communication and mutual respect.

In 1997 **Lasker and colleagues** used a grounded theory approach to explore the real life experience of collaboration. This work took a number of years and 414 examples of collaboration were collected throughout the USA. These examples were coded, categorised and six themes for collaboration emerged, now known as the **six synergies**. In addition, to the synergies, three other dimensions that enhanced collaboration were identified and these were: structural foundations (the enablers of the collaborations), geography (where the collaboration takes place) and partners (the types of professionals and organisations involved in the collaboration). The six synergies are as follows:

**Synergy 1:** Improving health care by coordinating medical care with individual level support services;

**Synergy 2:** Improving access to care by establishing frameworks to provide care for the un- or underinsured;

**Synergy 3:** Improving the quality and cost-effectiveness of care by applying a population perspective to medical practice;

**Synergy 4:** Using clinical practice to identify and address community health problems;

**Synergy 5:** Strengthening health promotion and health protection by mobilising community campaigns;

**Synergy 6:** Shaping the future direction of the health system by collaborating around health system policy, health professions training, and health-related research and information.

The six structural foundations identified were coalitions, contractual agreements, administrative or management systems, advisory bodies, intraorganisational platforms and informal arrangements.

**Martin-Misener and Valaitis** categorised 80 public health and primary medical care collaborations initiated between 1988 and 2011 in America, Australia, United Kingdom, Canada or New Zealand using an **adapted version of Lasker's six synergies and their subcategories**. The adaptations involve rewording the text describing the synergies sub-categories, addition of an 'other' category, and replacement of Lasker's six dimensions with San Martin Rodriguez and colleagues systemic, organisational and interactional levels or determinants. Martin-Misener and Valaitis report that Synergy 3 focusing on improving the quality and cost effectiveness of care by applying a population perspective to medical practice was the most common synergy reported (22.5%). Synergy 4 using clinical practice to identify and address community health problems was the next largest group (17.5%) followed by Synergy 1 improving health care by coordinating services for individuals (15%) and Synergy 6 shaping the future direction of the health system by collaborating around policy, training and research (15%). The authors also described an 'other' category that is represented by collaborations that focused on integration and/or collaborations aimed at quality improvement (8.8%).

**Marriot and Mable** (2002) outlined a different approach to integration:

- Rostered (enrolled) 'full integration' organisation;
- Geographic regional organisation;
- Integrated delivery system model;
- Focusses on providers;
- Primary health care reform incorporated within or contracted for by the larger integrated models; and,
- Voluntary collaborative initiatives of otherwise independent entities.

Marriot and Mable's approach reflects varying levels of integrative capacity. Each of the models and approaches has a predominant point of emphasis. These distinguish and differentiate, in terms of shaping mission, orientation and capacity and each holds different implications for government policy. **Ciliska and colleagues** use one of Marriott and Mable's (2002) five approaches, '**the voluntary collaborative initiatives between two independent entities**', to classify collaborations between public health, primary medical care and other social care initiatives in Canada. For their results they combine key examples from the Canadian literature and key informants, organised into the categories of 1) primarily primary care functions within public health settings, 2) primarily public health functions in primary care settings, and 3) representatives from both organizations working together in a different setting. In addition, they present a fourth category 'other literature' where they mention Lasker's work in the USA.



**Koelen and colleagues (2012)** created the **Healthy ALLiances framework** (the HALL framework) through a stepwise and iterative process, combining research on coordinated action in practice and insights from literature on collaboration processes in the area of health promotion and public health. Results were synthesised into theories and frameworks, which subsequently were tested in practice and so on.

Based on the case studies, and critically assessed against experiences described in the literature, two frameworks have been developed.

1. The **first framework** describes factors relating to the organisation of alliances and includes factors influencing achieving and sustaining coordinated action, the value of these factors, the challenges related to it and possible solutions to address the challenges;
2. The **second framework** describes levels and variables of coordinated action.

The case studies between 2000 and 2010 involved a variety of actors. The composition of the alliances depended on the issue addressed and the context of the case studies. Moreover, all case studies took a participatory action research approach, where the data after each measurement were fed back into, and discussed in, the specific alliance, in order to:

1. Discuss the strengths and weaknesses of the alliances under study;
2. Plan the moves forward;
3. Further develop the framework and the measurement tools.

Conducting research on coordinated action in a variety of settings revealed that the context in which alliances function, as well as participants' personal characteristics, have a significant influence on how alliances develop and are sustained. The process as a whole resulted in the **HALL framework** which identifies three clusters of factors that either hinder or facilitate the success of alliances:

1. Institutional factors which included policy, planning horizons, funding;
2. Personal factors among members of the alliance which involved attitudes and beliefs, self-worth, social identity, personal relationships;
3. Factors relating to the organisation of the alliance which were flexible timeframe, shared mission, clear roles and responsibilities, building on capacities, communication structure, visibility, management.

There are a few other mechanisms described in the literature and presented in question two but they are similar and for the most part adaptations of those already described in this summary.

Five of the key papers used for this report addressed the issue of the **effectiveness of integration**. Overall it was agreed that integration increased capacity such as funding and resources, but integration took time and required investment. Virtual integration was seen as equally beneficial as real integration but less expensive and large multi-specialist medical care combining hospital and primary care functions provided better care than small groups of medical practitioners. The successful vertical integration examples (Kaiser Permanente and Mayo Clinic) examined in the literature were viewed as successful or more successful than the successful real integration example (US Veterans Health Administration). Leadership, culture and incentive alignment were important factors present in high performing integration systems. There was no evidence to suggest that integration resulted in the improvement of clinical outcomes, mortality or cost effectiveness but disease management programmes have shown some success in achieving process and quality of life improvements as well as service user satisfaction. Interestingly, it was shown that public health and primary medical care integration provided a more coherent health promotion approach to addressing the determinants of health. In addition, population health care approaches provided in primary care increased the uptake of prevention services and promoted health and disease surveillance.

Nine of the key papers reviewed for this report identified **facilitators of and barriers to integration** and we found that there was agreement around the facilitators that were identified in this area. We organised the facilitators under three headings (systemic, organisational and interpersonal) and the facilitators are:

Systemic	Organisational	Interpersonal
Agreed policy; Shared planning horizons; Good governance; Non-competitive and synergistic funding; Common and high-quality information infrastructure; Common education and understanding among professionals; Shared culture.	Flexible timeframe and enough time; <b>Skilled leadership*</b> ; Shared mission; Clear roles and responsibilities; <b>Consistent communication structure</b> ; Adequate resources; Supportive management and administration; Building on capacities; Visibility; Geographical proximity; Shared electronic patient record system and surveillance data; Shared protocols and tools and information.	Attitudes and beliefs; <b>Trust and respect</b> ; Self-efficacy (confidence and skills); Shared purpose; Social identity; Role clarity; Changing staff roles; Personal relationships; Practice culture; Effective communication; Willingness to collaborate.

\*Facilitators in **bold text** are the most important facilitators

Only the facilitators are described in detail in the report, as the converse of the facilitators are the barriers. According to the literature, systemic and interpersonal facilitators need to be in place for organisational facilitators to be effective. The three most important facilitators identified by the literature are skilled leadership, constant effective communication and trust between the collaborators.

### Question 3: Future policy direction

There is limited information in the literature examined on **future policy** for integrating medical care and public health services. The Australian Population Health Development Principal Committee will coordinate national efforts towards an integrated health development strategy that includes primary and secondary prevention, primary care, chronic disease and child health and wellbeing. The concentration is on integrating primary care services themselves.

The Pan-Canadian Healthy Living Strategy framework focuses on preventing chronic disease and promoting good health by helping sectors align and coordinate work efforts to address common risk factors such as physical inactivity and unhealthy eating. It supports health protection and promotion and identifies the necessity for vertical and horizontal integration.

The Netherland's 'Health close to the people' strategy sets out the ambitions of the government's health policy for four years. The approach is based on three themes: confidence in health protection; care and sport in the neighbourhood (specifically mentions integrating health promotion into care and sport); and personal lifestyle decisions. There are some risk factors which individuals are unable to influence themselves, or can do so only to a limited degree. Here, the public must be able to rely on the support of the government. **Clear legislation and effective enforcement of that legislation to deal with population-based risk factors remain essential.** The health care sector can focus even more on promoting good health, alongside tackling poor health. Readily accessible health care facilities in the neighbourhood or online ('eHealth') can make a significant contribution in this regard, as can the timely identification of risks, effective interventions and innovative treatment methods. There should be **closer links between care and prevention**. With regard to lifestyle choices, the government avoids a prescriptive or proscriptive approach as much as possible. People are responsible for making their own choices. These choices are made in an environment in which **'the healthy choice is the easy choice.'** Several sectors have a part to play in this respect.

The UK Government want better integration of care to be at the heart of the reformed health system. The Nuffield Trust and The King's Fund were asked to support the development of a national strategy for the promotion of integrated care

and they have published much work in the area of integration. However they concentrate on **cure and care** and although public health is mentioned it was not included in the examination of the research.

#### **Question 4: Features of success**

The **features of successful integration** were extracted from eight studies or reviews and mirror the facilitators of integration. This is because successfully integrated systems have used the facilitators appropriately. The features of successful integration focus on two main themes, (1) management and people skills, and (2) the benefits that can be accrued from integrated services.

The reported features of successful integration that focus on management and people skills are:

- Presence of a regulatory framework encouraging integration and formal agreements;
- Integration as a result of a common agenda and joint planning;
- Defined population who have a longstanding relationship with the services;
- People centred philosophy focused on population needs;
- Integration for the benefit of the population and not a cost saving measure;
- Evidence of a visible engaged and skilled leadership that values collaboration and shares accountability;
- Full co-location of the team;
- Adequate administrative support;
- Evidence of strong governance with membership from all stakeholders;
- Adequately funded integration process and funding was aligned or pooled;
- Integration had an adequate time period to allow the process to take place;
- Services with a history of collaboration and equal balance of power were more likely to be successful;
- A feeling of being part of the team;
- Clear roles and responsibilities for each member of the team and shared accountability;
- Evidence of effective communication structures and common cultural identity

The benefits that can be accrued from successful integration are reported as:

- Access to health services is improved;
- Emphasis on wellness, health promotion and primary care is promoted;
- Health-related output(s) are improved;
- Capacity and expertise is increased;
- New collaborative initiatives started and existing initiatives are sustained;
- Shared protocols and tools are used;
- Comprehensive information systems to collect, track and report activities and ensure quality improvement are present;
- National outcome measures for integration of public health with medical care are decided.

#### **Question 5: Measurement of success**

Many authors suggest that the process of integration requires monitoring and evaluation to determine whether the process was implemented as intended, and the impact of integration on the health system. The impact needs to be examined from a number of viewpoints including the patient, provider, organisation, funder and policy-maker. The main question to be answered is '**how has the integrated system performed?**' Analysts propose indicators to measure the extent to which an integrated health system has been achieved but they are limited in number and evidence of their implementation is scarce. The indicators that have been developed mainly focus on integration within curative care or social care. There is little evidence on the evaluation of integration between public health and medical care. Authors suggest that national quality and outcome indicators should increasingly focus on integrated health service delivery rather than the performance of individual sectors such as acute care.

There are three tools identified in the literature to **measure integration**: the balanced scorecard measures the implementation and impact of integration; clinical microsystem assessment tool allows the organisation to compare its characteristics to those considered key to successful integration, and the scale of functional integration is used to analyse intra-organisational, inter-organisational, horizontal and vertical integration.

The importance of goal setting and attainment of goals in integrated care is addressed by several researchers. It is important to reach a consensus about integration targets before starting the integration process. In addition, the reviewers report that the agreed integration targets must in one way or another be put into a strategic framework and approved by the management of the organisations involved. In this way, there can be a focus on overall organisational effectiveness and the extent to which common integration goals are fulfilled. Moreover, the driving force of change in the measurement of integration should not be underestimated. A negative result or experience can instinctively start self-correcting processes, that is, services changing their approach in order to achieve integration. Furthermore, measuring integration can in itself be perceived as a normative signal from the management that reaching integration targets have a high priority.

#### **Question 6: procedure for integration**

We were not asked by the Department of Health (DOH) to describe the **procedure for integration** but we came across two papers that provided some useful insight on designing and implementing integration; one paper is from the United Kingdom and the other from the Netherlands. Shaw et al in their report 'What is integration?' presents four key lessons that can be used as guiding principles for those pursuing integrated care which are:

1. Integrated care is best understood as a strategy for improving patient care;
2. The service user (or population) is the organising principle (i.e. services are designed around the patient or user rather than the physical service(s) or service provider(s)) of integrated care;
3. One form of integrated care does not fit all;
4. It is only possible to improve what you measure.

Shaw et al proposes key prompts to assist policy-makers, planners, providers and the users with designing and initiating integrated care. These include:

- Taking time to develop an agreed vision and goal for the population using the service;
- Considering the local and national context in which integration will occur and dealing with roles and responsibilities before integrating organisations;
- Deciding what type of process you wish to integrate and identify how it will work;
- Deciding the breadth of integration considering communication, choice, competition and incentives;
- Deciding the intensity of integration required but ensuring that this service integration does not induce fragmentation elsewhere.

Minkman and colleagues explore how local integrated care services are developed in the Netherlands in order to conceptualise and operationalise a development model for integrated care. The findings of this study provide a descriptive model of the complete process that integrated care services can undergo in the Netherlands and this is based on expert experience. The authors present four phases of integration which are: initiative and design; experimental and execution; expansion and monitoring; and consolidation and transformation. The authors identify a number of steps that usually occur in each phase.

#### **Conclusion**

The positive outcomes of integrated healthcare services (such as improved use of resources, better communication and higher vaccination rates) are to an increasing extent becoming clear. However the complexity of the field is an inhibiting factor for conducting valid trial studies. Conceptual clarity and a consistent theoretical framework are needed prior to testing approaches to integration through trial studies.

## Introduction

This evidence review was undertaken by Marie Sutton and Jean Long, Evidence Centre, HRB. The Evidence Review was requested by the Department of Health (DoH) as part of a knowledge brokering service offered through the research utilisation team, DoH in collaboration with the Evidence Centre. The questions were set by the DoH through an iterative process with the research utilisation team and Evidence Centre.

### Purpose of the review

The Government is committed to the introduction of a single-tier health service, supported by universal health insurance, where access is based on need, not ability to pay. Under universal health insurance (UHI), everyone will be insured for a standard package of primary and hospital care services, including mental health services. Insurance will be provided under a multi-payer insurer model with no distinction between 'public' and 'private' patients. It is anticipated that the system will be founded on principles of social solidarity, encompassing the fundamental tenets of financial protection, open enrolment, lifetime cover and community rating.

It is understood that, while primary and hospital care will be funded mainly via the UHI system (with purchasing largely devolved to insurers), specialised care services, public health services and social care services, including long-term care, will be funded by general taxation. While funded separately, these services will still be delivered in an integrated manner around the needs of the person.

A key UHI design question is the precise scope and content of services which will be covered by the standard basket. A major work module has commenced on this topic and is intended to culminate in the development of policy proposals for consideration by the Minister and Government. Central to this work is the question of integration or, more precisely, how services covered by the standard package and services falling outside the standard package will be integrated around the needs of the user, particularly when they are paid for by different funders within the system.

The evidence review required by the DoH should consider the international evidence in relation to mechanisms and structures used to integrate 'general health services' (i.e. mainstream primary care and hospital care services providing for diagnosis and treatment of illness and disease) and health and wellbeing services (i.e. preventative services such as vaccinations, health promotion programmes, screening etc.) around the needs of the individual and the population.

The review will supplement the overall work module on the basket of services referred to above as well as into wider health reform work.

## Research questions

The evidence review required by the Department of Health should consider the international evidence in relation to mechanisms and structures used to integrate 'general health services' (i.e. primary care and hospital services providing for diagnosis and treatment of illness and disease) and health and wellbeing services (i.e. public health services such as preventative services, health promotion programmes, screening etc.) around the needs of the individual and the population. The Department of Health posed five questions in relation to the integration of general health services and public health services, which are:

1. Define health and wellbeing in the context of public health services?  
Define integrated health care in the public health context?
2. Describe the mechanisms used to integrate health and well-being and general health services in other health care systems?
  - i. Identify the mechanisms used for integration?
  - ii. Define the mechanisms and the desired outcomes?
  - iii. How and in what context (considering environment, historical and funding) are the mechanisms applied in the specified countries?
  - iv. Describe adaptations (if any) that were made to the mechanisms in any of the specified countries?
  - v. Were the mechanisms effective in producing the desired outcome?
  - vi. What are the barriers to and facilitators for successful implementation of the mechanisms?
3. What potential future policy directions for integrating health and wellbeing services with general health services are identified in the jurisdictions included in the review?
4. What are the features of a successful system integrating health and wellbeing services with general health services?
5. How is success measured in a system integrating health and wellbeing with general health services?
6. What is the process to integrate service?

The DOH finalised questions for the review on the 11 March 2013 and required a final draft report on 30 June 2013; a presentation of the review findings was required in mid-June which provided a three month period to search, read, extract, synthesise and present the main findings.

## Methods

As a first step, we developed a data extraction form (Appendix A) which we used to extract data for Questions 2 to 5 from the seminal review papers. The second step in this review was to identify relevant literature to answer the questions posed by the DoH around the topic of integration between medical care and public health services. We started out doing a systematic search of the literature published in the English language to identify articles appropriate to answer the review questions and we searched the thesauruses in Pubmed, CINAHL with full text, and Business Elite databases to identify relevant keywords in the areas of integration, medical care and public health and then we searched these databases using combinations of the identified search terms. The search was limited to the years 2003 to 2013 (1st Quarter). We completed a web search through the Google search engine (using the words public health and medical care and integration or collaboration) to identify grey literature. This work was ably assisted by the information specialist in the DoH. From these sources, a total of 814 hits resulted which required screening for suitability. Appendix B presents the search terms employed and the numbers of articles identified.

At that point, given the number of articles to be screened and the three-month period allocated to conducting the review, we undertook further discussions with the DoH in order to meet the deadline for completing the review and to align more closely with policy decision-making timescales. We suggested using the 16 reviews of the topic, that we had located through the search and using original references from these articles to check the reviews for accuracy. Following discussion we agreed on a rapid evidence assessment using an umbrella and scoping review approaches, which for the purpose of this report, we defined as a review of previously completed systematic or literature reviews in the area of integration of public health with medical services complimented by iterative searches on topic areas not covered by the main seminal papers identified in the process.

We identified **sixteen review papers** written in English and mainly from developed countries which both authors agreed were suitable for inclusion and these were used as seminal papers to gain information mainly to answer Question 2 but they also contributed to answering other questions (Appendix C). The review papers covered examples of integration or collaboration from the following countries: Australia, Austria, Canada, Denmark, Finland, France, Germany, Italy, Mexico, Netherlands, New Zealand, Norway, Scotland, Sweden, UK and the USA. We did not evaluate the methodological quality of the 16 reviews as this is consistent with the rapid evidence review approach that we have adopted. Also some of the methods for assessing the quality of papers are not appropriate to these types of reviews. While our review papers focused mainly on collaboration between medical care and public health internationally, it was beyond the scope of the review to describe or examine the health care systems of countries. Our focus was to understand the collaboration between public health and medical care within the context of the health care system as described by the authors of the various papers. We combined the selection of review papers with other papers which were further identified by our iterative searches, to locate the origin of a mechanism for integration and to answer the other questions. Question 3 was answered through searching selected government websites (Australia, Canada, Netherlands, United Kingdom and United States of America) for current or future policies to integrate health care.

Through our iterative and systematic searches, we retrieved a number of papers on the topic of integration in general, integration between primary medical care and hospital care, integration between medical care and social care. Though these were not directly related to public health, they nevertheless provided background or related analysis which could be applied to public health integration with medical services. These papers were particularly useful when answering Question 1 and preparing the introduction for Question 2.

The main limitations of the review are that we used an iterative approach to identify the literature and we did not appraise the quality of the studies included in each of the reviews used. We did however seek original papers when the authors did not clearly explain a mechanism and in the end we located the original papers for each mechanism but not every case of its use.

## Findings

Question 1: **Define health and wellbeing services and integrated health care in the public health context.**

### **Health and wellbeing (which is the current terminology used in Ireland to describe public health)**

In the framework for improving health and wellbeing, 2013–2025,[1] the Department of Health (DOH) defines health and wellbeing as everyone achieving his or her potential to enjoy complete physical, mental and social wellbeing'[2]. The World Health Organization considers wellbeing as an integral part of their definition of health, which reflects the quality of life and the various factors that can influence quality of life during the population's or individual's lifetime.

The attainment of health and wellbeing in the population requires an organised system to maintain and promote health. In most countries this system is called 'the public health system' and the system sets out to improve and maintain the health and wellbeing of the population it serves. Since 1920 public health is viewed as 'the science and art of preventing disease, prolonging life and promoting health through the organised efforts and informed choices of society, organisations (public and private), communities, and individuals'.[3, 4] Public health is concerned with threats to health based on population health analysis, such as case finding, needs assessments, surveys, surveillance systems, disease registers and evaluations. The affected population can be as small as a handful of people (for instance, a point source epidemic) or as large as all the inhabitants of several continents (for example, a pandemic). Health and wellbeing (or public health) requires the interdisciplinary approaches of epidemiology, biostatistics, primary and secondary health services (including insurance medicine), environmental health, behavioural health, health economics, public policy, and occupational health.

Last[4], a recent and renowned epidemiologist, describes public health as 'the combination of sciences, skills, and beliefs that is directed to the maintenance and improvement of the health of all the people through collective or social actions. The programs, services, and institutions involved emphasise the prevention of disease and the health needs of the population as a whole (Table 1).

The Institute of Medicine (IOM) in the USA defines public health as 'fulfilling society's interest in assuring conditions in which people can be healthy' [5]. They reiterate their definition in 2012 in their book on primary care and public health.[6] The IOM expert committee says that to meet this definition in the current climate, public health has shifted its primary focus in the USA, from addressing infectious diseases to tackling the causes of, risk factors for and outcomes of chronic diseases. Public health encompasses a diverse group of public and private stakeholders (including the health care delivery system) working in a variety of ways to ensure a healthy society. Uniquely positioned among these stakeholders is the government's public health system. The public health system is legally tasked with providing essential public health services. The system is required to work with all sectors of the population, government and the private health care system. This allows the public health system to serve as a catalyst for engaging multiple stakeholders to deal with population health problems. In addition, their assessment and assurance functions put them in close contact with the population and in touch with their health needs.

Definitions of the term public health and its essential functions are not universal. The Standing Senate Committee on Social Affairs, Science and Technology reports[7] that the term 'public health' is confused with 'publicly funded healthcare' in Canada and is seen as the opposite of private healthcare. Hence, the Committee adopted an alternative term for public health, 'health protection and promotion' which describes some of the core functions of a public health system. A worldwide trend in public health is the attempt to define the essential functions of the public health system, as in Canada, no official list exists.[8] The Institute of Population and Public Health in Canada sees a critical need for Canada to reach a consensus on the core functions of public health as a starting point to define, assess and develop linkages between health care system infrastructures, the most important, in this case, being public health and medical care. Reports from both Canadian Institute of Health Research and the Canadian National Advisory Committee (on SARS



and Public Health) refer to the list prepared by the Advisory Committee on Population Health.[7, 8] This is used to describe the essential public health functions presented in Table 1.[9]

The focus of this review, on the integration of public health and medical care, is to examine the integration, coordination or linkage of services traditionally included as public health services with those in acute medical care provided through universal health insurance. Public health service intervention seeks to improve health and quality of life through: population health assessment and consultation, health and disease surveillance, health protection, health promotion, disease and injury prevention and detection, and disaster response. Table 2 presents the functions of public health interventions and the activities under each of these interventions.[9]

Since those with important roles to play in public health are diverse, including policymakers, public health agencies, service planners, health professionals and institutions, public and private organisations, and consumers, information systems technology is needed to educate and inform different groups about public health problems and to link them together to take effective action. These groups require the means to retrieve, manipulate, and display information so that it can be used efficiently for specific health-related responses.[10]

Welton[11], when commenting on 'Developing tomorrow's integrated community health systems', reported that there does not appear to be a generally integrated, effective working partnership between public health officials and medical practitioners in primary care in local communities. This is not surprising due to the fact that:

1. The historical cultures of public health and primary care medicine have not placed a value on building and maintaining such a partnership;
2. The historical paradigm is shifting dramatically to one of managing the per capita costs and health care outcomes under conditions of decreasing resources and increasing competitiveness.

These two observations present both a problem and an opportunity for the public health and primary medical care practitioners, which share considerable responsibility for the health of the same, or overlapping, populations.

The primary care office is a bad place for a physician to practice some aspects of public health as proper tools are not available, and physicians do not have the denominator data necessary to analyse the information.[11] Primary care physicians need a public health entity with the necessary resources and the willingness to collect representative information that is relevant to their practices and is communicated to them on a timely basis. Primary care and public health professionals need to be viewed as members of a collaborative team with a common objective which is improving or maintaining population and individual health in an informed manner. An important aspect of information analysis is validation and standardizing the information, thus making it useful to healthcare providers, funders and service users.

### **Primary medical care**

Primary medical care is defined in the IOM report as the 'provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community'.[12] The WHO defined primary care as 'essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development' (Table 1). 'Primary medical care is the first level of contact between the individual (their family and community) and the national health systems and constitutes the first element of a continuing health care process.'[13, 14]

Primary medical care provides [9]:

- Treatment for acute medical conditions and exacerbations of chronic medical diseases or conditions;
- Referral for investigation and specialist opinion
- Management of complications;
- Rehabilitation;
- Maintenance and follow-up;
- Self-management;
- Continuity of care;
- Data for continuous surveillance and quality assurance.

Having defined the characteristics of public health and primary healthcare individually, Table 2[9] presents three main categories of health care functions; those that are:

1. Primarily the responsibility of public health;
2. A joint function of public health and primary care; and
3. Primarily the responsibility of primary care.

The second category includes health surveillance, health promotion and prevention, and detection of disease and injury; these areas of public health and primary care are closely linked and have the greatest potential for integration.

Primary care and public health presently operate independently, but have complementary functions and the common goal of ensuring a healthier population. By working together, primary care and public health can each achieve their own goals and simultaneously have a greater impact on the health of populations than either of them would have working independently (synergy), however each group needs to be clear on its own role and each other's role, in particular in relation to the determinants of health. Each has knowledge, resources, and skills that can be used to assist the other in carrying out its own role. They should be viewed as 'two interacting and mutually supportive components' of a health system designed to improve the health of populations. [6] [11]

The European Observatory on Health Systems and Policies [15] describes the models of public health decision-making in eight countries: Australia, Canada, Denmark, Finland, France, Germany, the Netherlands and Sweden. It was written to inform the debate on future policy options. It is a descriptive report of models of public health in eight countries which draws on material from official reports, links from government web sites and the literature on public health from these countries. Turning to the nature of decision-making in each country, this report does not claim to offer a comprehensive assessment of structures and processes, as this would require a major programme of primary research. Rather, the aim is to:

- Identify the main entities contributing to public health policy;
- Describe (as far as possible) how decisions currently are made;
- Identify national priority areas for public health;
- Examine goals and strategies to achieve them.

The authors[15] report that the method of funding for health care plays a role in defining public health responsibilities. The most common methods of financing health care in industrialised countries are taxation, social health insurance and private health insurance. It has been noted that countries with a health insurance model of funding have less comprehensive national public health activities than those with tax-funded systems. In tax-funded systems, health authorities adopt a population approach, creating links with other sectors that influence health, while the social insurance funds adopt an individual perspective based on membership of the fund and with little collaboration with other sectors. Overall, it seems that considerations of public health play relatively little part in strategic purchasing in the health insurance funded countries for two reasons:

1. The system of financing creates a disincentive to seek unmet need, with its potential immediate cost implications;
2. The very limited ability of any of the sickness funds that function at a national level to influence the configuration of services in a particular area.

In the provision of collective (or public health services) there are three models of a health insurance-based system.[15]

1. Firstly, they can be provided outside of the relationship between the sickness funds and providers, typically (but not invariably) by public health authorities (e.g. vaccinations in France and the Netherlands).
2. Secondly, they can be undertaken within this relationship: funded by sickness funds, delivered by private physicians and overseen in some way by public health authorities (e.g. vaccination and screening in Germany, which are not very successful).
3. Thirdly, they can be provided by other organisational structures, bringing together sickness funds, providers, public health authorities and others (e.g. cancer screening in the Netherlands)

Public health requires new roles that depart from the traditional model of health insurance, such as: shifting towards actively purchasing care, seeking to determine the health needs of those for whom they are responsible and defining models of care within which these can be met, and the provision of collective health services.[15]

It is important to determine the levels of spending on public health actions in different countries although many difficulties arise in defining and measuring these expenditures[15]. Definitions of public health are likely to vary across countries and over time. Additionally, public health interventions may be funded by various sectors, including the social, environmental and health sectors. Thus, these complexities cast doubt on available data on public health expenditures. When comparing the sources of funding and expenditures for public health in the eight countries, it seems that public health is under-funded. Although it is difficult to measure accurately the expenditure on public health and prevention, the range has been found to be from 2.5% to 6.9% of total health expenditure. When expressed as a proportion of GDP, spending on public health and prevention appears to have increased over the last two decades in all countries, except Germany.

None of the eight countries has explicit, systematic procedures for making decisions affecting public health or setting priorities among different public health interventions.[15] The methodology used for making decisions and setting priorities in public health across the eight countries is consistently related to population health status, epidemiological data, burden of disease and, often, scope for prevention. Also important in this process (although less documented) are political negotiations, pressure from interest groups and informal processes as mentioned previously. In addition to the other methods, Sweden bases decisions on an 'ethical framework' encompassing human dignity, need and solidarity. Likewise, France highlights the importance of ensuring that decisions fit with societal values. Australia and the Netherlands increasingly are utilising economic evaluation and evidence of interventions' effectiveness to guide decision-making. In this way, they are progressing more rapidly towards creating an evidence based policy environment.

**Table 1. Characteristics of public health and primary medical healthcare[9].**

Characteristics	Public health	Primary healthcare
Definitions	<ul style="list-style-type: none"> <li>• 'The combination of sciences, skills, and beliefs that is directed to the maintenance and improvement of the health of all the people through collective or social actions. The programs, services, and institutions involved emphasize the prevention of disease and the health needs of the population as a whole.' (Last 2001)</li> </ul>	<p>'Essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development.....It is the first level of contact of the individual, the family and the community with the national health systems ... and constitutes the first element of a continuing health care process.' (WHO 1978)</p>
Primary Mission	<ul style="list-style-type: none"> <li>• Health of the community</li> </ul>	<ul style="list-style-type: none"> <li>• Health of the individual and family members</li> </ul>
Essential Functions	<ul style="list-style-type: none"> <li>• Population health assessment</li> <li>• Health surveillance</li> <li>• Health promotion</li> <li>• Disease and injury prevention and early detection of diseases and conditions</li> <li>• Health protection</li> <li>• Disaster response</li> </ul>	<ul style="list-style-type: none"> <li>• Diagnosis and treatment of medical conditions, including counselling, pharmacotherapy, minor surgical procedures</li> <li>• Health promotion and preventive care</li> <li>• Maternal and child care, including obstetrics</li> <li>• Emergency care</li> <li>• Rehabilitative care</li> <li>• Palliative care</li> <li>• Patient advocacy</li> <li>• Participation in community health programs</li> </ul>
Attributes/Principles	<ol style="list-style-type: none"> <li>1. Public good</li> <li>2. Determinants of health</li> <li>3. Equity/diversity and social justice</li> <li>4. Partnership</li> <li>5. Public participation</li> <li>6. Interdisciplinary approaches</li> <li>7. Science-based</li> <li>8. Efficient/cost-effective</li> <li>9. Continual improvement</li> <li>10. Sustainability</li> </ol>	<ul style="list-style-type: none"> <li>• 'To provide all Canadians, wherever they live, with access to an appropriate health care provider, 24 hours a day, 7 days a week.'</li> </ul>
Personnel	<ul style="list-style-type: none"> <li>• Public health physicians</li> <li>• Public health nurses</li> <li>• Laboratory personnel</li> <li>• Infectious disease specialists</li> <li>• Infection control practitioners and hospital epidemiologists</li> <li>• Epidemiologists</li> <li>• Other public health workers, e.g., public health inspectors, dental hygienists, health promotion specialists</li> </ul>	<ul style="list-style-type: none"> <li>• Family physicians or general practitioners</li> <li>• Nurses</li> <li>• Nurse practitioners</li> <li>• Mental health workers</li> <li>• Pharmacists</li> <li>• Others working in multidisciplinary team-based practices (e.g., physiotherapists, dieticians)</li> <li>• Administrative staff</li> </ul>

Characteristics	Public health	Primary healthcare
Skills	<ul style="list-style-type: none"> <li>• Epidemiology and health services investigation/ research</li> <li>• Designing, launching and maintaining public health programs and interventions</li> <li>• Report and policy writing</li> <li>• Administration</li> <li>• Communication with professionals</li> <li>• Committee services work</li> </ul>	<ul style="list-style-type: none"> <li>• Investigation and management of clinical problems</li> <li>• Consultation and communication</li> <li>• Small-group leadership skills</li> <li>• Practice management</li> <li>• Medical audit</li> </ul>
Evaluation/ Research Emphasis re: Effectiveness and Efficiency of Services	<ul style="list-style-type: none"> <li>• Evaluate structure, process and outcome of services based primarily on epidemiology and demographic data and on economic concepts</li> <li>• Focus on disease causes; risk factors for disease</li> <li>• Identify prevention; processes and outcomes of healthcare</li> </ul>	<ul style="list-style-type: none"> <li>• Audit of clinical work and practice organisation</li> <li>• Based partly on subjective views of staff and patients</li> <li>• Focus on management of common health problems, as well as on structure and processes of primary healthcare delivery</li> </ul>

**Table 2. Features, functions, interventions, target populations in public health and primary medical care and their overlap[9].**

	Primary responsibility					
Features	Primarily the responsibility of public health		Joint function of public health and primary care			Primarily the responsibility of primary care
Functions	Population health assessment	Health protection	Health surveillance	Health promotion	Disease and injury prevention and early detection	Disease management
Sample interventions	<ul style="list-style-type: none"> <li>• Health committees</li> <li>• Health needs assessment</li> <li>• Health care evaluations</li> <li>• Health and wellbeing surveys</li> <li>• System report card</li> </ul>	<ul style="list-style-type: none"> <li>• Air quality monitoring</li> <li>• Damp proof housing</li> <li>• Water treatment</li> <li>• Closed sanitation</li> <li>• Refuse disposal</li> <li>• Vector control</li> <li>• Safe food</li> <li>• Inspection of child and vulnerable person care residential facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Health surveys</li> <li>• Disease registers</li> <li>• Infectious disease case finding and reporting</li> <li>• Epidemic investigations</li> <li>• Health service utilisation surveys and surveillance,</li> <li>• Evaluation of disaster response</li> <li>• Report to practitioners of increasing threat, what they need to look for and intervention required</li> <li>• Quality assurance</li> </ul>	<ul style="list-style-type: none"> <li>• Advocacy for public health policies and regulation</li> <li>• Community partnerships to solve health problems and promote healthy lifestyles</li> <li>• Education and interventions to minimise the effects of or coping with chronic diseases and conditions</li> </ul>	<ul style="list-style-type: none"> <li>• Vaccinations</li> <li>• Epidemic investigation and control</li> <li>• Encouraging and supporting healthy life style choices</li> <li>• Early detection of diseases (such as cancers) and conditions (such as delayed development, poor eyesight etc.)</li> <li>• Disaster response</li> </ul>	<ul style="list-style-type: none"> <li>• Treatment and acute care</li> <li>• Management of complications</li> <li>• Rehabilitation</li> <li>• Maintenance and follow-up</li> <li>• Self-management</li> <li>• Continuity of care</li> <li>• Data for continuous surveillance and quality assurance</li> </ul>
Intervention Objectives	<ul style="list-style-type: none"> <li>• Identify population health status and needs</li> <li>• Evaluate health responses</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and ameliorate health and safety risks</li> </ul>	<ul style="list-style-type: none"> <li>• Identify trends or emerging problems</li> <li>• Identify the outcomes of health processes and interventions</li> <li>• Activate screening and protection protocols to reduce outbreaks</li> </ul>	<ul style="list-style-type: none"> <li>• Prevent movement to at-risk group</li> <li>• Prevent further disability from chronic diseases</li> </ul>	<ul style="list-style-type: none"> <li>• Prevent disease</li> <li>• Detect disease early</li> <li>• Reduce hospitalisation</li> <li>• Reduce avoidable disability</li> </ul>	<ul style="list-style-type: none"> <li>• Prevent/delay progression to complications and prevent admission and readmissions to hospital or other treatment facilities</li> <li>• Continuity of care</li> </ul>
Main target groups for intervention	<ul style="list-style-type: none"> <li>• General population</li> <li>• Identify at risk groups</li> </ul>	<ul style="list-style-type: none"> <li>• General population</li> </ul>	<ul style="list-style-type: none"> <li>• General population</li> <li>• At-risk groups and individuals</li> </ul>	<ul style="list-style-type: none"> <li>• General population</li> <li>• At-risk groups and individuals</li> </ul>	<ul style="list-style-type: none"> <li>• General population</li> <li>• At-risk groups and individuals</li> </ul>	<ul style="list-style-type: none"> <li>• Individuals with established disease</li> </ul>
Level of prevention	<ul style="list-style-type: none"> <li>• Primary prevention</li> </ul>	<ul style="list-style-type: none"> <li>• Primary prevention</li> </ul>	<ul style="list-style-type: none"> <li>• Primary prevention and secondary prevention</li> </ul>	<ul style="list-style-type: none"> <li>• Primary and secondary prevention</li> </ul>	<ul style="list-style-type: none"> <li>• Primary and secondary prevention</li> </ul>	<ul style="list-style-type: none"> <li>• Secondary and tertiary prevention</li> </ul>

## Definitions of integration

‘Integrated care’ is a complex and still evolving concept. A recent review of the literature (in 2009) yielded 175 definitions.[16] Integrated care touches all aspects of health care including public health, medical care (including acute hospital and primary medical care) and social care. In addition, there are many approaches to dealing with the concept. In the UK,[17] a national policy framework on integrated care is currently being finalised and this framework will include its own definition of and approach to integrated care.

The idea of integrated health services is not new. Indeed it is one of the principles of primary health care in the 1980s.[13, 14] For some people this renewed interest is not surprising, as they regard integrated services as the most logical way to organise a health system in order to ensure universal access to a broad range of services.[18] The current challenge is to be specific about:

1. What are the key functions which need to be delivered through such services?
2. What do successfully integrated services look like?

Integration (from the Latin *integer*, meaning whole or entire) generally means combining parts so that they either work together or form a whole. In the literature the term collaboration is used interchangeably with integration. Collaboration comes from the Latin *collaborare* meaning to labour together and can be defined as a joint effort of multiple individuals or work groups to accomplish a complex task or project. Yet another term that is used in the literature to describe uniting services in the health system is coordination from the Latin *coordinatio*. Coordination is defined as the bringing of different elements of an organisation (or complex activity) into a relationship that will ensure effectiveness and harmony. Therefore if the authors of relevant articles in the literature use the terms collaboration or coordination instead of integration then by definition these terms are deemed equally valid (or useful) for the purpose of this review. In addition the word synergy, from the Greek word *synergia* meaning ‘working together’, is used to describe the interaction of elements of the public health system and primary care system to produce an effect greater than the sum of their individual effects.

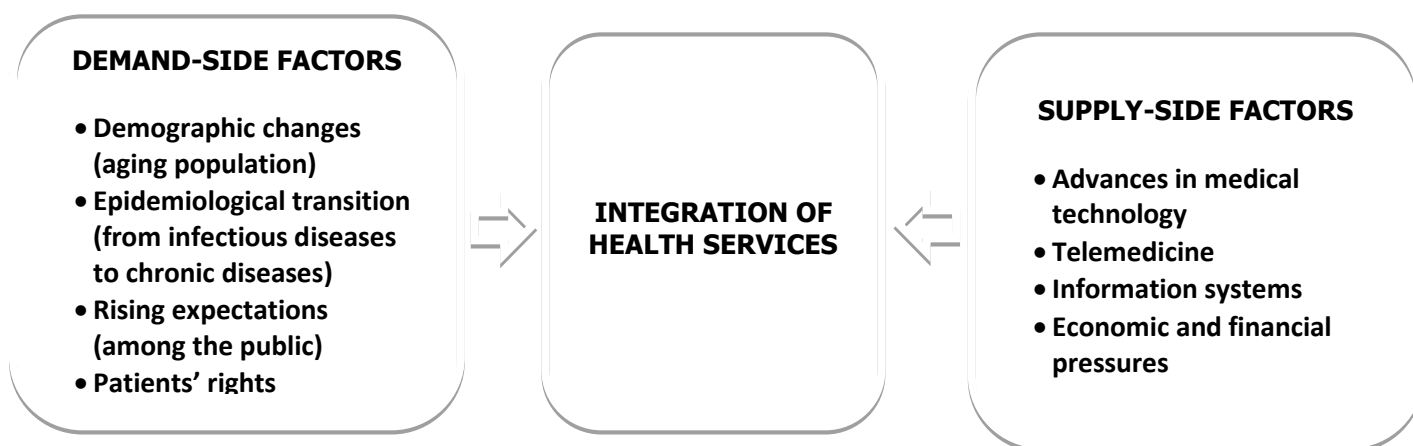
The technical brief prepared for WHO’s Department of Health System Governance and Service Delivery in 2008[18] describes integration as ‘the organisation and management of health services so that people get the care they need, when they need it, in ways that are user-friendly, achieve the desired results and provide value for money (Table 3).’ The authors report that integrated health services means different things to different people. There are six main usages of the term integration in the literature with many nuances within the six usages:

1. ‘Integrated’ is frequently used to refer to a package of preventive and curative health interventions for a particular population group at a single point. The aim of this form of integration is a one-stop shop for interventions in the target population.
2. ‘Integrated health services’ can refer to multi-purpose service delivery points: that is, a comprehensive range of (public health, primary care and minor injury ) services is provided for a catchment population at one location and under one overall manager. The aim of providing multi-service delivery points is co-ordinated care.
3. ‘Integrated services’ to some means achieving continuity of care over time, for example a continuum of care for chronic diseases between medical care and nursing care.
4. Integration can also refer to the vertical integration of different levels of service. A key feature of this type of integration is well functioning process for referrals up and down the levels of the system and between different types of providers.
5. Integration can also refer to integrated policy-making and management which is organised to bring together decisions about different parts of the health service, at different levels or across different sectors.
6. Integration can mean working across sectors such as the health and social sector

Kodner and Kyriscou[19] (2000) say the term ‘integrated care’ has many meanings. The definition Kodner and Kyriscou used for the purposes of their discussion on integration is that it is a ‘discrete set of techniques and organisational models designed to create connectivity, alignment and collaboration within and between the cure and care sectors at

the funding, administrative and/or provider levels (Table 3).’ With respect to their definition, their article focuses on the organisational models of integrated medical and social care rather than integration of public health and medical care or specific integration tools *per se* (such as case management, care plans, etc.). Kodner and Kyriscou expect integrated care to enhance consumer satisfaction, quality of care, quality of life and health system efficiency for patients with complex needs requiring services from two or more sectors or entities.

**Grone and Garcia-Barbero[20]** in a position paper for the WHO European office for integrated health care services in 2001 state that one of the main functions health services is to make a significant contribution to population health and the quality of life of people. On the demand side, demographic and epidemiological changes, rising expectations of the population and patients’ rights require reform of the health system. On the supply side, the development of medical technology and information systems and restrictions from funding economic pressures call for reforms to contain costs. The authors say that the demand-side factors require the integration of services and supply side factors (such as medical technology and information systems) may facilitate integration (Table 3 and Figure 1).



**Figure 1. Demand and supply factors influencing integration of health services.**

*Source: Adapted from Grone and Garcia-Barbero, 2001*

**Kodner and Spreeuwenberg [21]** (2002) also describe integrated care as having many meanings and they describe health care integration as ‘bringing together of inputs, delivery, management and organisation of services as a means of improving access, quality, user satisfaction and efficiency (Table 3).’ They say that integration is at the heart of systems theory and therefore, central to organisational design and performance of such systems. Therefore, the fulfilment of system aims necessitates co-operation and collaboration among and between the various parts of the organisation or system. In this sense, according to the authors, integration is the ‘glue’ that bonds the entities together, thus enabling them to achieve common goals and optimal results.

**Delnoij [22]** in 2002 pointed out that all individual European health systems are confronted with similar problems: namely those of ageing populations that have gradually entered the fourth stage of epidemiological transition. The fourth-stage is characterised by on-going degenerative or chronic diseases and an ageing population. Also, as a result of on-going technological development (such as improved surgical techniques and anaesthesiology) hospitals are changing from ‘large temples of technology’ towards ‘acute care hospitals and ambulatory surgery centres’ providing short-term care through increasingly specialised professionals. Both of these conditions require more co-operation between acute hospitals and primary care and social services. The degree to which integrated care requires adaption at the micro (clinical) level, and the actual forms it takes at the intermediate (or organisational and professional) level, is affected by characteristics of the health care system at the macro level (policy and strategic planning) level (Table 3). For example, Dutch health care providers claim that their efforts in bringing about more integration between ‘cure’ and ‘care’ facilities are frustrated by the fact that there are two different insurance schemes for ‘cure’ and ‘care’, with different administrative procedures and a different incentive structure. Characteristics of the macro level (regulatory, policy and financing system) promote or hamper or the development of integrated care on the meso and micro level. Delnoij does not deal with the integration of public health and medical care.



**San Martin-Rodriguez and colleagues** [23](2005) discuss health-care collaboration as the process by which interdependent professionals are structuring a collective action towards patients' care needs (from D'Amour, 1997). This collaborative process is built on a voluntary basis and necessarily implies negotiation. It requires that the parties forego a competitive approach and adopt one based on collaboration, both between professionals and between health care entities (Table 3). Implementing this type of change is not a simple matter. In fact, developing collaborative practice among a group of health care professionals represents a considerable challenge to political decision-makers as well as to organisational managers.

**Ciliska et al** [24] (2005) discuss integration and collaboration as two separate entities. 'It is clear that there is considerable overlap in roles, responsibilities and functions between public health and primary care, especially related to disease and injury prevention and health promotion. This paper does not consider full integration of the two areas of health care, but assumes the existing organisational structures will remain independent of each other, and people from different sectors of health care will continue to work together.' The term 'working together' they label 'collaboration' but there is no specific definition of integration or collaboration in their article.

**Martin-Misener and Valaitis** [25] (2008) describe collaboration between primary care and public health services as a 'recognised relationship among different sectors or groups, which is formed to take action on an issue in a way that is more effective or sustainable than might be achieved by each acting alone (Table 3).' The authors say that 'health systems are struggling to determine the best ways for primary care and public health to collaborate and search for solutions that go beyond their own limited vision of what is possible.' This type of collaboration is important for any two or more health services which are required to work together in order to achieve a common goal and additive or multiplicative advantage (known as synergy).

**Stein and Reider** [26], (2009) report there are many labels associated with integrated medical and social care such as shared care (in the United Kingdom), transmural care (in the Netherlands), managed care (USA and Switzerland), comprehensive care and disease management. All models work to solve comparable problems with similar tools, but the models differ significantly in their scope and point of view. This leads to the problem of defining integrated care. The authors conclude that 'integrated care is an umbrella term, encompassing diverse initiatives that seek to address fragmentation, but that differ in underlying scope and values (Table 3).' The authors say that it is difficult to develop a consistent definition when the underlying scope and values differ widely across jurisdictions.

**Rømøren et al** [27], in 2011 describe and analyse the integrative health initiatives and proposals during recent years and discuss possible reasons for changes and postponements in Norwegian health policy. They refer to integration as 'coordination' of the services. In Norway, coordination refers to mechanisms to integrate activities between health care entities to facilitate appropriate service delivery (Table 3).

**Shaw et al** [28] (2011), at the Nuffield Trust in the UK, distinguish between integration and integrated care. A focus on integrated care can help policy-makers, managers and practitioners decide on the model of care they wish to develop. They can draw upon a combination of processes and models that enable integrated care to develop. The term 'integrative processes' provides a link between the concept of integrated care (in terms of the ambition to deliver services across providers with minimal duplication and disruption, and with high-quality outcomes and positive patient experience) and the concept of integration (in terms of the methods and approaches used to align goals across professional groups, teams and organisations). They conclude 'integrated care is an organising principle for care delivery with the aim of achieving improved patient care through better coordination of services provided. Integration is the combined set of methods, processes and models that seek to bring about this improved coordination of care (Table 3).'

**Monitor** [29] an independent organisation in the United Kingdom set up in 2004, which in November 2012 was given specific responsibility to enable integrated care where this improves quality of care, efficiency, and/or reduces inequality. There is now a clear consensus that successful integrated care is primarily about patient experience, although all dimensions of quality and cost-effectiveness are relevant. According to the Monitor report (2012),



A major obstacle to integration is geographical area. Integration works better with a geographical planning approach because the same teams are working together all the time. Geographical integration is very difficult where different funders and different administrators are providing healthcare in the same regions.[15] Competing funding streams have the effect of creating silos at the local level rather than encouraging cooperation across entities.[30]

### Summary question 1

There are many definitions of health and wellbeing, and for the purposes of this report we used the World Health Organization (WHO) definition which describes 'health and wellbeing as everyone achieving his/her potential to enjoy complete physical, mental and social wellbeing.' The attainment of health and wellbeing requires an organised system to maintain and promote health and this is known as the public health system. Public health is uniquely situated in that it is concerned with population health with a focus on wellness, prevention of disease or its deterioration, and the collection and analysis of information. The core functions of public health are: population health assessment and consultation, health and disease surveillance, health protection, health promotion, disease and injury prevention and detection, and disaster response.

Primary medical care is defined by the Institute of Medicine (IOM) as the 'provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community'. It is important given the subject of the review to isolate the joint functions of public health and primary medical care which include: health assessment, surveillance and evaluation; health promotion; and the prevention and detection of disease or injury.

'Integrated care' is a complex and still evolving concept. A literature review (in 2009) yielded approximately 175 definitions. Integrated care touches all aspects of health care including public health, medical care (including acute hospital and primary medical care) and social care. In addition, there are many approaches to dealing with the concept of integration.

Integration (from the Latin *integer*, meaning whole or entire) generally refers to combining parts so that they either work together or form a whole. In the literature the term collaboration is used interchangeably with integration. Collaboration comes from the Latin *collaborare* meaning to labour together and can be defined as a joint effort of multiple individuals or work groups to accomplish a complex task or project. Yet another term that is used in the literature to describe uniting services in the health system is coordination from the Latin *coordinatio*. Coordination is defined as the bringing of different elements of an organisation (or complex activity) into a relationship that will ensure effectiveness and harmony. In addition, the word synergy, from the Greek word *synergia* meaning 'working together', is used to describe the interaction of elements of the public health system and primary medical care system to produce an effect greater than the sum of their individual effects.

There is no unified or commonly agreed conceptual model for health systems integration and there is considerable diversity in the structures and processes for integration. Terminology plays a critical communications role with respect to how we envisage, design, deliver, manage, regulate, finance and evaluate healthcare services. This lack of specificity and clarity in the definition and process of integrated care hinders systematic understanding and successful, real-world application of integration. While there is a lot of conceptual work surrounding integration, there is a lack of a solid empirical framework.

**Table 3. Definitions of integration abstracted from available literature.**

Organisation*	Definition
WHO 2008 *[18]	'The organisation and management of health services so that people get the care they need, when they need it, in ways that are user-friendly, achieve the desired results and provide value for money.'
Kodner and Kyriacou 2000[19]	Integrated care to be a discrete set of techniques and organisational models designed to create connectivity, alignment and collaboration within and between the cure and care sectors at the funding, administrative and/or provider levels. (specific to medical care and social care integration)
Grone and Garcia-Barbero 2001[20]	Health care integration generally means: the 'bringing together of inputs, delivery, management and organisation of services as a means of improving access, quality, user satisfaction and efficiency.'
Kodner and Spreeuwenberg 2002[21]	'Integration is a coherent set of methods and models on the funding, administrative, organisational, service delivery and clinical levels designed to create connectivity, alignment and collaboration within and between the <b>cure and care sectors</b> . The goal of these methods and models is to enhance quality of care and quality of life, consumer satisfaction and system efficiency for patients with complex, long term problems cutting across multiple services, providers and settings. The result of such multi-pronged efforts to promote integration for the benefit of these special patient groups is called integrated care'. (specific to medical care and social care integration)
Delnoij et al 2002[22]	<ul style="list-style-type: none"> <li>● Functional integration on the macro level of a health care system, i.e. mainstreaming of the financing and regulation of cure, care, prevention, and social services.</li> <li>● Organisational integration on the meso level of health systems, e.g. in the form of mergers, contracting or strategic alliances between health care institutions.</li> <li>● Professional integration on the meso level of health care systems, e.g. in the form of mergers (e.g. group practices), contracting or strategic alliances between health care professionals.</li> <li>● Clinical integration on the micro level of health care systems, i.e. continuity, co-operation and coherence in the primary process of care delivery to individual patients. (mainly for medical care and social care integration)</li> </ul>
San Martin-Rodriguez et al 2005[23]	Collaboration in health care teams is 'the process by which interdependent professionals are structuring a collective action towards patients' care needs (D'Amour, 1997).'
Martin-Misener and Valaitis 2009[25]	Collaboration or synergy, 'a recognised relationship among different sectors or groups, which is formed to take action on an issue in a way that is more effective or sustainable than might be achieved by the public health sector acting alone.'
Stein and Reider, 2009 [26]	What we now refer to as 'integrated care' is 'an umbrella term, encompassing diverse initiatives that seek to address fragmentation, but that differ in underlying scope and values.' (mainly for medical care and social care integration)
Rømoren et al 2011[27]	Coordination 'refers to mechanisms to integrate activities between health care organisations to facilitate appropriate service delivery.'
Shaw, et al 2011[28]	Integrated care is 'an organising principle for care delivery with the aim of achieving improved patient care through better coordination of services provided. Integration is the combined set of methods, processes and models that seek to bring about this improved coordination of care.'
Frontier Economics 2012[29]	Monitor working definition is... 'A working definition of integrated care may be around the smoothness with which a patient or their representatives or carers can navigate the NHS and social care systems in order to meet their needs'.

\*The definitions are in chronological order except for the WHO definition as the WHO sets down healthcare regulations for European countries

**Question 2: Describe the mechanisms (synergies, typologies and/or tools) used to integrate health and well-being and general health services in other health care systems?**

**Mechanisms: Question 2 parts (i – iv) inclusive**

- |      |  |
|------|--|
| i.   | <b>Identify</b> the mechanisms used for integration;   |
| ii.  | <b>Define</b> the mechanisms and the desired outcomes;   |
| iii. | <b>How</b> and in what <b>context</b> (considering environment, historical and funding) are the mechanisms applied in the specified countries; |
| iv.  | Describe <b>adaptions</b> (if any) that were made to the mechanisms in any of the specified countries.   |

There are many definitions of integration and integrated care (Table 3). However having examined various definitions in question one, it is clear that integration is concerned with the process of bringing policy makers, organisations professionals and service users (in some cases) together with the aim of improving the experience and outcomes for patients through the delivery of integrated care. An integrated framework of care should reduce fragmentation of health care, duplication of health services and missed opportunities for appropriate health care. Fragmented care leads to dissatisfied service users, poor patient outcomes, inefficient services and wasted resources. Fragmentation, duplication and missed opportunities are often the result of policy-makers, service planners, health organisations, and service providers operating independently of each other, with adverse consequences for service users [31].

No unified or commonly agreed conceptual model for health systems integration was found in the literature reviewed. The authors present a diversity of structures and processes for health systems integration, and authors examine integration from various viewpoints. Kodner and Spreeuwenberg[21] (2002) refer to the bewildering array of vague and confusing terms and concepts surrounding integrated care as being akin to the biblical 'Tower of Babel', while Howarth and Haigh[32] in 2007, characterise the many seemingly related and overlapping notions as a 'quagmire of definitions and concept analyses.' According to Nolte and McKee (2008), this problem reflects integrated care's polymorphous nature[33]. Terminology plays a crucial role with respect to how we envisage, design, deliver, manage and evaluate healthcare services. The lack of specificity and clarity inherent in the definition of integrated care greatly hampers systematic understanding and successful, real-world application. This is further complicated by the lack of a solid empirical framework.[34] Such a framework is needed to facilitate communication, hypothesis generation, policy formulation, program development and evaluation in the integrated care field[19].

Kodner [35] citing Robins in 2004 reports that organisational theory and management science encompass the systematic study of organisations from several different perspectives (which include: individual and group dynamics; whole organisation; and power, culture and networking) and the application of this knowledge to improve business and related practices, including those in healthcare. Kodner goes on to quote Scott in 1992 who says effective organisational design and performance depends on achieving a state of integration. In the same paper, Galbraith reports that the fulfilment of organisational aims demands cooperation and collaboration between the various components and processes. Essentially, integration is the 'glue' that bonds the entity together, thus enabling it to achieve common goals and optimal results.[21] In their seminal review of health systems integration, Suter and colleagues [36] concluded that the principles and lessons of organisational behaviour and management practices in the business sector can contribute to our understanding of integrated care. Economic ventures have similar goals to those of healthcare providers with respect to integration as a structure or process. Organisational culture has also been identified as a significant barrier to integration.

Kodner [35] concludes from his reading of papers that Integration is a nested concept which has many dimensions such as focus, type, level, breadth, degree and initiatives, and these dimensions are described below.

According to Kodner [35], integration efforts can **focus** on:

1. Entire communities or enrolled specific populations irrespective of health status;
2. Vulnerable client sub-groups (such as the frail elderly and those with disabilities);
3. Patients with complex illnesses (such as those with chronic disease or complex illnesses such as certain categories of cancer).

Vulnerable people and patients with complex needs benefit the most from (effective) integrated care.[37]

There are five **types** of integration occurring within the system:[38]

1. **Organisational** integration (where organisations are brought together through legal instruments or agreements such as mergers (forming a single entity), collectives (forming an administrative grouping), or networks (forming a virtual group);
2. **Functional** integration (where back-office and support functions are integrated);
3. **Service** integration (where different clinical services are integrated at an organisational level such as through multidisciplinary teams);
4. **Clinical** (professional) integration (where care by professionals and providers to patients is integrated into a single coherent process within and between professionals and their organisations, such as the use of one care plan, shared clinical guidelines and protocols, and devolved shared decision-making etc);
5. **Normative** integration (where an ethos of shared organisational and professional values enables trust and collaboration in delivering health care within and across organisations);
6. **Systemic** integration (where there is alignment of regulation, policies and incentives at the administrative and organisational level known as the integrated delivery system).

Different authors describe **levels** of Integrated care and the number of levels depend on the author:

1. The **five levels** of integration identified by several authors are: funding, administrative, organisational, service delivery, and clinical [21], [35]
2. The **three levels** of integration are: macro (regulation, policy and strategic planning), meso (organisational and professional or physician) and micro levels (clinical) [9, 22, 31, 39, 40]

San Martin-Rodriguez[23] terminology further confuses the issue as systemic and organisational can refer to both levels or types of integration. It is thought that interventions that span multiple, interlocking domains, both in terms of levels and types of integration, allow for better patient outcomes and system-level performance.[19]

The **breadth of Integration** can be horizontal or vertical.[39] Organisations link up to provide a range of clinical and functional services in two ways: (1) horizontal integration, wherein organisations/units at the same level join together (for example two hospitals), and (2) vertical integration, which involves the combination of organisations/units at different levels (e.g., hospital, community health centre, home care agency and nursing home). Vertically integrated solutions, whether real or virtual in nature, are a major ingredient of integrated care.

Walter Leutz[37] is the author of perhaps the most well-known framework for health-related service integration. According to Leutz [37], there are three **degrees of integration** that are applied to services:

1. **Linkage** entails health care providers working together on an ad-hoc basis to refer patients between services and communicate progress. The providers seek continuity of care within major system constraints. Policy-making and service planning changes are not required;
2. **Coordination** is a structured response between-organisations involving a defined mechanisms to facilitate communication, information-sharing and collaboration while retaining separate eligibility criteria, service responsibilities and funding;
3. **Full integration**, the most transformative approach, refers to the formation of 'new' entity that consolidates responsibilities, resources and financing from two or more entities into one single organisation or system in order to deliver and pay for the specified continuum of care required.

The desire for better integration of care has been expressed in different ways in the United Kingdom and a number of **initiatives or tools** have been introduced. For example, multidisciplinary care was a particular concern in the 1960s; partnership working in the 1970s; and shared care and disease management in the 1980s and 1990s (Figure 3).[28] From 1997 to 2010, greater integration was part of the drive for improved quality, efficiency and better patient outcomes. Initiatives such as ‘integrated care pathways’, ‘patient-centred care’ and ‘shared decision-making’ are examples of attempts to align clinical, managerial and service user interests, and to improve coordination of care for patients, in particular those with long-term conditions.



**Figure 3. Trends in integrated care initiatives.**

Source: Nuffield Institute [28]

Given the many dimensions to healthcare integration it is not surprising then, that authors who have written on the subject examine integration from varying viewpoints. From the seminal papers used for this report, the authors, describe **integration from four perspectives** which are:

1. **Levels of integration** [9, 21, 22, 31, 35, 39, 40] which has models on how integration is achieved at these levels.
2. **Typologies of integration** [23, 31, 38] and a range of integrative methods.
3. Actual **collaborations** in public health and primary care have been examined and categorised into themes known as **synergies**. [25, 41-43] These synergies present real life opportunities for public health and primary care to work together or
4. There are a small number of frameworks that do not fit with the three more common approaches described above but they do merit mention. [24, 44, 45] These approaches are more recent and are in development.

Kodner[35] in 2009 states that, while there is growing consensus that high performing healthcare organisations cannot do without health system integration, there is much less agreement on the best ways to accomplish the goal of integrated care. Kodner writes ‘integrated care as a concept is an imprecise hodgepodge. Its meanings are as diverse as the numerous actors involved.’ This poses difficulties for policy makers, planners, managers, clinicians and researchers with an interest in promoting, implementing and studying integrated care. In the end, according to Kodner,[35] it would be very helpful to somehow develop broad consensus around a common terminology and typology (or taxonomy).

We summarise the various mechanisms put forward **by the authors of the sixteen papers** used to compile the mechanisms aspects of the report.

## 1. Shortell and colleagues'[39] three levels of integration

Shortell et al [39] in a book entitled 'Remaking health care in America' examines integration in medical care. They describe a study carried out by the authors over a four year period in the USA complemented by two summers of fieldwork involving on-site interviews with system participants. They communicated their findings on integration under three headings: functional, physician-system and clinical integration. They also introduce the idea of vertical and horizontal integration in the area of clinical integration.

### Functional integration

They define functional integration as the extent to which key support functions and activities (such as financial management, human resources, strategic planning, information management, marketing and quality improvement) are co-ordinated across operating units so as to add the greatest overall value to the system. They further add that in a general sense integration involves shared or common policies and practices for each of these functions. Centralisation and standardisation do not automatically translate into a high level of integration, argue the authors, but the degree of integration depends on what the consequences of centralisation and standardisation are. The authors developed eight measures of functional integration.

- Human resources
- Marketing
- Support services
- Financial management – resource allocation
- Culture
- Financial management – operating policies
- Strategic planning
- Quality assurance

### Physician-system integration

Physician Integration according to the authors links doctors with the system. It is defined as the extent to which physicians are economically linked to a system, use its facilities and services, and actively participates in its planning, management, and governance. The outcome of integration at this level is very much influenced by the physicians involved. Information systems and total quality management processes are particularly important at this level say the authors. The authors used five objective measures of physician-system integration.

- Economic involvement
- Physician benefits
- Shared contracts
- Administrative involvement
- Physician organisation

### Clinical integration

Clinical integration is defined by the authors as the extent to which patient care services are co-ordinated across people, functions, activities, and sites so as to maximise the value of services delivered to patients. The authors used six objective measures of clinical integration.

- Clinical protocol development
- Medical records uniformity and accessibility
- Clinical outcomes data collection
- Clinical programming and planning efforts
- Shared clinical support services
- Shared clinical service lines



In the long run, according to the authors, none of these integration efforts will succeed unless a system's governance and management structure are aligned and actively supportive of these efforts. A significant challenge that organisations face on their integration journey will be in designing the 'right' governance and management model for their specific system (and market) at a given point in time.

## 2. Curry & Ham [31] use three levels of integration, describe the breadth of Integration and the six types of integration

Curry and Ham [31] describe and summarise relevant evidence about high-profile integrated systems and outline examples of integrated care for particular care groups or people with the same diseases or conditions. They also review ways of achieving closer integration for individual service users and carers through care co-ordination and other approaches. The authors indicate that they did not intend their review to be an exhaustive review of these issues; rather it offers a selective summary of experience and evidence, focusing on examples of integrated care that appear to have most relevance to current NHS policy in England. It covers medical and social care integration mainly but it has relevance for population or public health integration. The paper presents selected examples of integrating health care at the macro (USA), meso (USA, Canada, Italy, England, Sweden, Germany, Scotland) and micro level (UK, USA, Netherlands, Austria, Germany, Norway). Some of these countries fund their services through health insurance and so are relevant to the Irish context.

1. According to the authors the **macro level** is one at which providers, either with other providers and/or commissioners, seek to deliver integrated care to the populations that they serve. Examples include health maintenance organisations such as Kaiser Permanente, Geisinger Health System, Mayo Clinic and integrated medical groups. Figure 4 presents a detailed description of macro level integration.
2. The **meso level** is one at which providers, either with other providers and/or commissioners, seek to deliver integrated care for a particular care group or populations with the same disease or conditions, through the redesign of care pathways and other approaches. Examples include initiatives to integrate care for older people in North America and Europe, disease management programmes, chains of care, and managed clinical networks (Figure 4).
3. The **micro level** is one at which providers either with other providers and/or commissioners, seek to deliver integrated care for individual service users and their carers through care co-ordination, care planning, use of technology and other approaches (Figure 4).

Curry and Ham discuss the breadth of integration and outline the distinction that can be made between horizontal and vertical integration. **Horizontal integration** occurs when two or more organisations or services delivering care at a similar level come together. Examples include mergers of acute hospitals as well as the formation of organisations such as care trusts that bring together health and social care. **Vertical integration** occurs when two or more organisations or services delivering care at different levels come together. Examples include mergers of acute hospitals and community health services, and tertiary care providers working with secondary care providers.

Furthermore they say that both horizontal and vertical integration may be real or virtual: **real integration** entails mergers between organisations, whereas virtual integration takes the form of alliances, partnerships and networks created by a number of organisations. **Virtual integration** may occur along a continuum, ranging from formalised networks based on explicit governance arrangements at one extreme to loose alliances or federations at the other. Virtual integration is often underpinned by contracts or service agreements between organisations, as in the supply chains found in many manufacturing industries. It can therefore be seen as a form of contractual integration rather than organisational integration.

### **Levels and descriptors of integration (as described by Curry and Ham)[31]**

#### **Macro summary:**

Integrated systems in the United States take a wide variety of forms while sharing many of the same characteristics. These characteristics include (derived from Shortell and Schmittiel 2004):

- Multispecialty medical groups in which generalists work alongside specialists to deliver integrated care;
- Aligned financial incentives that avoid the perverse effects of fee-for-service reimbursement, encouraging the prudent use of resources and promoting quality improvement;
- Information technology that supports the delivery of integrated care, especially via the electronic medical record and the use of clinical decision support systems;
- Use of guidelines to promote best practice and reduce unwarranted variations in care;
- Accountability for performance through the use of data to improve quality and account to stakeholders through public reporting;
- Defined populations that enable doctors and the wider health care team to develop a relationship over time with a 'registered' population;
- A physician–management partnership that links the clinical skills of health care professionals and the organisational skills of executives;
- Effective leadership at all levels with a focus on continuous quality improvement;
- A collaborative culture that emphasises team working and the delivery of patient-centred care.

#### **Meso summary:**

Meso-level models take different forms and focus on various population groups. Integrated health and social care for older people has demonstrated the potential to decrease hospital use, achieve high levels of patient satisfaction, and improve quality of life and physical functioning. Kodner's (2009) review of North American models of integrated care for older people identified the following elements as being important in these models:

- Umbrella organisational structures to guide integration at strategic, managerial and service delivery levels;
- Case-managed multidisciplinary team care, with a single point of contact and coordinated care packages;
- Organised provider networks, with standardised referral procedures, service agreements, joint training, shared information systems, etc ;
- Financial incentives to promote prevention, rehabilitation and the downward substitution of services.

#### **Micro summary:**

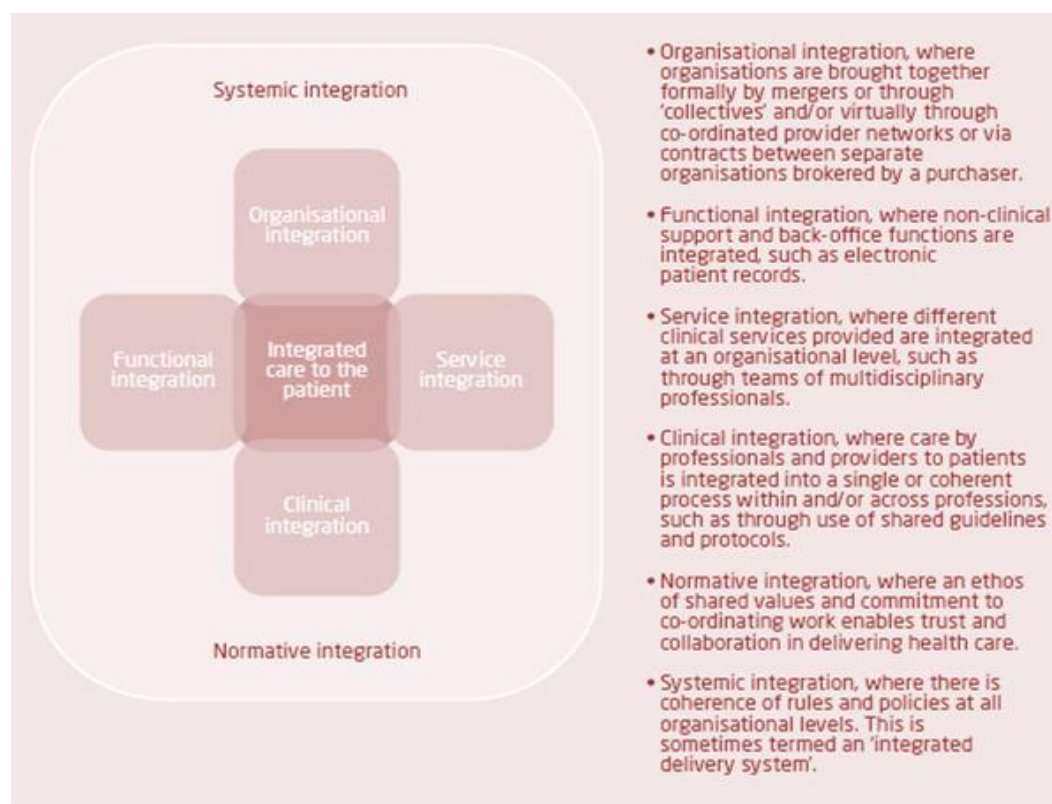
The tools of care co-ordination are many and varied and are rarely used in isolation. Interventions vary widely in terms of content and criteria of success, so it is difficult to compare them systematically. Different contexts and external factors may also play a part; for example, the impact of one technique within the context of a large integrated delivery system might be different to the impact of the same technique in a more fragmented system. In terms of the tools and techniques reviewed here, which represent only some of those in use, the evidence suggests the following:

- Care planning has been shown to produce high levels of patient satisfaction although roll-out has been patchy;
- Evidence for case management is inconsistent, with some initiatives demonstrating positive impacts on quality, outcomes and use of resources, and others having negligible or negative impacts; case management is more likely to offer benefits when targeted at high-risk groups;
- Patient-centred medical homes have demonstrated positive early results in terms of admissions and cost-effectiveness.;
- Evidence for assigning personal budgets suggests that they have the potential to increase satisfaction levels and provide care more efficiently, but they may be more appropriate for some groups than others;
- Use of electronic health records and electronic messaging in US integrated systems has reduced patient visits, increased adherence to evidence-based guidelines and facilitated care co-ordination;

Telehealth and telecare show the potential to yield positive results in terms of quality of life and resource use, although robust cost-effectiveness evidence is lacking.

**Figure 4. Levels and descriptors of integration synthesised by Ham and Curry[31].**

In order for integration to work at different levels, up to six types of integration are required. For the typologies of integration, the authors use the typologies developed by Lewis et al[46] in 2010 which build on the work of Fulop and colleagues[38], see Figure 5.



**Figure 5. Fulop's typology of integrated care.**

Source: Curry and Ham [31]. (Originated in Lewis et al, 2010)

Curry and Ham say that evidence from the United States indicates that organisational integration may occur in the absence of clinical and service integration. They quote a review by Burns and Pauly in 2002 who found that, 'the structures that were put in place to integrate different providers often failed to fundamentally alter the manner in which physicians practiced medicine and collaborated with other health care professionals'. The consequence was that 'integrated structures rarely integrated the actual delivery of patient care'. MacAdam[47] supports this observation in a 2008 review of provinces claiming to deliver integrated care to older people in North America when she found that very few provided co-ordinated care for older people and their carers. Alongside organisational integration, they postulate that it is important to consider the extent to which care is effectively co-ordinated. They suggest that organisational integration in itself may be insufficient to overcome fragmentation of care and that high levels of care co-ordination can be achieved both within integrated organisations and between different organisations working together in networks. This brings out a further important distinction, relating to the level of care that is the focus of integration. The authors outline that integration may be pursued at macro, meso and micro levels. Care co-ordination is one way of achieving integration at the micro level by ensuring that service users experience seamless care. Care co-ordination depends less on organisational integration than on clinical and service integration, because the experience of service users is influenced more by the nature of team working and the adoption of shared guidelines and policies than by the nature of organisational arrangements.

### **3. Stevenson Rowan and colleagues [9] use three levels of integration and four types of integration applied to public health**

Stevenson Rowan and colleagues [9] identified linkages between the public health and primary care sectors with the aim of devising a policy approach to integrate public health and primary care functions in Canada. The authors examine healthcare systems in Australia, Canada, Netherlands and the UK. They quote the work of Delnoij et al.[22] and specify integration at the macro, meso and micro levels of the healthcare system. In describing these levels Delnoij et al built on the work of Shortell et al[39] and seems to be the first to apply the sociological terms of meso, macro and micro to Shortell's levels. Functional integration occurs at the macro level and involves the financing of and regulating health care, care and prevention activities; Stevenson Rowan and colleagues added the term 'prevention activities' to the care and prevention description of Delnoij. At the meso or community level, there are two types of integration: organisational integration and professional integration. The former implies a strategic alliance or merger between public health and primary care, while the latter suggests that such mergers involve healthcare professionals working together, for example, in group practices. Finally, there is clinical integration at the micro level, which involves continuity, cooperation and coherence of healthcare delivery to individual patients.

The authors identified ten examples of collaboration in their literature review which were classified based on their level of implementation. For example, the United Kingdom's public health in primary care trusts was the only model found that focused on national-level implementation, from national health policy levels to providers. Five models were introduced at the community level. Four models were at the patient-provider level and were focused on the relationship between a public health department and primary care providers. Notably, five models were developed in Canada, a finding that may reflect the growing national interest in developing collaborative structures or the search strategy used. A summary of the ten examples examined by the authors is presented in Figure 6.

Country	Case example	Integration level
Canada	<b>1</b> Formalized collaboration of public health and primary care within a provincial network of CLSCs and Quebec's Public Health Act (CIHR 2003). Centres Locaux de services communautaires (CLSCs) (CIHR 2003; Hutchison et al. 2001)	Meso
	<b>2.</b> Collaborative working initiative between public health and family medicine (through McMaster University). Two integration models were developed: Heart Health and Public Health Nurse Secondment. General integration with some focus on chronic disease prevention (i.e., heart health in seniors) Primary Care and Public Health Links in Hamilton (Hill et al. 2001)	Micro
	<b>3.</b> Primary Health Care Practice Facilitation model is a flexible, tailored and multifaceted approach that selects and trains nurses as practice facilitators to assess, plan and provide assistance to physicians and staff in practice change. Primary Health Care Practice Facilitation (PF) for Preventive Services in Eastern Ontario (Lemelin et al. 2001; Baskerville et al. 2001)	Meso
	<b>4.</b> Authors applied the Outreach Practice Facilitation model to infection control using public health nurses. Approach led to a 50% improvement in respiratory infection control measures in 53 family physicians' offices. Outreach Facilitation Model Applied to Infection Control (Hogg and Huston 2005; Hogg et al. 2006; Huston et al. 2006)	Micro
	<b>5.</b> Crowfoot practice has a public health nurse located at the physician's office to perform well-baby assessments and child visits. Alberta: The Crowfoot Experience (Aufrecht 2004)	Micro
Australia	<b>6.</b> Australian national model is presented for chronic disease prevention to strengthen the interface between public health and primary healthcare. Model is consistent with the WHO's Global Strategy for Prevention and Control of Non-Communicable Diseases. Preventing Chronic Disease: A Strategic Framework (National Public Health Partnership in Australia 2001)	Meso
	<b>7.</b> Smoking, Nutrition, Alcohol and Physical Activity (SNAP) Australia also has an integrated model to support the management of behavioural risk factors of SNAP in general practice. Smoking, Nutrition, Alcohol and Physical Activity (SNAP) (Joint Advisory Group on General Practice and Population Health 2001)	Meso
UK	<b>8.</b> Structural changes in the National Health Services (NHS) in England have placed public health in Primary Care Trusts (PCTs) and will change the way primary care operates (Griffiths and Haslam 2002; Hutchison et al. 2001). Public Health in Primary Care Trusts (Griffiths and Haslam 2002; Heller et al. 2003; DOH 2001, 2002; Holland 2002; Sim and Mackie 2002)	Macro
Netherlands	<b>9.</b> This model integrates public healthcare and private medical care (primary healthcare and cardiologists at the local hospital). The model was selected by WHO as a demonstration project on the collaboration between public health and general practice in the field of cardiovascular prevention. Hartsлаг Limburg (Limburg Heartbeat) Program (van Ree 2004) - a prevention project	Micro
	<b>10.</b> Community-Oriented Primary Care Model (COPC) COPC model is "a continuous process by which primary care is provided to a defined community on the basis of its assessed health needs through the planned integration of public health practice with the delivery of primary care services" (Mullan and Epstein 2002). COCP was originally conceptualized in the 1940s by Sidney Kark in South Africa (Illiffe and Lenihan 2003). Today much has been published about COPC, most notably in the UK (Illiffe and Lenihan 2003; Gillam and Schamroth 2002; Illiffe et al. 2002; Busby et al. 1999) and the US (Longlett et al. 2001, 2002; Pickens et al. 2002; Geiger 2002; Cashman et al. 1999).	Meso

**Figure 6. Classification of 10 case examples by Stevenson Rowan using the levels of Delnoij et al. [9].**

#### 4. San Martin-Rodriguez and colleagues[23] three determinants of successful collaboration

San Martin-Rodriguez et al [23] presents a literature review of ten studies performed between 1980 and 2003. The countries covered in the review are not stated precisely but Canada, UK, USA and Mexico are mentioned. The authors intended this review as a guide for professionals, managers and decision-makers who are developing and nurturing interprofessional collaboration. They suggest that successful collaboration in health care teams can be attributed to numerous elements, including processes at work in interpersonal relationships within the team (the interactional determinants), conditions within the organisation (the organisational determinants), and the organisation's environment (the systemic determinants).

Under the framework (Interprofessional Education for Collaborative Patient-Centred Practice: An Evolving Framework) used as a guide for this collective work, and presented in the published supplement, these determinants have been classified as: interactional factors (interpersonal relationships between team members); organisational factors (conditions within the organisation); and systemic factors (conditions outside the organisation). The collaboration dynamics are influenced by all the above determinants.

- The **systemic determinants** are further classified under a social system, cultural system, professional system and educational system;
- The **organisational determinants** are further classified under the themes structure, philosophy, administrative support, resources and co-ordination mechanisms;
- The **interactional determinants** are sub-classified under the themes willingness to collaborate, trust, communication and mutual respect.

The environment in which collaborative practice takes place is influenced by systemic factors. In a professional practice setting, two levels of determinants are at work: the organisation (organisational factors) and the team (interactional factors).

## 5. Lasker and colleagues[41, 42] identification of six synergies and structural foundations for collaboration

Lasker and colleagues' [41, 42] monograph focuses not on what a collaborative relationship between medicine and public health might be or should be in an ideal world, but rather on what it can be today, and on how the experiences of those actively engaged in collaborative efforts can help other health professionals and institutions deal with the challenges they face in a very turbulent environment. A **grounded theory approach** was used to explore the lived (or real life) experience of collaboration. Examples of collaboration (414) were submitted by healthcare providers throughout the USA and these examples were coded, categorised and **six synergies** (or themes) for collaboration emerged. In addition to the synergies, three other dimensions that enhanced collaboration were identified and these were:

- **Structural foundations:** the partners' organisational relationships;
- **Geography:** where the collaboration takes place;
- **Partners:** the types of professionals and organisations involved in the collaboration.

One of the advantages of studying a large number of cases of collaboration, as was done in the monograph analysis, is that it is possible to move beyond individual experiences to identify common themes and strategies. Although each of the cases collected is, in some sense unique, analysis of the collaborations as a whole elucidated a set of models that are applicable to a broad range of localities, health problems, and programme initiatives. One aspect of this modelling system relates to the way partners in a collaboration combine their resources and skills. Lasker and colleagues refer to these types of models as '**synergies**' because they allow partners to transcend their own limitations and achieve benefits that none of them can accomplish alone.

In the monograph, the authors describe six reinforcing combinations of resources and skills (synergies), including concrete models that partners use to put each synergy into action. These models are not mutually exclusive; most collaborations, in fact, involve more than one synergy. In the Pocket Guide, each case is coded according to the particular synergy model(s) that it exemplifies. Lasker et al provides, a brief description for each synergy and under each synergy he presents a number of sub-synergies (Figure 7). Appendix D presents examples of each synergy.

The **six synergies** are:

- Synergy 1:** Improving health care by coordinating medical care with individual level support services;
- Synergy 2:** Improving access to care by establishing frameworks to provide care for the un- or underinsured;
- Synergy 3:** Improving the quality and cost-effectiveness of care by applying a population perspective to medical practice;
- Synergy 4:** Using clinical practice to identify and address community health problems;
- Synergy 5:** Strengthening health promotion and health protection by mobilising community campaigns;
- Synergy 6:** Shaping the future direction of the health system by collaborating around health system policy, health professions training, and health-related research and information.

#### Lasker's six synergistic themes and their subthemes[41, 42]

- **Synergy 1:** Improving health care by coordinating medical care with individual level support services.

In the first type of synergy, partners in collaborations seek to enhance the success of medical care—and address determinants of health that go beyond medical care—by coordinating a broad array of services directed at individuals. These collaborations link clinical care to: (a) wraparound services, such as transportation, translation, and child care, which help patients overcome logistical barriers to accessing care; (b) outreach services, such as home visits, which are needed to identify problems at an early stage, to help patients and their families deal with complex medical regimens, and to promote adherence with treatment programs; and (c) social services, which help patients obtain or retain health insurance, and obtain needed nutritional and economic supports.

- a. In synergy 1a, partners link medical and support services by bringing new types of personnel to existing practice sites, for example, by connecting public health nurses to medical practices providing care for women or children in the Medicaid program;
- b. In synergy 1b, partners establish 'one-stop' centres that locate a broad range of medical and support services in one place. This type of co-location makes services more convenient to clients and provides a structure for sharing staff, centralizing services, and coordinating the programs of different partners;
- c. In synergy 1c, partners coordinate medical and support services provided in various locations throughout the community. This 'centre without walls' approach assures that wherever an individual shows up, she or he is aware of the full range of services available through the system and has help in reaching and using those services. Some of the more integrated versions of this model use common contracting, centralized purchasing, and system-wide information systems to improve performance and achieve economies of scale.

- **Synergy 2:** Improving access to care by establishing frameworks to provide care for the un- or underinsured.

The second type of synergy makes it feasible for the mainstream medical sector to play a more active role in indigent care by overcoming a number of logistical, financial, and legal barriers that stand in the way.

- a. In synergy 2a, free clinics are established that provide indigent patients with free or discounted care;
- b. In synergy 2b, referral networks are established, which allow mainstream clinicians to provide free or discounted care where they usually work;
- c. In synergy 2c, academic or private medical practitioners are recruited to enhance staffing at clinics run by government agencies or not-for-profit organisations (such as community health centres). Often, this type of collaboration provides academic medical centres with additional sources of support for faculty salaries and with new training experiences for residents and students;
- d. In synergy 2d, contractual arrangements are made that shift the care of indigent patients from public health clinics to private medical practices, hospitals, health systems, or managed care organisations. Some health departments seeking to strengthen population-based services use this type of collaboration to move away from providing care directly to indigent individuals while continuing to assure the availability of safety-net services.



- **Synergy 3:** Improving the quality and cost-effectiveness of care by applying a population perspective to medical practice.

The third type of synergy applies a population perspective to medical practice in order to improve the quality and cost-effectiveness of medical care as well as the economic viability of medical professionals and institutions.

- In synergy 3a, partners make population-based information to support clinical decision making more available and useful to medical practitioners. By working together, they are able to make the content and format of this information more relevant to medical practice, and to reach a wider professional audience;
- In synergy 3b, partners link community-wide screening programs to follow-up medical care. By identifying patients who can benefit from medical care and then ‘funneling’ these patients to appropriate providers for further diagnosis and treatment, this type of collaboration enhances the cost-effectiveness of public health screening and provides medical practitioners with new patients (many of whom have insurance);
- In synergy 3c, population-based methodologies (such as clinical epidemiology, cost-effectiveness analysis, or performance measurement) are applied to clinical practice. Usually, these tools are used to support quality-improvement activities and strategic planning, or to enable medical practices and organisations to take on and manage financial risk.

- **Synergy 4:** Using clinical practice to identify and address community health problems.

A fourth type of synergy takes advantage of what can be accomplished through clinical practice to achieve clinically oriented public health goals, such as vaccinations, screening or prenatal care. These collaborations are particularly important as clinical preventive services increasingly become covered by health insurance benefits, as patients move from one medical practice or managed care organisation to another, and as purchasers and communities measure the extent to which Healthy People 2000 and HEDIS objectives have been achieved.

- In synergy 4a, partners design and/or implement community-wide information systems that incorporate clinical data from hospitals, laboratories, or office-based practices. When the medical and public health sectors design such information systems together, the systems often incorporate innovative features that make them more useful in the field. For example, some collaboratively developed vaccination registries provide medical practitioners with information about vaccines, with automatic reminder and recall letters personalised to the clinician’s practice, with patient flow charts, and with practice or management software;
- In synergy 4b, partners take advantage of clinical encounters to identify and address underlying health risks in patients. In some of these cases, supports provided by public health and community partners—such as counselling guides, culturally appropriate patient education materials, and resource directories—make it easier and less time-consuming for clinicians to elicit information about health risks, to counsel patients about personal behaviours that are detrimental to their health, and to connect them to community-based programs. In other cases of this type, partners address social or environmental causes of health problems in patients, for example, by using savings achieved by moving lead treatment from inpatient to outpatient settings to finance environmental strategies that reduce the need certain therapy;
- In synergy 4c, partners combine individual-level and population-based strategies to assure the delivery of a particular clinical service in private and public medical practices throughout the community. These cases involve a broad range of community groups in a variety of activities, including education and media campaigns to increase awareness of the problem among the

public, screening programs to identify people in need of the particular clinical service, outreach efforts to address logistical barriers that some patients face in obtaining the service, and supports for clinical practices;

- **Synergy 5:** Strengthening health promotion and health protection by mobilising community campaigns.

A fifth type of synergy moves away from clinical care, demonstrating how diverse groups in the community can work together around population-based strategies. Often, these collaborations address underlying causes of health problems, such as violence, alcohol use, tobacco use, high-fat diets, and physical inactivity. Many strengthen the capacity of health departments to carry out their essential population-based functions. More than any other synergy, these models show how the combined assets of the medical and public health sectors can be reinforced by other public, private, and not-for-profit organisations in the community.

- a. In synergy 5a, partners conduct community health assessments to identify health problems in the community. In many of these cases, the involvement of a spectrum of public and private sector partners facilitates the collection of relevant data from diverse sources, the analysis and reporting of data, and the often difficult move from data collection and the identification of health problems to the implementation of community interventions;
- b. In synergy 5b, partners mount public education campaigns to make people in the community aware of important health problems and what they can do about them. By involving diverse community groups in these campaigns, messages are more likely to be credible, understandable, and culturally acceptable, and to be delivered through routes and media that are most effective in reaching targeted population groups;
- c. In synergy 5c, partners advocate health-related laws and regulations, such as alcohol taxes, cigarette taxes, seat belt and helmet laws, or restrictions on the sale of firearms. In these cases, collaboration enhances the capacity of partners to gather policy-relevant information and to make a persuasive case to the public and policymakers;
- d. In synergy 5d, partners seek to achieve particular community health promotion objectives by implementing multipronged strategies. Often these collaborations include one or more of the activities described above in synergies;
- e. In synergy 5e, partners launch ‘healthy communities’ type initiatives. These collaborations go beyond categorical health promotion activities by establishing a broad-based process to deal with multiple community health issues over a prolonged period of time. Reflecting community perceptions about health problems, and recognising the importance of socioeconomic determinants of health, these collaborations address issues that go beyond the traditional purview of the health sectors, such as education, jobs, and housing.

5a–5c, as well as voluntary community initiatives, such as those that increase the availability of healthy food choices in schools, workplaces, and restaurants, or that establish incentives, opportunities, and safe environments for exercise.

- **Synergy 6:** Shaping the future direction of the health system by collaborating around health system policy, health professions training, and health-related research and information.

In collaborations oriented around health system policy, partners identify areas of common concern, and then combine their authority, influence, practical experience, and scientific expertise to do something about them. While most of the cases address governmental policy issues, particularly at the state level, some relate to organisational policy as well.

- a. In synergy 6a1 partners focus on policies that influence access to care for the un- and underinsured. Examples include the leveraging of public funds to support safety-net facilities, expansions in the availability of health insurance coverage, or legislative initiatives that give medical practitioners immunity from liability when they provide indigent care;
- b. In synergy 6a2 partners influence provider payment policies, such as the relative amounts that a state Medicaid program pays for paediatric care in emergency departments and medical offices;
- c. In synergy 6a3 partners influence insurance benefits policies, for example, by using established guidelines or cost-effectiveness analysis to expand coverage for preventive services in public or private insurance programs;
- d. In synergy 6a4 partners influence policies related to the quality of medical care, such as the development and application of practice guidelines, quality assurance standards, or performance measures;
- e. In synergy 6a5 partners influence policies related to the regional organisation of health care services or facilities, such as perinatal care or trauma services;
- f. In synergy 6a6 partners influence policies related to the organisation and financing of public health services or activities, for example, by working together to restructure health departments, boards of health, or particular public health programs, such as those concerned with maternal and child health or mental health.
- a. In synergy 6b1, a cross-sectoral perspective is incorporated in the curriculum of health professions degree programs. The extent of curriculum change in this model ranges from the marginal (e.g., opportunities to participate in extramural programs, or elective courses and rotations to which only a small proportion of students are exposed) to the substantial (e.g., the incorporation of a broad perspective in a school's mission or structure, or the institution of courses, rotations, or practica that are required of all students).
- b. In synergy 6b2, dual-degree programs are established that give students an MD/MPH or an RN/MPH, for example. This model may or may not involve much interaction between the schools or programs in different sectors.
- c. In synergy 6b3, formal, functional connections are established between medical and public health schools or academic programs. In some of these cases, faculty have dual appointments and/or teach courses in schools or departments in more than one sector. In others, students from a range of schools work together in interdisciplinary teams, sometimes for prolonged periods of time. Another example of this type of collaboration is the development of cross-sectoral academic centres.
- d. In synergy 6b4, academic training is linked to medical and public health practice sites and/or other organisations in the broader community. When dual appointments occur in this model, the health professional often serves as a faculty member at a school of medicine and as an official in a local health department. Some cases encourage cross-sectoral links between academia and practice by requiring that faculty devote a proportion of their time to community projects, or that students rotate through health departments, community health centres, or COPC practice sites.
- e. In synergy 6b5, cross-sectoral education or training is provided to health professionals in the field. In this model, perspectives are broadened through continuing education courses, leadership institutes, or degree-granting programs specifically designed for professionals in active practice.
- f. In synergy 6b6, opportunities are provided for cross-sectoral networking, such as collaborative conferences focusing on the interaction between medicine and public health.
- a. In synergy 6c1, partners establish multidisciplinary research centres. Some of these centres bring together diverse types of professionals within a single school. Others connect various schools within an academic health centre or connect academic institutions with health departments or other government agencies
- b. In synergy 6c2, partners promote cross-sectoral research through other, less formal, means.

**Figure 7. Lasker's six synergistic themes and their subthemes [41, 42].**

The author states that combining resources and skills is only one aspect of how collaboration works. Achieving these synergies, however, requires structural arrangements that allow partners from the two health sectors as well as from the broader community to continue to work within their own organisation while, at the same time, linking up with professionals or institutions in other sectors. Lasker also investigated the partners' organisational relationships and identified six '**structural foundations**' [41, 42] required for collaboration and these were coalition, contractual agreements, management systems, advisory bodies, intraorganisational platforms and ad-hoc agreements. Lasker and colleagues provided brief definitions for each type of structural foundation in Figure 8.

<b>Six structural foundations [41, 42]</b>	
1.	<b>Coalitions</b> are formal groups that bring together representatives of autonomous organisations to address a common problem or objective. The authority, responsibility, and capacity to take action lies with the coalition itself rather than with any one partner or external agency. Coalitions are particularly useful in collaborations that benefit from a broad range of community partners, particularly if they do not require equal or consistent involvement on the part of all partners or close coordination of partner activities;
2.	<b>Contractual agreements</b> are binding agreements (e.g., legal documents, memoranda of understanding, or verbal agreements) that commit one partner in a collaboration to carry out a function or to provide a service for another partner. Contracts are used in collaborations that depend on certain interactions between partners—usually the delivery of various health services to individuals. These agreements clarify partners' roles in critical interactions and assure that they are carried out;
3.	<b>Administrative/management systems</b> are personnel or offices that run some or all aspects of collaborative enterprises, allowing partners to closely coordinate their activities and resources, or to centralize organisation or control. Depending on the work involved, such a 'system' may be a full-time staff member dedicated to managing a collaboration, a management office within one partner's organisation, or a separate, autonomous management office. These arrangements make it possible for collaborations to integrate activities, to reduce duplication of services, and to achieve economies of scale;
4.	<b>Advisory bodies</b> are groups convened to provide an organisation in one sector (such as a government agency or research entity) with input or support from other sectors. Advisory bodies may deliberate independently in constructing recommendations, but they do not have the authority to make operational or policy decisions;
5.	<b>Intraorganisational platforms</b> are structural arrangements that allow a single organisation to expand its perspective by bringing in professionals with the skills and expertise of another sector. Examples include a managed care organisation that establishes a clinical epidemiology branch to assess quality or outcomes, or a section on public health within a medical society.
6.	<b>Informal arrangements</b> are any of a variety of ad hoc relationships among partners, which are generally dependent on personal, rather than structured, interactions.

**Figure 8. Lasker's six structural foundations [41, 42].**

In the Pocket Guide, cases are organised **geographically**, reflecting whether the collaboration or collaborative program initiative takes place in a particular state, in a multistate region, at the national level, or in a country other than the United States. This geographic information also is incorporated in the unique identifier assigned to each case. It is important to point out that while some of the collaborations listed under particular states are state-wide in scope, the vast majority reflect activity at the local level. Similarly, most of the national program initiatives promote collaboration at local and/or state levels.

Lasker identified the diverse professional backgrounds of the individuals working together (**as partners**) across a broad spectrum of organisations, including but also extending beyond the confines of medicine and public health.

#### **6. Martin-Misener and Valaitis [25, 43, 48, 49] use of Lasker's six synergies [41, 42] and San Martin-Rodriguez and colleagues[23] three determinants of successful collaboration**

Martin-Misener and Valaitis [25, 43, 48, 49] completed two review papers covering 114 published papers and five health systems (American, Australian, British, Canadian, New Zealand) from 1988 to 2011. Both review papers are a scoping review of collaboration between primary care and public health. One of the purposes of the review was to determine what is known from existing primary studies, literature reviews and descriptive accounts about structures and processes required to build successful collaborations between public health and primary care. The authors utilised Lasker's synergies [41, 42] with some adaption. The adaptations were revision of text describing the sub categories, addition of an 'other' category, and replacement of Lasker's six dimensions with San Martin Rodriguez and colleagues [23] systemic, organisational and interactional levels or determinants.

They categorised the collaborations using a revised version of Lasker's six synergies and their subcategories which is presented in Figure 9. The review found that of the 80 papers that reported collaborations between public health and primary care, Synergy 3 focusing on improving the quality and cost effectiveness of care by applying a population perspective to medical practice was the most common synergy reported (22.5%). Synergy 4 using clinical practice to identify and address community health problems was the next largest group (17.5%) followed by Synergy 1 improving health care by coordinating services for individuals (15%) and Synergy 6 shaping the future direction of the health system by collaborating around policy, training and research (15%). The authors also described an 'other' category that is represented by collaborations that focused on integration and/or collaborations aimed at quality improvement (8.8%).

Martin-Misener and Valaitis suggest that the success of synergies for collaboration is dependent on the robustness and cohesion of the systemic, organisational and interactional determinants and their supporting mechanisms within the health system. The authors also presented their results using the framework by San Martin-Rodriguez et al in 2005: systemic, organisational and interactional. According to the authors, successful collaboration or integration in health care teams can be attributed to numerous elements, including processes at work in interpersonal relationships within the team (the interactional determinants), conditions within the organisation (the organisational determinants), and the organisation's environment (the systemic determinants). The levels at which the determinants described in these papers occur are equivalent to the macro (systemic), meso (organisational) and micro (interactional) levels described by other authors. The synergies for collaboration cannot be mapped to the systemic, organisational and interactional determinants of integration.

### **Martin-Misener and Valaitis's[25, 43] adaption of Lasker's six synergies**

**Synergy 1:** Improving health care by coordinating services for individuals. This is done through:

- Bring new personnel and services to existing practice sites;
- Establish one stop centres (enhance compliance and reduce time spent at health services);
- Coordinate services at different sites.

**Synergy 2:** Improving access to care by establishing frameworks to provide care for uninsured. This is done through:

- Establish free clinics;
- Establish referral networks;
- Enhance clinical staffing at public health facilities;
- Shift indigent patients to mainstream medical settings.

**Synergy 3:** Improving the quality and cost effectiveness of care by applying a population perspective to medical practice. This is done through:

- Use population-based information to enhance clinical decision-making (needs, assessments, disease registers and health information systems);
- Use population-based strategies to 'funnel' patients to medical care (protocols);
- Use population-based analytic tools to enhance practice management.

**Synergy 4:** Using clinical practice to identify and address community health problems. This is done through:

- Use clinical encounters to build community wide databases (disease registers);
- Use clinical opportunities to identify and address underlying causes of health problems (proxy needs assessment but limited to the profile of the attendees at the practice);
- Collaborate to achieve clinically oriented community health objectives.

**Synergy 5:** Strengthening health promotion and health protection by mobilizing community campaigns. This is done through:

- Conduct community health assessments;
- Mount health education campaigns;
- Advocate health-related laws and regulations;
- Engage in community-wide campaigns to achieve health promotion objectives;
- Launch 'Healthy Communities' initiatives.

**Synergy 6:** Shaping the future direction of the health system by collaborating around policy, training and research. This is done through:

- Influence health system policy;
- Engage in cross-sectoral education and training;
- Conduct cross-sectoral research.

**Other category:** focused on integration and/or collaborations aimed at quality improvement

**Figure 9. Martin-Misener and Valaitis's adaption of Lasker's six synergies[25, 43].**

## 7. Marriot and Maples [45] five approaches to integration

Marriot and Mable [45] in a report to Health Canada in 2002 aimed to:

- update and assess developments in health system integration in Canada and other countries
- enhance and improve the level of understanding of concepts, models and their potential implications for Canada.

They present integration under **five approaches** which they say countries have explored in an effort to integrate health services. These include:

- The rostered (enrolled) 'full integration' organisation (eg insurance fund);
- The geographic regional organisation (geographical population usually under a tax based system);
- The integrated delivery system model (integration between cure and care providers);
- Primary health care reform (incorporation of primary care and hospital care or social care into one system);
- Voluntary collaborative initiatives of otherwise independent entities (presented within the rubric of integration' of services).

Each of the models and approaches has a predominant point of emphasis, respectively, a rostered population, geography, providers, primary health care, and voluntary collaboration, reflecting varying levels of integrative capacity. These distinguish and differentiate, in terms of shaping mission, orientation and capacity (operational characteristics, service responsibilities, ways of addressing the population served, the relationships established between organisation and providers and governments, etc.). Each approach holds different implications for government policy.

## 8. Ciliska et al [24] use of one of Marriot and Mables approaches

Ciliska and colleagues [24] use one of Marriott and Mable's (2002) five approaches, the **voluntary collaborative initiatives between two independent entities approach**. They performed a literature review and interviewed a dozen key informants in order to present some in-depth examples of the strategies for and challenges of collaboration between public health and primary health care. Thirteen studies were reviewed by the authors. There was one paper based on the national approach in Canada, and seven papers reporting collaborations in Ontario. Three examples of collaboration were obtained from the USA and one example each from the UK and Israel. Ciliska et al assumed that public health and primary care functions would remain independent entities and focused their paper on one of the approaches proposed by Marriott and Mable namely, voluntary collaborative initiatives.

For their results they combine key examples from the Canadian literature and key informants, organised into the categories of 1) primarily primary care functions within public health settings, 2) primarily public health functions in primary care settings, and 3) representatives from both organizations working together in a different setting. The authors describe the public health and primary care collaborations identified in their review in Figure 10. In addition, they present a fourth category 'other literature' where they mention Lasker's work in the USA.

Public health and primary care collaborations identified by Ciliska et al.[24]
<p>Examples of primary care taking place within public health using voluntary collaborative initiatives</p> <ul style="list-style-type: none"> <li>• The MOHLTC provided funds (\$1M) for cervical cancer screening outreach nurse practitioners with five northern public health units in order to increase the rate of early detection(Michel, Ehrlich, Wright, Szadkowski and McFarland, 2003);</li> <li>• Nurse practitioners employed by the health departments in Niagara and Hamilton work on mobile clinics with people who are homeless or have difficulty accessing treatment services;</li> <li>• The municipality and province (where Halton is situated) funds 1.5 nurse practitioners working between a number of sexual health clinics and employs physicians paid by the hour. The medical director receives an honorarium for his/her work;</li> <li>• Huron County is coordinating the development of a management strategy for the local Family Health Team and acting as the Transfer Payment Agency.</li> </ul>
<p>Examples of public health functions provided by primary care organisations using voluntary collaborative initiatives</p> <ul style="list-style-type: none"> <li>• Beginning in the 1960s and continuing to the present, some health departments organised public health nurse attachments or secondments to primary care offices. The attachments were an attempt to reduce physicians' lack of utilisation of public health nurses, due to lack of awareness of their potential contribution, or distrust of their competence, or their lack of interest in referring to an 'anonymous' public health division (Bass, Warren and Mumby, 1980). Two studies described process and outcomes of the attachment arrangements. These roles evolved over the 1990s to allow more public health specialist functions within a primary care setting.</li> </ul>
<p>Examples of working together in another setting using voluntary collaborative initiatives</p> <ul style="list-style-type: none"> <li>• 'Heart health coalitions' provide an example of public health and primary care working together in a group of consumers, community and health care professionals to accomplish a health-related goal that span multiple organisations (Hill et al, 2001). Often the coalition resulted in partnerships through media awareness and community events, but also set in other functions such as education of health professionals and research subcommittees (Chambers, 2001).</li> </ul>
<p>Other diverse examples of using voluntary collaborative initiatives described by the authors include:</p> <ul style="list-style-type: none"> <li>• Public health nurse from Toronto Public Health works with hospital employed nurse practitioner, nurse clinician and physician at the TB clinic in Toronto Western Hospital half day/week; in addition the public health nurse follows up clients in their own home.</li> <li>• A Public Health Nurse was provided by Toronto Public Health; lactation consultant was provided by the hospital to support a breastfeeding clinic in community and nurse practitioner and physician from community health clinic provided back-up. This intervention was stopped due to limited resources.</li> <li>• Public Health Nurse attached to Red Door Shelter in Toronto; works with South Riverdale Community Health Centre staff (nurse practitioner and medical doctors). The public health nurse provides mental health and well-being health promotion to relevant clientele.</li> <li>• Halton public health employs a nurse practitioner who works with a community physician in a smoking cessation clinic.</li> <li>• Some of the prenatal-postnatal nurse practitioners demonstration projects pay community physicians outside of the health units for their collaborative support.</li> </ul>

**Figure 10. Public health and primary care collaborations identified by Ciliska et al. [24].**



## 9. Koelen and colleagues' [44] healthy alliances (HALL) framework

The Healthy ALLiances framework (the HALL framework) has been developed through a stepwise and iterative process, combining research on coordinated action in practice and insights from literature on collaboration processes in the area of health promotion and public health. Results were synthesised into theories and frameworks, which subsequently were tested in practice and so on.

The basis for the HALL framework was laid in the European Food and Shopping Research Programme, run between 1991 and 2000, in which eight European so-called 'healthy cities' participated to promote healthy nutrition at local level, according to the principles of health promotion, that is, making healthy choices easy choices through intersectoral collaboration and community participation. The intention was to develop alliances between health promotion professionals, public health workers, welfare specialists, community members, school representatives, supermarket owners, restaurant owners and researchers. Soon after the project started, it became clear that the successful building of such alliances, even though potential participants expressed their interest in the project, was not a foregone conclusion and needed considerable attention.

The authors started to study the functioning and progress of the collaboration and participation processes in each city at different points in time assessing alliance members' participation in needs assessment, organisation, leadership, management and resource mobilisation. In annual meetings between practitioners and researchers from each city, the pitfalls, processes and progress were discussed.

On the basis of these experiences, the authors compiled an overview of dilemmas and challenges influencing the building and sustainability of coordinated action. This overview formed the input for research on coordinated action in health promotion programmes conducted in the years between 2000 and 2010. The programmes cover issues such as healthy lifestyles and healthy ageing and were (and still are) conducted in Dutch community settings in larger cities and in rural areas as well as in workplace settings. Based on the case studies, and critically assessed against experiences described in the literature, two frameworks have been developed.

1. The first framework **describes factors relating to the organisation of alliances** and includes factors influencing achieving and sustaining coordinated action, the value of these factors, the challenges related to it and possible solutions to address the challenges;
2. The second framework describes **levels and variables of coordinated action**.

In the meantime, tools and instruments to facilitate and evaluate coordinated action were further developed and refined, augmented by review studies on collaboration processes and theories and methods derived from, for example, the organisational development literature and again applied in community settings.

The case studies between 2000 and 2010 involved a variety of actors. The composition of the alliances depended on the issue addressed and the context of the case studies. Moreover, all case studies took a participatory action research approach, where the data after each measurement were fed back into, and discussed in, the specific alliance, in order to:

1. **Discuss** the strengths and weaknesses of the alliances under study;
2. **Plan** the moves forward;
3. Further **develop** the framework and the measurement tools.

Conducting research on coordinated action in a variety of settings revealed that the context in which alliances function, as well as participants' personal characteristics, have a significant influence on how alliances develop and are sustained.

The process as a whole resulted in the **HALL framework** which identifies three clusters of factors that either hinder or facilitate the success of alliances:

1. **Institutional factors** which included **policy, planning horizons, funding;**
2. **Personal factors among members of the alliance** which involved **attitudes and beliefs, self-worth, social identity, personal relationships;**
3. **Factors relating to the organisation of the alliance** which were **flexible timeframe, shared mission, clear roles and responsibilities, building on capacities, communication structure, visibility, management.**

## 10. Shaw and colleagues[28] adaption of Fulop and colleagues[38] types of integration excluding functional

Shaw and colleagues [28] report has examined what is meant by ‘integrated care’, clarifying the underpinning concepts and identifying the features relevant to integration across care settings, in particular medical care. According to the authors the current focus on integrated care reflects a long-standing concern in the NHS that the organisation of care across three sectors of the health service (primary, secondary and tertiary). This can be thought of as ‘internal’ integration and is the main focus of this report. Furthermore, the organisational separation of health and adult social care services (with the exception of Northern Ireland) has been a further cause of service fragmentation for many users; representing a concern for ‘external’ integration. The report is a literature review which focusses mainly on the UK but also includes other European countries (Sweden, Norway) and the USA (one study). Primary, secondary and tertiary health care organisations are examined and the review specifically excludes social care and does not mention or include public health.

The authors describe five types of integration: systemic, normative, organisational, administrative and clinical and their definition of each of these categories is in Figure 11.

<b>Medical care collaborations identified by Shaw et al[28]</b>	
<b>1 Systemic</b> which include:	<ul style="list-style-type: none"> <li>• Coordinating and aligning policies, rules and regulatory frameworks (for example, policy levers);</li> <li>• Emphasising better coordinated care outside of hospitals;</li> <li>• Developing national incentive schemes (for example the Quality and Outcomes Framework) or financial incentives to promote downward substitution.</li> </ul>
<b>2 Normative:</b> that is, developing shared values, culture and vision across organisations, professional groups and individuals which include:	<ul style="list-style-type: none"> <li>• Developing common integration goals;</li> <li>• Identifying and addressing communication gaps between managers, service providers and service users</li> <li>• Building clinical relationships and trust through local events;</li> <li>• Involving service users and the wider community in planning and evaluating services.</li> </ul>
<b>3 Organisational:</b> that is, coordinating structures, governance systems and relationships across organisations such as,	<ul style="list-style-type: none"> <li>• Developing formal and informal contractual or cooperative arrangements such as pooled budgets or practice-based commissioning;</li> <li>• Developing umbrella organisational structures such as primary care federations or local clinical partnerships.</li> </ul>
<b>4 Administrative:</b> that is, aligning back-office functions, budgets and financial systems across integrating units such as,	<ul style="list-style-type: none"> <li>• Developing shared accountability mechanisms;</li> <li>• Creating pooled or joint funding processes;</li> <li>• Developing shared information systems.</li> </ul>
<b>5 Clinical:</b> that is coordinating information and services so that patient care is integrated into a single process for example,	<ul style="list-style-type: none"> <li>• Developing extended clinical roles;</li> <li>• Guidelines and inter-professional education;</li> <li>• Facilitating the role of patients in shared decision-making.</li> </ul>

**Figure 11. Medical care collaborations identified by Shaw et al [28].**

## 11. Ramsay and colleagues [50] application of six types of integration[38] to health care.

This study is about integration of funders, hospitals, primary care and social care and does not specifically include public health interventions but has some useful points on integration. In the opinion of the authors [50] vertical integration describes a situation where different components of a supply chain are brought together in a single organisation. In healthcare, according to the authors, there are **two types of vertical integration**:

1. Agencies involved at different stages of the pathway are part of a single organisation;
2. Where payer and provider agencies come together as a single organisation.

In the vertical integration process, there are **five types** or opportunities for integration which are similar to Fulop's typology and these occur within a system (Figure 12)

### Six types or opportunities for integration identified by Ramsay and colleagues[50]

1. **Organisational integration** (merger between two separate entities);
2. **Functional integration** (shared administrative services);
3. **Service integration** (two clinical services are integrated such as drug treatment and infectious disease treatment);
4. **Clinical integration** (patient care is integrated into a single care process using a care planning or case management tool);
5. **Normative integration** (shared commitment on co-ordination of work and collaborating when delivering services);
6. **Systemic integration** (same rules and policies throughout the organisation).

**Figure 12. Six types or opportunities for integration identified by Ramsay and colleagues [50].**

The authors state that the department of health in the UK has said that competition may need to be waived to allow certain types of integration.

### Summary question 2 (i – iv)

Integration has many dimensions such as focus, breadth, virtual or real, degree, type and level. The target population for integration projects can vary and include different populations: entire communities or enrolled specific populations irrespective of health status, vulnerable or at risk sub-groups and patients with complex illnesses. The breadth of integration is described as horizontal or vertical and these forms of integration may be real or virtual: real integration entails mergers between organisations, whereas virtual integration takes the form of alliances, partnerships and networks created by a number of organisations. The degree of integration describes a minimum of three forms of integration:

- Linkage: the least-change approach, entails providers working together on an ad-hoc basis within major system constraints;
- Co-ordination: a structured, inter-organisational response involving defined mechanisms to facilitate communication, information-sharing and collaboration while retaining separate eligibility criteria, service responsibilities and funding;
- Full integration: the most transformative combination, refers to a 'new' entity that consolidates responsibilities, resources and financing in a single organisation or system in order to deliver and pay for the entire continuum of care.

The number of levels for integration depends on the author. Some authors describe five levels of integration; funding, administrative, organisational, service delivery, and clinical. Others describe three levels of

integration: macro (regulation, policy and strategic planning), meso (organisational and professional) and micro levels (clinical). The **three levels** were originally described by **Shortell and colleagues** and a sociological approach (i.e. macro (functional), meso (organisational and professional), and micro (clinical)) was applied to these three levels by **Delnoij and colleagues**. These **three levels** were used by **Curry and Ham** in their review of integration for UK.

**Fulop and colleagues** (2005) identified **five types** of integration and then presented them in a systemic environment:

1. Organisational integration is where organisations are brought together through legal instruments or agreements such as mergers (forming a single entity), collectives (forming an administrative grouping), or networks (forming a virtual group);
2. Functional integration is where back-office and support functions are integrated;
3. Service integration is where different clinical services are integrated at an organisational level such as through multidisciplinary teams;
4. Clinical integration is where care by professionals and providers to patients is integrated into a single coherent process within and between professionals and their organisations, such as the use of one care plan, shared clinical guidelines and protocols, and devolved shared decision-making;
5. Normative integration is where the ethos of shared organisational and professional values enables trust and collaboration in delivering health care within and across organisations. Skilled leadership and consistent communication are important enablers of this process; and,
6. Systemic integration is where there is alignment of regulation, policies and incentives at the administrative and organisational level known as the integrated delivery system.

**Rosen and colleagues** adapted Fulop and colleagues first five types of integration into **six integrative processes** with the service user at the centre.

1. **Clinical integrative processes** aimed to achieve consistent clinical standards across different settings, for example across community clinics, hospitals and day centres. They were underpinned by guidelines in clinical settings, or shared working practices such as a shared single assessment in the health and social care context.
2. **Informational integrative processes** involves the use of electronic patient records; population registers to identify gaps in clinical and preventive care; clinical 'point-of-care' prompts to support adherence to guidelines and standardise care along clinical pathways and across organisational boundaries; patient access to their own medical record to support self-management of care, such as checking results, and for self-organisation, such as booking appointments; and secure messaging and shared access to selected clinical data between primary and specialist clinicians. This was a challenging aspect of integration in each site and was an area of significant variation between electronic medical records and data protection regulations restricted the scope for data sharing and required explicit rules about rights of access to confidential data.
3. **Organisational integrative processes** relate to the governance arrangements between participating organisations. They encompass: the relationships between organisations, such as partnership; structural integration through merger or contractual relationships; the arrangements in place to define and implement goals and objectives; and the assurance frameworks to ensure that agreed objectives are achieved.
4. **Financial integrative processes** relate to budgetary arrangements and payment systems in place across the organisations participating in integration.
5. **Administrative integrative processes** relate to administrative and functional links across participating organisations, such as human resource management and seconded staff. They are particularly useful for small groups of practising doctors who may otherwise lack the necessary scale to run these functions efficiently. Examples are: shared administrative functions, such as contract and claims management; central employment of shared staff; and joint education and training across professional groups.
6. Normative integrative processes relate to developing shared values and aligned professional standards across participating individuals, groups and organisations.

**San Martin-Rodriguez and colleagues** identified **three determinants** of successful collaboration through a review of ten studies completed between 1980 and 2003. The countries covered in the review are not stated

precisely but Canada, UK, USA and Mexico are mentioned. They conclude that successful collaboration in health care teams can be attributed to numerous elements, including processes at work in interpersonal relationships within the team (the interactional determinants), conditions within the organisation (the organisational determinants), and the organisation's environment (the systemic determinants).

- The systemic determinants are further classified under a social system, cultural system, professional system and educational system;
- The organisational determinants are further classified under the themes structure, philosophy, administrative support, resources and co-ordination mechanisms;
- The interactional determinants are sub-classified under the themes willingness to collaborate, trust, communication and mutual respect.

In 1997 **Lasker and colleagues** used a grounded theory approach to explore the real life experience of collaboration. This work took a number of years and 414 examples of collaboration were collected throughout the USA. These examples were coded, categorised and six themes for collaboration emerged, now known as the **six synergies**. In addition, to the synergies, three other dimensions that enhanced collaboration were identified and these were: structural foundations (the enablers of the collaborations), geography (where the collaboration takes place) and partners (the types of professionals and organisations involved in the collaboration). The six synergies are as follows:

**Synergy 1:** Improving health care by coordinating medical care with individual level support services;

**Synergy 2:** Improving access to care by establishing frameworks to provide care for the un- or underinsured;

**Synergy 3:** Improving the quality and cost-effectiveness of care by applying a population perspective to medical practice;

**Synergy 4:** Using clinical practice to identify and address community health problems;

**Synergy 5:** Strengthening health promotion and health protection by mobilising community campaigns;

**Synergy 6:** Shaping the future direction of the health system by collaborating around health system policy, health professions training, and health-related research and information.

The six structural foundations identified were coalitions, contractual agreements, administrative or management systems, advisory bodies, intraorganisational platforms and informal arrangements.

**Martin-Misener and Valaitis** categorised 80 public health and primary medical care collaborations initiated between 1988 and 2011 in America, Australia, United Kingdom, Canada or New Zealand using an **adapted version of Lasker's six synergies and their subcategories**. The adaptations involve rewording the text describing the synergies sub-categories, addition of an 'other' category, and replacement of Lasker's six dimensions with San Martin Rodriguez and colleagues systemic, organisational and interactional levels or determinants. Martin-Misener and Valaitis report that Synergy 3 focusing on improving the quality and cost effectiveness of care by applying a population perspective to medical practice was the most common synergy reported (22.5%). Synergy 4 using clinical practice to identify and address community health problems was the next largest group (17.5%) followed by Synergy 1 improving health care by coordinating services for individuals (15%) and Synergy 6 shaping the future direction of the health system by collaborating around policy, training and research (15%). The authors also described an 'other' category that is represented by collaborations that focused on integration and/or collaborations aimed at quality improvement (8.8%).

**Marriot and Mable** (2002) outlined a different approach to integration:

- Rostered (enrolled) 'full integration' organisation;
- Geographic regional organisation;
- Integrated delivery system model;
- Focusses on providers;
- Primary health care reform incorporated within or contracted for by the larger integrated models; and,
- Voluntary collaborative initiatives of otherwise independent entities.

Marriot and Mable's approach reflects varying levels of integrative capacity. Each of the models and approaches has a predominant point of emphasis. These distinguish and differentiate, in terms of shaping mission, orientation and capacity and each holds different implications for government policy. **Ciliska and colleagues** use one of Marriott and Mable's (2002) five approaches, '**the voluntary collaborative initiatives between two independent entities**', to classify collaborations between public health, primary medical care and other social care initiatives in Canada. For their results they combine key examples from the Canadian literature and key informants, organised into the categories of 1) primarily primary care functions within public health settings, 2) primarily public health functions in primary care settings, and 3) representatives from both organizations working together in a different setting. In addition, they present a fourth category 'other literature' where they mention Lasker's work in the USA.

**Koelen and colleagues (2012)** created the **Healthy ALLiances framework** (the HALL framework) through a stepwise and iterative process, combining research on coordinated action in practice and insights from literature on collaboration processes in the area of health promotion and public health. Results were synthesised into theories and frameworks, which subsequently were tested in practice and so on.

Based on the case studies, and critically assessed against experiences described in the literature, two frameworks have been developed.

1. The first framework describes factors relating to the organisation of alliances and includes factors influencing achieving and sustaining coordinated action, the value of these factors, the challenges related to it and possible solutions to address the challenges;
2. The second framework describes levels and variables of coordinated action.

The case studies between 2000 and 2010 involved a variety of actors. The composition of the alliances depended on the issue addressed and the context of the case studies. Moreover, all case studies took a participatory action research approach, where the data after each measurement were fed back into, and discussed in, the specific alliance, in order to:

1. Discuss the strengths and weaknesses of the alliances under study;
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Conducting research on coordinated action in a variety of settings revealed that the context in which alliances function, as well as participants' personal characteristics, have a significant influence on how alliances develop and are sustained. The process as a whole resulted in the **HALL framework** which identifies three clusters of factors that either hinder or facilitate the success of alliances:

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2. Personal factors among members of the alliance which involved attitudes and beliefs, self-worth, social identity, personal relationships;
3. Factors relating to the organisation of the alliance which were flexible timeframe, shared mission, clear roles and responsibilities, building on capacities, communication structure, visibility, management.

There are a few other mechanisms described in the literature and presented in question two but they are similar and for the most part adaptations of those already described in this summary.

**Question 2:** Describe the **mechanisms (synergies, typologies and/or tools)** used to integrate health and well-being and general health services in other health care systems.

**2(v) Were the mechanisms effective in producing the desired outcome?**

From the literature used for this report only five of the ten reviews addressed the issue of effectiveness.

**Curry and Ham** [31] propose that there are serious difficulties associated with measuring the outcome and impact of efforts to achieve closer integration.

1. First, the aims of integration may be manifold, so the criteria differ. For example, the parameters used to measure the achievements of clinical and service integration vary widely;
2. Second, even where intentions of the integration project are clear and consistent, the target populations, size of intervention group and context may be different and difficult to compare;
3. Third, some of the intended outcomes of integration are not easily measurable.

Goodwin and colleagues [51] concur with Curry and Ham that assessing the impact of integration remains a significant challenge. Tollen [52] adds that, even if there are promising signs that integration can have positive effects, the evidence base is 'good enough to be both intriguing and frustrating.' Curry and Ham,[31] in their consideration of the evidence, conclude that the performance of integrated systems rests on a core set of factors. They say that, although there have been no studies that have examined the relative importance of these factors.

Curry and Ham [31] examine outcomes by the three levels: macro, meso and micro.

Macro level: Curry and Ham report the finding of authors who have studied integrated systems in the United States and have explored the arguments for both real and virtual integration. Although the experience of the US Veterans Health Administration (which consists of 21 integrated service networks of hospitals and medical services) demonstrates what can be achieved through real integration. Robinson and Casalino (1995) evaluated the two alternative forms of organisational coordination: 'vertical integration,' (one form of real integration) based on unified ownership, and 'virtual integration,' based on contractual networks.[53] Excess capacity and the need for investment capital are major short-term determinants of these vertical versus virtual integration decisions in health care. In the longer term, the principal determinants are economies of scale, risk-bearing ability, transaction costs, and the capacity for innovation in methods of managing care. Other work reinforces this assessment and suggests that networks based on contractual integration may offer advantages over real or vertical integration.[34] The evidence also indicates that there are benefits in integrating large multispecialty medical groups who perform better than small medical groups and independent medical practitioners. However, attempts to promote physician–hospital integration have often not been successful outside the large integrated systems such as, Kaiser Permanente (virtually integrated health system based on keeping people healthy, early detection of illness, risk management and treatment provision at home or in clinics rather than hospitals for 8.7 million people in eight states of the USA) and Mayo Clinic (multi-specialist group practice with one physician co-ordinating all care for each individual patient and care provided is patient centred, emphasises early detection, and measures quality). One of the characteristics of these systems is that they have been working to achieve effective integration over many years and have therefore been able to develop a level of trust and collaboration often lacking in the moves to integrate medical groups and hospitals during the managed care era. This has implications in the emerging debate about the establishment of accountable care organisations, which would take accountability for clinical and fiscal inputs in the entire continuum of care for a given population. It is important to add that the



emphasis on choice and competition in the United States means that integrated systems function in a market environment. Curry and Ham[31] state that some analysts argue that competition is a key factor in stimulating these systems to achieve high levels of performance, although this remains an issue for debate. What is clear is that integrated systems in the United States are the exception rather than the rule. Some observers conclude from this that integrated systems have 'failed the market test' and will always struggle to survive in a highly competitive environment that rewards organisations able to respond quickly to changing market conditions. The consequence of this argument is that integrated systems may be more likely to succeed in non-competitive environments such as those in countries with publicly funded and (historically) planned health care services, for example, the United Kingdom, New Zealand and Sweden. On the other hand, integrated systems in those countries that function as geographical monopolies may lack the incentives that stimulate Kaiser Permanente, Geisinger Health System (integrated provider of care including commissioning and service) and Mayo Clinic to achieve outstanding results for selected insured populations. Also important are leadership, culture and incentive alignment, which underlines the complexity of replicating the levels of performance demonstrated in high-performing integrated systems. These other factors may explain variations in performance in countries that have adopted integrated systems and where differences can be observed in the performance of these systems. As an assessment of experience in the United States concluded[54], 'a strong argument can be made for piloting and evaluation in advance of widespread implementation' with 'careful selection of participating practices and federations to avoid the problems in the United States and to ensure that a policy that has considerable potential is able to deliver in practice'.

#### Meso level:

Meso-level models take different forms and focus on various population groups. Integrated health and social care for older people has demonstrated the potential to decrease hospital use, achieve high levels of patient satisfaction, and improve quality of life and physical functioning. Programmes targeting different conditions are more heterogeneous than those focused on older people. A key complexity is the lack of a single definition of 'disease management' and the consequent variety in content of programmes. Initiatives targeting certain conditions (such as depression, diabetes and heart failure) have achieved positive results, although the impact on clinical outcomes and mortality is uncertain. The cost-effectiveness of disease management has not been extensively studied or demonstrated. Clinical networks and chains of care have had a modest impact, with results varying according to how they were set up and led.

#### Micro level:

The examples described at this level were those used to integrate medical and social care.

#### Overall

Although three levels of integration, macro (systemic), meso (organisational) and micro (interactional), have been identified in the literature, in practice they are often used in combination with each other which is in recognition that changes at the macro level only have limited effect on integrated care for service users and fail to address the weaknesses of fragmented care. For example, organisations such as Kaiser Permanente and the US Veterans Health Administration seek to leverage the benefits of organisational integration by focusing on population management and care co-ordination. Integration is unlikely to deliver on its promise of improving outcomes unless there is action on all levels. Curry and Ham note the findings of a systematic review of different strategies to co-ordinate care within primary health care and social care [55]. The review identified nine strategies and concluded that interventions using multiple strategies were more successful than those using single strategies. These strategies included:

Patient and provider level

1. Arrangements to **improve communication between service providers**, including case conferencing (56 studies);
2. Using systems to **support care coordination**, including care plans, shared decision support, patient-held or shared records, shared information or communication systems, and a register of patients (47 studies);
3. **Structured arrangements for coordinating service provision** between providers, including coordinated or joint consultations, shared assessments, and arrangements for priority access to another service (37 studies);
4. Providing **support for service providers**, including support/supervision for clinicians, training (joint or relating to collaboration), reminders, and arrangements for facilitating communication (33 studies);
5. **Structuring the relationships between service providers and patients**, including co-location, case management, multidisciplinary teams or assigning patients to a particular primary health care (PHC) provider (33 studies);
6. **Providing support for patients**, including education (joint or relating to sharing care), reminders, and assistance in accessing PHC (19 studies).

Organisational level

7. **Joint planning, funding and/or management** of a program or service (7 studies);
8. **Formal agreements** between organisations (3 studies).

System level

9. **Changes to funding arrangements** (1 study).

**Lasker** [41, 42] concluded, as a result of the examination of 414 cases of public health and medical care collaboration, that by combining their resources and skills in various ways, professionals and organisations in the two sectors are able to achieve benefits that none of them can accomplish alone. These benefits are different for different partners but address important problems that each partner faces. Often, professionals and organisations in public health and medical care become involved in collaborative activities to strengthen their capacity to carry out their respective missions. Such collaboration enhances the quality of medical care and patient satisfaction with such care in a number of ways:

- By providing clinicians with up-to-date information relevant to their practices;
- By overcoming logistical and financial barriers that some patients face in obtaining access to care;
- By providing organisations delivering care with methodological tools to support quality improvement;
- By improving the ability of medical practitioners to modify risk behaviours and to address underlying causes of illness and disability;
- By developing better quality assurance standards and performance measures;
- Collaborative strategies enable the two health sectors to meet pressures in several important ways:
  - by linking them up with partners who can support their activities;
  - by establishing organisational ties that decrease financial risk while enhancing negotiating leverage and efficiency;
  - by providing them with needed data and analytic tools;
  - by increasing their sources of revenue.

Collaboration also provides health departments and community-based organisations with valuable support in carrying out population-based strategies that are essential to improving the health status of the community at large, such as surveillance, health assessment, public education, the adoption of health-protecting laws and regulations, health promotion campaigns, and the assurance of medical care.

Collaboration furthers the teaching and research missions of academic institutions by providing additional sources of support for faculty salaries, meaningful training experiences for students and residents, and new opportunities for investigation and consultation.

Another benefit of collaboration is the enhancement of each health sector's stature and sphere of influence. For public health, interacting with the medical care sector and other partners in the community increases the extent to which medical professionals, the public, and policymakers understand and value of public health. This understanding can help build a stronger constituency to support public health funding and activities.

Working more closely with the medical care sector also facilitates the translation of public health knowledge into mainstream clinical practice, providing effective preventive care and treatment to a much broader population. For the medical sector, collaborative strategies make it possible for clinicians to have more far-reaching effects than they can by caring for patients on an individual basis. Working with the public health sector and other community partners gives clinicians the power to address health problems influenced by behaviours and lifestyle, such as HIV/AIDS, sexually transmitted diseases, cardiovascular disease, domestic violence, and substance abuse.

Collaboration also enables medical practitioners to apply what they learn in their encounters with individual patients to broader populations. Both sectors find their policy voice strengthened through collaboration, giving them more control over health problems, their working environment, and the future direction of the health system.

A final benefit of collaboration is its capacity to help professionals and organisations in both health sectors deal with economic and performance pressures. As the personal health care system becomes more competitive, the success of medical professionals and institutions is becoming increasingly dependent on their ability to form networks, to manage financial risk, and to achieve performance goals. For the public health sector, market forces and the devolution and downsizing of government are making it advantageous to work with and through the private medical sector to achieve many of the most important health objectives, and to protect and effectively leverage limited budgets.

**Martin-Misener and Valaitis** [25, 43] report that the benefits of successful collaboration are different for each partnership. A review of community oriented primary care in the UK found the outcomes of collaboration to include an enhanced understanding of primary care; increased community assessment, data collection and analysis skills; increased linkages with other agencies; improved support for multidisciplinary collaboration and team work. In addition to these outcomes, their review of the literature found collaboration between public health and primary care resulted in positive outcomes for health care systems, health professionals, service users and the whole population. These are described in detail in Figure 13.

**The positive health care system outcomes were:**

1. Improved population health and public health approaches;
2. Enhancement in funding and resources;
3. Improved health service delivery process;
4. Development of new program and other innovations.

**The positive health professional outcomes include:**

1. Improvements in partnerships;
2. Better team dynamics;
3. Development and educational improvements.

**When they examined the health benefits for individuals and populations published in the review articles, they found:**

1. Increased screening for smoking, lead poisoning, hypertension and colon cancer;
2. Early adoption of risk-reduction practices that later became integrated into standard practice elsewhere in the state;
3. Improved genetics counselling;
4. Reduced teen pregnancies;
5. Increased uptake of prenatal care;
6. Better birth outcomes;
7. Improvements in mothers' lifestyles: intervention group women were significantly more likely to use contraceptives, not smoke tobacco, have a safe and stimulating home environment for their children;
8. Increased vaccination rates;
9. Reduced child emotional and behavioural problems;
10. Improved body weights with specialist home visitor intervention;
11. Improved dental health;
12. Better infection control;
13. Improved surveillance and infectious disease data management;
14. Improved management of TB and reduced incidence of infection;
15. Better management of chronic conditions;
16. Increased patient retention;
17. Improved self-care;
18. Improved youth self-esteem;
19. Reduced hospital and emergency room/department use;
20. Reduced need for visits to medical doctors.

**Figure 13. Martin-Misener and Valaitis [25, 43] benefits of successful collaboration.**

**Koelen et al [44]**, having developed the healthy alliances framework and based on their case studies, report that partners in alliances bring in personal attributes and institutional characteristics that can form obstacles to successful alliances, but, when they are addressed in a flexible and positive way, obstacles can be turned in contributory factors, leading to many potential benefits, such as collaborative learning and innovation.

**Ramsay and colleagues** [50] categorise outcomes of horizontal integration under three scenarios: impact of integrating payment and provision; impact of integrating two or more providers; and impact of integration through networks (Figure 14).

**Scenario 1: Impact of integrating payment and provision**

- Evidence of improved partnerships;
- Some increases in capacity are reported, but not quantified;
- Increased focus on case management and use of IT systems;
- Mixed evidence on admissions and lengths of stay;
- Mixed evidence on costs, with little information available from the NHS domain and inconsistent information internationally.

**Scenario 2: Impact of integrating two or more providers**

- Some evidence of strengthened partnerships;
- Evidence of organisational integration being hampered by lack of co-ordination at national policy level;
- Some evidence of improved capacity;
- Evidence of improved focus on governance and adherence to guidelines;
- Little evidence of impact on health outcomes;
- Limited evidence of impact on cost.

**Scenario 3: Impact of integration through networks**

- Mixed evidence, some cases show improved communication across organisations while others show key personnel resistant to role changes;
- Weak evidence of improvement in care provision;
- Little evidence of improvements in health costs or outcomes.

**Figure 14. Ramsay and colleagues outcomes of horizontal integration under three scenarios[50].**

**Summary question 2 (v):**

Curry and Ham report that there are serious difficulties associated with measuring the outcome and impact of efforts to achieve closer integration. Goodwin and colleagues concur with Curry and Ham that assessing the impact of integration remains a significant challenge. Tollen adds that, even if there are promising signs that integration can have positive effects, the evidence base is 'good enough to be both intriguing and frustrating.'

Five of the key papers used for this report addressed the issue of the effectiveness of integration. Overall it was agreed that integration increased capacity such as funding and resources, but integration took time and required investment. Virtual integration was seen as equally beneficial as real integration but less expensive and large multi-specialist medical care combining hospital and primary care functions provided better care than small groups of medical practitioners. The successful vertical integration examples (Kaiser Permanente and Mayo Clinic) examined in the literature were viewed as successful or more successful than the successful real integration example (US Veterans Health Administration). Leadership, culture and incentive alignment were important factors present in high performing integration systems. There was no evidence to suggest that integration resulted in the improvement of clinical outcomes, mortality or cost effectiveness but disease management programmes have shown some success in achieving process and quality of life improvements as well as service user satisfaction. Interestingly, it was shown that public health and primary medical care integration provided a more coherent health promotion approach to addressing the determinants of health. In addition, population health care approaches provided in primary care increased the uptake of prevention services and promoted health and disease surveillance.

## 2 (vi) What are the barriers to and facilitators for successful implementation of the mechanism?

There is broad agreement in the literature regarding the facilitators and barriers to integration, however their presentation varies. Some authors list the facilitators and barriers under the levels; systemic, organisational and interactional[23, 43, 44] while some are presented under the headings, government policy and funding, professional and system integration, communication, and practice cultures. Yet others are presented under the headings provincial and local.[24] Others authors presented a generic list of barriers and facilitators.[10, 42, 56, 57] However, generally there is agreement on the factors that facilitate or impede integration. Some authors also present the initiators[9, 10, 25, 29, 36, 42, 57] that make collaboration feasible which in the interest of thoroughness are also included in this report.

**The initiators** that motivate partners from the two health sectors, as well as from the broader community, to continue to work within their own organisation while, at the same time, to link up with professionals or institutions in other sectors are:

- **Government mandated development of teams** [25, 29] and partnerships and various health reform initiatives necessitates and drives collaboration or integration;
- **Governance structure and skilled leadership** [36] representing a comprehensive membership from all stakeholder groups and organisational structures that promote coordination across settings and levels of care to benefit the population or service user;
- **Organisational culture and skilled leadership** [36, 57] demonstrating commitment and providing a vision of a strong and cohesive collaboration culture;
- **Information systems** [36] to collect, track and report inputs, activity, process (timeliness and user experience, adverse events), outcomes (quality of care), impact for each service user as well as the population. Consistent and enhance communication and information flow being provided across the continuum of care;
- Collaboration is required **where functions are shared or joint** [9, 10, 42, 57] such as in the area of health surveillance (case finding, disease registers and epidemic investigations), health promotion, and disease or injury prevention (alcohol, tobacco, diet, driving practices and physical activity);
- A range of **health issues** [25] motivate collaboration, the common ones being communicable disease control, vaccination, screening and chronic diseases. Other initiators include determinants of health focused initiatives, for example those reducing health disparities, dealing with migrant family needs and providing health care needs for remote populations;
- **Health service delivery**[10, 25, 42] issues can prompt the development of collaborations; the most common of these are financial pressures, improving quality of care to underserved populations and addressing the need for more situational analysis and evidence based practice, such as health needs assessments, determinants of illness, disease progression, and health care evaluations;
- **Emergency response** [9, 25] to global epidemics is another initiator for collaboration;
- **Academic partnerships** [25] are most commonly found between faculties of nursing and medicine and primary care and public health collaborations. Collaborations may be initiated by an academic partnership for the purposes of planning or evaluating service initiatives. Another reason for academic collaborations is the need to change and broaden medical and nursing education in response to changing health needs and professional roles. Related to this, education providing opportunities for medical and nursing trainees to practice in collaborative settings with underserved populations enhanced the likelihood of their caring for such patients throughout their career;
- Many of the collaborations between public health and primary care are driven by **values and beliefs** [25]; the most common of which is a belief in the value of collaboration between public health and primary care and the importance of teamwork for enabling effective coordinated care. Belief, by both parties, in the value of prevention and health promotion are also common motivators for collaboration;
- **Physician integration** [36] Physicians are the gateway to integrated healthcare delivery systems and pivotal in the creation and maintenance of the single-point-of-entry or universal electronic patient record.

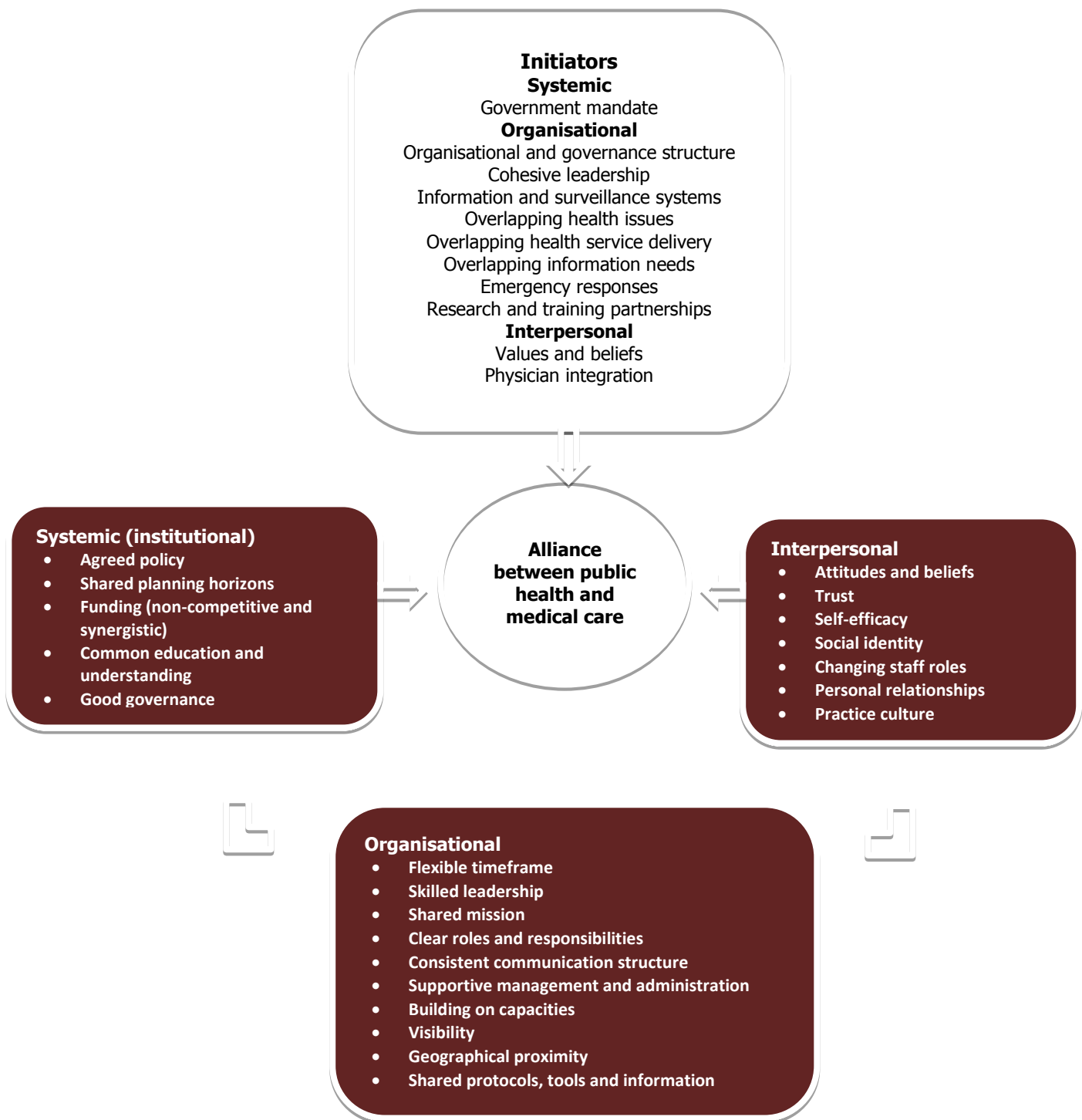


Figure 15. Initiators and facilitators for successful collaboration between public health and medical care (adapted from Koelen et al [44]).

Figure 15 presents the initiators and facilitators of integration or collaboration. For the current report the barriers and facilitators are presented together (as the converse or corollary of a facilitator can also be a barrier) and under the headings of systemic, organisational and interpersonal.

### Systemic factors

These include policy, planning horizons, funding, education and governance mechanisms, and they all have the potential to facilitate or hinder collaborative action. These are discussed in more detail below.

(i) Policy (joint vision), alliances, priority setting, shared national information systems [10, 24, 25, 29, 42-44, 56]

Clearly, the **policies** of different sectors have a different '**focus**'. Policies in the medical care sector often focus on the individual with curative or maintenance approach, whereas public health policies focus on the determinants of the population's health and interventions to prevent illness. In addition, medical (including primary) care policies are specialist and directive, whereas public health policies are interdisciplinary and participatory. Policies that are relevant for public health, however, are formulated, not only in health departments, but in various other government sectors that may not seem to have an explicit role in health care but their interventions deal with reducing the negative outcomes of the determinants of health (such as social affairs, housing, public utilities, educational, employment, agriculture, and transport). In practice, however, it appears that stakeholders in these different policy areas have difficulty working with one another, even when they reside in the same building. This applies both at the national and the local policy level. Often, it is necessary for an 'outsider' to bring them together. Humphries and Curry, in a review of facilitators of integration, report that more than 20 authors identified commitment from the top (26) joint strategy (24) and joint vision (24) as key facilitators of integration. In addition, the success of 14 integration projects (reviewed by Humphries and Curry) was due to objectives and interventions that focused on the service user and Monitor state that the service user is their central focus. In 13 of the studies, reviewed by Humphries and Curry, national policies inhibited integration. Martin-Misener and colleagues reported that national policy based on local needs and emphasising public health and primary care principles were facilitators of integration.

Another very important task of the policy makers is **priority setting**. For this task it is necessary to develop a co-ordination and priority setting group with national or provincial-level players. At this level, related policy and interest groups need to be brought together in a coordinated way to identify areas for collaboration, and then develop, prioritise and agree strategies. Policies **within each sector** have a strong focus on '**accountability**'. Each actor is held accountable in his or her own area. This relates to finance but also to the time (in terms of hours per week) that stakeholders are allowed to spend participating in **alliances**. For some stakeholders, the time spent participating in alliances is part of their job description, whereas for others it is not. Moreover, alliances are sometimes forged in policy areas that conflict the stakeholders' own area. For example, healthy canteens in schools (as a result of to a healthy eating policy) might have a health benefit but can lead to lower sales and profits used to fund extra educational activities.

Policy makers must mandate for **shared health information systems** for both communication and situation analysis. The former include strategies such as websites, list management tools, automatic mailing tools, and other means to coordinate sharing information for all partners. The development of information technology to analyse needs, inputs, process and outcomes is vital. Such information systems are used to detect disease, monitor service utilisation, service user experience, identify need, and evaluate interventions. In 14 projects, reviewed by Humphries and Curry, lack of or incomplete data and inadequate information technology was a



barrier to the success of the project. On the other, hand, Martin-Misener and colleagues report that the creation of shared information systems facilitated integration.

(ii) Planning horizons [24, 44]

A second important institutional factor that influences the functioning of alliances relates to planning horizons. If the horizons are too **short-term**, they will not support integration whereas appropriate **longer-term** horizons will facilitate it. Medical (including primary) care responds to current problems on request with (hopefully) immediate action. Patients go to see the doctor when they are ill and the doctor responds immediately to address their symptoms or refers them for specialist care. Public health on the other hand is forward-looking in that, it seeks to address the reason why the person became ill and seeks to determine how we can prevent recurrence of illness among those affected into the future. In addition public health assesses the risk of spreading the disease and examines how we can prevent others developing the illness. Also, public health seeks to determine the most effective interventions to deal with the illness. Another important difference between medical care and public health is the time needed for success to become evident. Recovery from an individual illness can be observed rather quickly. However, changes in overall population health status require time and prevention of disease through public health interventions are often not noticed by planners and the public as the problem no longer exists. The planning process was a barrier to integration in 12 by Koelen and colleagues.

(iii) Funding [24, 29, 43, 44, 56]

The third systemic factor relates to funding. The focus of funding agencies most often is on the illness paradigm, no matter whether this agency is a national scientific or a municipal funding agency, an insurance company etc. Traditionally, a lot of money is spent on medical technology and relatively little money on prevention and health promotion. In addition, in prevention and health promotion, most of the funding is spent on single-risk-factor programmes, such as reduction of alcohol consumption, cessation of smoking or healthy eating. Risk factors, however, almost never come alone. Underlying mechanisms of health issues such as obesity, nicotine addiction and alcohol addiction are complex: they are related to physical, psychosocial and cultural factors as well as to current employment, housing quality and the environment. Just consider the problem of obesity: it is not just the amount of food consumed but the type of food, the level of exercise, the level of alcohol consumption and the other lifestyle factors associated with eating. Those challenging problems are more difficult to deal with and are more problematic in demonstrating effectiveness, making them low priority for funding. Currently, governments are very much concerned with budget shortages. Prevention, which only shows results in the long run, is an easy target for budget reductions. Moreover, because of the limited financial resources, organisations within alliances sometimes start competing with one another for the same pool of grants. Hence, current public health financing structures and policy strategies induce competition for funding, and they force organisations to stick with theme-based aims, that is to say 'to defend their domain'. There is also a need for flexibility of funding and the creation of a distinct pool of funds, jointly through public health and primary care that would support innovative and collaborative project initiation, and evaluation at the local level. Humphries and Curry reported that additional funding was an essential facilitator of integration in 16 studies and 13 studies identified joint commissioning as a facilitator. Financial complexity (40) and financial pressures (34) were identified by Humphries and Curry as common barriers to integration. The commissioning process was a barrier to integration in 15 by Humphries and Curry. Martin-Misener and colleagues findings on funding concurred with the other authors.

(iv) Education [23-25, 43, 44]

Interdisciplinary education, at the undergraduate level, on the principles of population health and primary health care including the determinants of health, community development skills and information based decision-making would promote an understanding of roles across health care professionals. In addition, information on roles, scope of practice and interdependency among all health professionals would help all members of the team to appreciate each other. In addition, interdisciplinary continuing education would enhance this understanding of such roles. Martin-Misener and colleagues findings on education indicate that the current separate education cultures lead to a lack of understanding and appreciation of others professional's role. San Martin-Rodriguez identified both positive and negative determinants with respect to professional education.

(v) Governance [23, 25, 29, 43, 44]

Finally, the presence of a clear and robust corporate, financial and/or clinical governance structure and process is a key facilitator of integration. It must be clear who has ultimate corporate, financial and or clinical responsibility should anything go wrong. General practitioners in the UK were not supportive of clinical governance policy because they perceived that it threatened their professional autonomy. For nurses, the GP fund-holding structure in primary care in the UK was considered a threat to nursing and nurses' roles because nurses said it gave general practitioners decision-making power over nursing and they perceived that they would not be treated fairly. Territorial struggles, ownership conflicts and the distribution and redistribution of power and control as well as trust are common concerns at the systems and organisational levels. Martin-Misener and colleagues report that power and control issues are major barriers to integration.

**Personal and Interpersonal factors**

In addition to the institutional factors, partners also bring in their own personal characteristics and their individual opinion about working together. These include attitudes and beliefs, trust, self-efficacy, social identity, changing staff roles, personal relationships and practice culture. Frontline workforce (through joint appointments) was a facilitator of integration in 11 projects and staff in general were a barrier to integration in 11 projects reviewed by Humphries and Curry.[56]

(i) Attitudes and beliefs [23-25, 43, 44, 56, 57]

Attitudes and beliefs of partners can be significant barriers to, or facilitators of, successful collaborations. The attitude of professionals about working with other sectors is important. Some see it as something valuable, whereas others consider it an unpaid waste of time. Task and time perception play a role as well. For example, when an attempt is being made to organise a meeting, a general practitioner may reply: 'Okay, I can join the meeting at the proposed time because by then I will have finished my work', whereas a professional from the municipal health service may reply: 'Sorry, I cannot join the meeting because I am off duty then'. Partners must be willing to invest time and resources in the collaboration, but stereotypical views of one another's profession and a lack of belief in the value of one another's activities may also hamper the process. Most often partners from different sectors have little or no experience of working with professionals in other sectors. Building mutual value is important, as is tolerance, respect and trust. Staff commitment was an essential facilitator 13 integration projects by Humphries and Curry.

(ii) Self-efficacy [23, 44, 56]

It is known that general practitioners do not feel very confident about their health promoting capacities because of, for example, a lack of knowledge, training and education; lack of time; and a lack of perceived patient motivation. Therefore, they find it difficult to discuss, for example, overweight, especially since patients often come to see the doctor for other problems. Collaboration with professionals from other disciplines is for many a new way of working, which requires other competencies. Many public health professionals are not trained in working together and lack experience in participatory approaches or in managing stakeholder interaction and this can make them feel insecure about their role within the collaboration. The belief that one can make a difference in a team is an important determinant. A history of success was identified as a facilitator of integration in 11 projects while a history of failure was identified as a barrier in 14 projects reviewed by Koelen and colleagues and by Humphries and Curry.

(iii) Social identity [24, 44]

Partners in collaborations bring their own identity, but it is important that in working together, they develop a shared identity as well. It must be meaningful for the individual partner to be a member of the group, and the membership must contribute positively to his or her self-image. This means that one's own identity must align with the identity of the group. Individuals will tend to remain a member of a group as long as the group has some contribution to make to the positive aspects of their social identity. It has been shown that common aims and mutual willingness to invest time and effort in achieving those aims induce and strengthen such identity.

(iv) Changing staff roles [44]

Changing staff roles presented challenges. Where individual staff roles or professional identity was threatened, this may be a barrier to integration. If education and training specific to the changed service is provided, this will improve the chance of success.

(v) Personal relationships [25, 43, 56, 57]

The authors experience has shown that an overriding factor influencing the success of working in collaborations is the nature of the relationship. Learning to trust one another (which takes time), acceptance that others may have different visions, liking the others and having fun in meeting one another are vital aspects of success. On the contrary, a mutual dislike among colleagues makes collaborations cumbersome and unproductive. Humphries and Curry reported that 35 studies identified friendly relationship as a facilitator of success while poor relationships were identified as a barrier in 14 projects. Martin-Misener and colleagues agree with other authors and report that good personal relationships facilitate integration.

(vi) Practice culture [10, 25, 29, 42, 43, 56]

There has been a cultural divergence between medicine and public health and a number of issues need to be addressed in order to promote collaboration: overcome suspicions and scepticism to initiate a working relationship; being able to identify potential partners and have a clear idea of how partners can combine their resources and skills in a collaborative endeavour. For example, practice culture among staff from the different integrating organisations was a barrier to integration in 19 projects reviewed by Humphries and Curry.

## **Factors relating to the organisation[56]**

The policy and (inter)personal differences already discussed are brought into organisational collaboration by the different participants. These differences have to be dealt with in order for organisational collaboration to be successful. Precipitators and facilitators relating to organisation success are flexible time frame, shared mission, clear roles and responsibilities, building on capacities, communication structure, visibility, management, administration, geographical proximity, and shared protocols and tools. Organisational complexities were identified as barriers to integration in 30 studies reviewed by Humphries and Curry.

### **(i) Flexible time frame [25, 44, 50]**

In building collaborations, we need to be patient. It often takes time and it involves backward and forward processes to develop common language, trust and ways forward. To tackle a straightforward problem, it may take six months or even up to two years before a collaboration functions reasonably well. For more wicked problems or challenges, a shared vision on the problems and opportunities and identifying the right partners might take years. Most often, this time is not taken into account, either by funding agencies or by stakeholders in the collaboration. As a consequence, participants in the collaboration get disappointed. In building collaborations, one needs to be aware of this and build time into programme planning for this vital phase of building relationships.

### **(ii) Shared mission [24, 25, 43, 44, 56]**

Stakeholders enter an alliance with differences in missions and aims because of the institutional environment, and they enter with different perceptions about what to achieve and how to get it done. But, in order to be successful, it is important to recognise common ground, common aims and a common understanding of how to proceed. Even though all stakeholders may have been involved in developing a programme, for example in writing a proposal for funding, and even though all involved initially agree on the aims and objectives, many expectations and perceptions often remain implicit, in the minds of the participants. This may lead to serious conflicts as soon as plans are made for concrete actions. Conflicts are not necessarily problematic. Open discussions, in which implicit ideas are made explicit, can clear the air, after which the collaboration processes run smoothly. Resolved conflict can lead to a stronger relationship.

### **(iii) Clear roles and responsibilities [23-25, 43, 44]**

The professions involved bring different skills and expertise, and they cannot all be expected to play the same role. Hence, successful collaboration requires clear role definitions for participants, relating to the skills and expertise they bring. Here also, ideas about expected roles and domain protection can hinder collaboration. For example, a general practitioner may not be happy with another health professional giving medical advice or a health professional may not be happy with the lifestyles changes a general practitioner suggests to a patient. This can result in conflict. Martin-Misener and colleagues support the finding that clear roles and responsibilities facilitate integration.

### **(iv) Building on capacities [24, 44]**

In fact, it is exactly the variety of skills and expertise that gives added value to collaborations. The success of collaboration depends on differences among partners. Diversity of partners enables the group to achieve results that no single partner could achieve alone. Programmes become successful because partners contribute what they are good at. For example, a GP cannot be expected to provide patients with a physical

exercise programme; but referring patients to a physical exercise programme conducted by physiotherapists and sports trainers will increase participation rates in the programme. Hence, by building on one another's expertise, collaborations clearly have added value.

(v) Communication structure [24, 25, 43, 44]

Partners especially succeed in working together if they see the job as an enterprise undertaken to achieve something that is important to each, but which cannot be achieved alone. Moreover, partners have to agree on a set of common goals but also that they have to agree to disagree on all other things. One important condition for successful coordinated action is the creation of communication structures through which the partners can share ideas, experience and information. It is a good thing to establish protocols for internal communication, but informal communication is equally important. This requires an open-minded, actively learning and innovative organisation that is willing to go beyond routine. The possibility of meeting for coffee, having lunch together or just making an informal phone call is very productive. It is therefore necessary to actively facilitate both formal and informal communication processes. For example, Martin-Misener and colleagues report that effective communication and clear decision-making processes facilitate integration.

(vi) Visibility [44]

Visibility is important to keep the collaboration healthy. Visibility refers to visibility of what is done, visibility of results and visibility of the individual contributions. It functions as an incentive for involvement and sustainability. It increases, so to speak, the internal motivation to stay involved in the programme. Visibility can also help to catch the attention of politicians and funding agencies. To increase visibility, it is important to set realistic goals not only at the level of (long-term) health outcomes but especially short-term goals. Lifestyle objectives and objectives on processes (such as participation and collaboration) are equally important. Defining participation as an objective in the collaboration means that the results of participating are reported as a programme outcome. This is often forgotten but extremely important because such inclusion makes it easier to show successes.

(vii) Leadership and management [23, 25, 43, 44, 56]

The management of collaborations needs special attention. An effective collaboration requires sustained engaged leadership in 31 studies reviewed by Humphries and Curry. A command and control leadership style leads to delegation. What is needed is a style that is facilitating and empowering and that stimulates participation. It needs a neutral (or perceived as neutral) manager, which we call a system integrator. It must be someone who understands the different cultures involved, who can bridge these cultures and who can identify opportunities for mutual benefit. The manager has to maintain a good communication network and has to encourage the sharing of ideas, experience and information. People who work as system integrators have a certain type of mind: flexible, curious and able to see the big picture and to make links among a range of ideas. Self-confidence is a necessary trait, but good system integrators are not arrogant. They are also imaginative, intuitive, inquisitive and inspirational leaders. The programmes that we have studied differed in the level at which they are applied. Some are local, others national and some even crossed borders and are multinational. We learned that the programmes, whatever scope they have, are most successful if they are managed well at the level where the work is done. While good leadership is essential there also must be local joint planning initiatives and buy-in at work level. Changing or unstable leadership was identified (by Humphries and Curry) as a barrier to integration in 26 projects.

(viii) Administration [44]

Adequate administrative support is a facilitator of collaboration. Within and between organisations, it is important to create structures to support and increase team communication and autonomy, and minimise competition. Specific strategies to enable collaboration include: contractual agreements; parallel reporting and common governance structures; mentorship programs for new employees; clear lines of accountability; and job descriptions requiring collaboration. An important function of management is to ensure organisational structures and processes enable health professionals to function at their full scope of practice, adequate administrative support and to assist managers to develop knowledge and skills needed to support the work of collaborative teams. Smaller teams with diverse skills and backgrounds were more effective and enabled better team participation with more impact on patient care. Stable teams with a higher proportion of full-time staff and staff that had been working together longer work more effectively as a team. Facilitating the development of networks to create critical mass among professionals that were geographically dispersed, for example public health staff, is reported to be a useful recruitment and retention strategy.

(viii) Geographic proximity of partners [25, 43, 44, 56]

Co-location of public health and medical care organisations and team members was an important facilitator of collaboration. Geographic proximity of team members facilitated communication, information exchange, a sense of common purpose and high levels of trust between health care providers. Twenty studies in Humphries and Curry's review identified that shared geographical boundaries were necessary to ensure integration.

(ix) Shared protocols, tools and information [23-25, 29, 43, 44, 56]

The use of a standardised, shared system for collecting data and disseminating information enhanced access to quality clinical information and supported effective interdisciplinary care. Shared protocols were reported useful for multi-disciplinary, evidence-based practice and quality assurance; strategies and processes of care; and collecting data and disseminating information. Martin-Misener and colleagues concur that shared protocols, tools and information facilitate integration as does San Martin-Rodriguez. Central guidance was identified in 13 studies in Humphries and Curry's review.

## Summary question 2 (vi):

Nine of the key papers reviewed for this report identified **facilitators of and barriers to integration** and we found that there was agreement around the facilitators that were identified in this area. We organised the facilitators under three headings (systemic, organisational and interpersonal) and the facilitators are:

Systemic	Organisational	Interpersonal
<p>Agreed policy;  Shared planning horizons;  Good governance;  Non-competitive and synergistic funding;  Common and high-quality information infrastructure;  Common education and understanding among professionals;  Shared culture.</p>	<p>Flexible timeframe and enough time;  <b>Skilled leadership</b>;  Shared mission;  Clear roles and responsibilities;  Adequate resources;  <b>Consistent communication structure</b>;  Supportive management and administration;  Building on capacities;  Visibility;  Geographical proximity;  Shared electronic patient record system and surveillance data;  Shared protocols and tools and information.</p>	<p>Attitudes and beliefs;  <b>Trust and respect</b>;  Self-efficacy (confidence and skills);  Shared purpose;  Social identity;  Role clarity;  Changing staff roles;  Personal relationships;  Practice culture;  Effective communication;  Willingness to collaborate.</p>

\*Facilitators in **bold text** are the most important facilitators

Only the facilitators are described in the report, as the converse of the facilitators are the barriers. According to the literature, systemic and interpersonal facilitators need to be in place for organisational facilitators to be effective. The three most important facilitators identified by the literature are skilled leadership, constant effective communication and trust between the collaborators.

**Question 3: What potential future policy directions for integrating health and wellbeing services with general health services are identified in the jurisdictions included in the review?**

There is limited information in the literature reviewed on future policy directions for integrating health and wellbeing services.

**San Martin-Rodriguez and colleagues[23]** concluded that the results of their review could guide professionals, managers and decision-makers toward a better understanding of the key factors needed when embarking interprofessional collaboration initiatives. Based on this review, they concluded that collaboration is essentially an interpersonal process that requires the presence of a series of elements in the relationships between the professionals in a team. These include a willingness to collaborate, trust in each other, mutual respect and communication. Yet, even though the above conditions may be necessary, they are not sufficient, because in complex health care systems professionals cannot, on their own, create all the necessary conditions for success. Organisational determinants play a crucial role, especially in terms of human resource management capabilities and strong leadership. This applies to integration between all sectors.

**Suter et al [36]** arrived at ten key principles for successful health integration systems. The ten principles define the key areas for restructuring while at the same time allowing for organisational flexibility and adaptation to local context. These principles may be used by decision-makers to assist with focusing and guiding integration efforts, but much more needs to be learned about specific structures and mechanisms for success. It is important, to emphasise that the literature does not contain a one-size-fits-all model or process for successful integration, nor is there a firm empirical foundation for specific integration strategies and processes. According to the authors, consideration also needs to be given to the social, economic and political context that affects legal aspects, funding streams and broader integrating mechanisms, as they constitute significant determinants of the success of integrated service delivery models. These apply to integration between all sectors.

There are currently some national policies or policy working groups that include aspirations to integrate the healthcare provided in their country and these are presented in the remainder of this section.

**Australia and public health policy on integration with medical care**

The Australian Population Health Development Principal Committee comprises senior health development and health service officials from each jurisdiction.[58] It incorporates the previous National Health Priority Action Council, its Expert Advisory Subcommittees, National Public Health Partnership in particular the Chronic Disease and Injury Prevention Working Group and the National Obesity Taskforce. The Australian Population Health Development Principal Committee will coordinate national effort towards an integrated health development strategy that includes primary and secondary prevention, primary care, chronic disease and child health and wellbeing. The new advisory structure is aimed to make advice to Australian jurisdictions more effective and timely, especially in the integration of prevention across all aspects of chronic disease management, and in bringing a greater focus to health protection, especially pandemic readiness.

**Powell Davis and colleagues [59]** wrote that in order to fulfil its role of coordinating health care, primary health care needs to be well integrated, internally and with other health and related services. In Australia, primary health care services are divided between public and private sectors, are responsible to different levels of government and work under a variety of funding arrangements, with no overarching policy to provide a common frame of reference for their activities. Between 2000 and 2009, coordination of service provision has been improved by changes to the funding of private medical and allied health services for chronic conditions,



by the development in some states of voluntary networks of services and by local initiatives, although these have had little impact on coordination of planning. Integrated primary health care centres are being established nationally and in some states, but these are too recent for their impact to be assessed. Reforms being considered by the federal government include bringing primary health care under one level of government with a national primary health care policy, establishing regional organisations to coordinate health planning, trialling voluntary registration of patients with general practices and reforming funding systems. If adopted, these could greatly improve integration within primary health care. Powell Davis and colleagues' review considers integration in the context of medical care with wider primary care teams and social care.

### **Canada and public health policy on integration with medical care**

Health Canada's goal is for Canada to be among the countries with the healthiest people in the world.

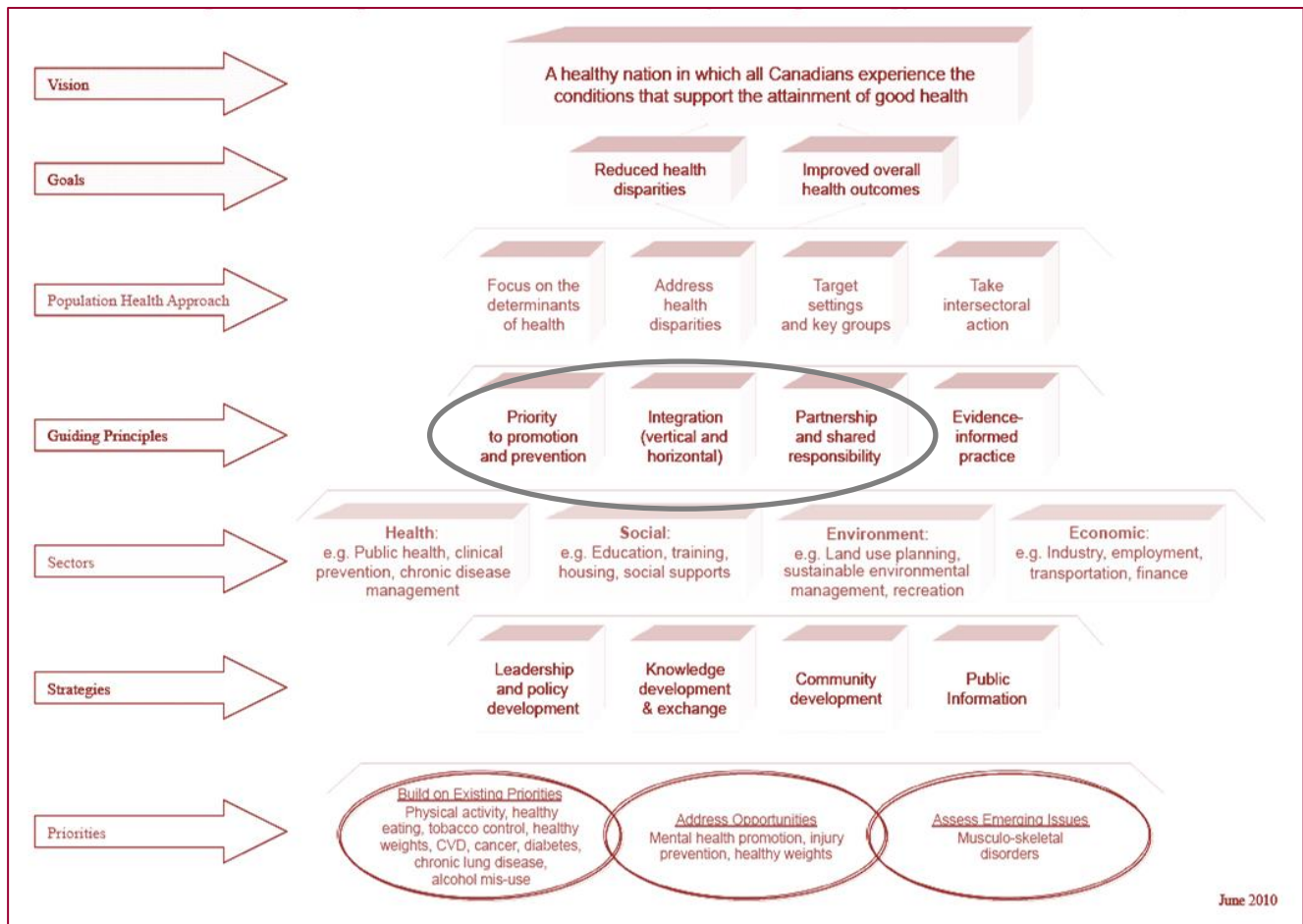
Health Canada believes that prevention and health promotion can hold health care costs down and improve quality of life in the long term. To this end, the Department Of Health in Canada is committed to meeting the challenges of tomorrow by supporting research and fostering partnerships with researchers across the country and the world. It also works collaboratively with the provinces and territories to test ways in which the Canadian health care system can be improved and ensure its sustainability for the future.

At a population level, healthy living refers to the practices of population groups that are consistent with supporting, improving, maintaining and/or enhancing health. As it applies to individuals, healthy living is the practice of health enhancing behaviours, or put simply, **living in healthy ways**. It implies the physical, mental and spiritual capacity to make healthy choices. The **Integrated Pan-Canadian Healthy Living Strategy**[60] (Figure 16) focuses on healthy eating, physical activity and their relationship to healthy weights. It includes targets to obtain a 20 per cent increase in the proportion of Canadians who are physically active, eat healthily and are at healthy body weights, by 2015.

The Pan-Canadian Healthy Living Strategy framework focuses on preventing chronic disease and promoting good health by **helping sectors align and coordinate work efforts** to address common risk factors such as physical inactivity and unhealthy eating.

Many sectors, including governments, non-governmental organisations, private sectors and Aboriginal organisations, are partners in the Pan-Canadian Healthy Living Strategy. Together, they target the entire population to improve overall health outcomes and to reduce disparities in health among Canadians.

Federal, Provincial and Territorial Ministers of Health first endorsed the Pan-Canadian Healthy Living Strategy in 2005, joining other countries around the world that have recognised the fundamental importance of promoting healthy living behaviours through coordinated and sustained action. In 2010, the Pan-Canadian Healthy Living Strategy framework[61] was strengthened, building on common risk factors and conditions, and pointing to new areas of opportunity, including preventing overweight and obesity, mental health promotion and injury prevention. Figure 16 presents a summary of the healthy living strategy framework in Canada. It supports health protection and promotion and identifies the necessity for **vertical and horizontal integration**.



**Figure 16. Strengthening integrated (public health and medical care) pan- Canadian healthy living strategy framework (June 2010)[61].**

### **Netherlands and public health policy on integration with medical care**

The Ministry of Health, Welfare and Sport (Dutch: Ministerie van Volksgezondheid, Welzijn en Sport; VWS) is responsible for three policy areas:

1. Public health and health care
2. Welfare and social-cultural work
3. Sports

Health is everyone's concern. The health of the Dutch population is good but there is always room for improvement. The document, '**Health close to the people**'[62], sets out the ambitions of the government's health policy for the coming four years. Their efforts to improve public health will centre on five key issues, or priorities: overweight and obesity, diabetes, depression, smoking, and excessive consumption of alcohol. There is a special emphasis on physical activity. One of our main priorities is to offer everyone the opportunity to take part in sport (or other forms of healthy exercise) close to home. The government will maintain these priorities, while also placing greater emphasis on exercise and physical activity. Exercise is good for both physical and mental health, and is closely linked to the other five priorities.

The government emphasises the personal responsibility and strengths of the individual which also applies equally to matters concerning personal health. Accordingly, primary responsibility for improving public health rests not with the government but with the people themselves. The private sector, community organisations, the education sector and healthcare providers have an important part to play. Where government involvement is necessary, this will in the first instance be the task of the local authorities.

In this national policy document, the government's approach is described on the basis of three main themes: confidence in health protection; care and sport in the neighbourhood; and personal lifestyle decisions.

### 1. Confidence in health protection

There are some risk factors which individuals are unable to influence themselves, or can do so only to a limited degree. Here, the public must be able to rely on the support of the government. Clear legislation and effective enforcement of that legislation to deal with population-based risk factors remain essential.

### 2. Care and sport in the neighbourhood

The health care sector can focus even more on promoting good health, alongside tackling poor health. Readily accessible health care facilities in the neighbourhood or online ('eHealth') can make a significant contribution in this regard, as can the timely identification of risks, effective interventions and innovative treatment methods. There should be **closer links between care and prevention**. The starting point must be the wishes and requirements of those who use healthcare services, rather than the interests of the systems and sectors which provide them. The parties concerned must therefore work to strengthen the physical, organisational and substantive connections between public health and the basic health and welfare services required by the Zorgverzekeringswet (Health Insurance Act; Zvw), the Algemene Wet Bijzondere Ziektekosten (Exceptional Medical Expenses Act; AWBZ) and the Wet maatschappelijke ondersteuning (Social Support Act; Wmo). Care and prevention services should in the first instance 'belong' to the people, and therefore have to be located as close as possible to the users. Facilities must therefore be close at hand. **Basic care and prevention services can be organised at the local level and can be made more accessible** (horizontal integration or collaboration). The chapter also considers these aspects in relation to facilities specifically for seniors, in keeping with the priorities stated in the Coalition Agreement. The government wishes to ensure that everyone has an opportunity to take part in sport, exercise and physical activity in his or her own neighbourhood, and to do so in safety. This calls for adequate and accessible facilities. In association with local authorities, the sports sector and various private sector parties, the government promotes the creation of such facilities.

### 3. Personal lifestyle decisions

With regard to lifestyle choices, the government avoids a prescriptive or proscriptive approach as much as possible. People are responsible for making their own choices. These choices are made in an environment in which **'the healthy choice is the easy choice.'** Several sectors have a part to play in this respect. Therefore, this policy document explicitly establishes a link between health policy and the relevant involved ministries such as Economic Affairs, Agriculture and Innovation, Infrastructure and Environment, Education, Culture and Science, and Social Affairs and Employment. The interrelationship between health and other policy areas applies equally to the local level. The government sees public-private partnership as a promising means of making healthy lifestyle choices both available and attractive. The availability of reliable, accessible and targeted information is essential. Generic mass media campaigns do not fit in. Young people are the future and will be given special attention. Alongside encouraging healthy lifestyle choices, the early identification of health risks and help in developing the resilience required to resist the temptations of everyday life, the government considers it appropriate to establish limits and to create a sound basis for a healthy lifestyle at an early age.

### United Kingdom and public health policy on integration with medical care

The UK Government has made it clear that better integration of care must be at the heart of the reformed health system. The **Nuffield Trust** and **The King's Fund** were asked by the UK Department of Health to support the development of a national strategy for the promotion of integrated care with the service user at the centre.[17] The findings have been submitted to the UK Department of Health and the NHS Future Forum and some of the key messages taken from **the background paper to the report are outlined below**. These three key messages were developed, after literature on integration and case studies of integration were examined.

- Set a clear, ambitious and measurable goal to improve the experience of patients and service users
- Offer guarantees to patients with complex needs
- Implementing change at scale and pace

In theory public health is included in the UK framework, but in practice the review of evidence has concentrated on medical care and social care and the three key messages relate to the integration of such care with the occasional by line on integrating public health and medical care.

In a briefing paper to the Nuffield Trust in the UK in 2010, **Ham and Smith[63]** summarised a number of key points that should be reflected on when future policy is being considered. They reached these conclusions following examination of five case studies of integration in the UK. While they are aimed specifically at the UK health system these points should contribute to the discussion on future policy wherever integration is considered.

- International experience demonstrates that integrating healthcare services can deliver more efficient, patient focused care;
- In the UK, health and social care organisations in a number of areas are at the forefront of this initiative on integration. However, several policy barriers need to be overcome if integrated care systems are to be established more widely;
- Policy-makers should explicitly recognise the need for competition in some areas of care and collaboration in others and should develop competition rules accordingly;
- There should be active encouragement of the use of incentives and financial flows 'beyond the tariff'; this will enable the development of capitated budgets and other means to support integrated care;
- General practitioner commissioning should be used to support new forms of care and should encourage the involvement of secondary care clinicians alongside primary care teams;
- There should be renewed efforts to encourage NHS organisations and local authorities to use the flexibilities available to them to work in a more integrated way, including the integration of commissioning resources;
- The activities of Monitor (health regulator) and the Care Quality Commission need to be aligned in support of integration, with a particular emphasis on the regulation of organisations as part of local systems of care and on the experience of patients across the whole care pathway;
- The importance of system leadership at a local level should be recognised in the light of the proposed abolition of primary care trusts and the development of general practitioner commissioners.
- Policy-makers should articulate the case for change to service delivery and organisation with the support of professional bodies and patient groups.

Once again these guiding points have more relevance to integrating medical and social care.

### USA and public health integration

Primary care and public health have critical roles in providing for the health and well-being of communities across the nation.[64] Although they each share a common goal, historically they have operated independently of each other. However, an opportunity has emerged through the 'Affordable Health Care Act' that could bring the two sectors together in ways that will yield substantial and lasting improvements in the health of individuals, communities, and populations. Because of this potential, the Centers for Disease Control and Prevention and the Health Resources and Services Administration asked the Institute of Medicine (IOM) to examine the integration of primary care and public health.

The Institute reported that the interactions between the two sectors are so varied that it is not possible to prescribe a specific model or template for how integration should look. Instead, the Institute identifies a set of core principles derived from successful integration efforts, including a common goal of improving population health, as well as involving the community in defining and addressing its needs. They say that the challenges for integrating primary care and public health are great, but so are the opportunities and rewards. The Institute of Medicine's report offers the most detailed portrait yet of the current landscape for integrating, along with principles that can serve as a roadmap to move the nation toward a more efficient health system. The Institute anticipates that moving along a path of integration will promote better health and wellbeing for all Americans.

### Summary question 3:

There is limited information in the literature examined on **future policy** for integrating medical care and public health services. The Australian Population Health Development Principal Committee will coordinate national efforts towards an integrated health development strategy that includes primary and secondary prevention, primary care, chronic disease and child health and wellbeing. The concentration is on integrating primary care services themselves.

The Pan-Canadian Healthy Living Strategy framework focuses on preventing chronic disease and promoting good health by helping sectors align and coordinate work efforts to address common risk factors such as physical inactivity and unhealthy eating. It supports health protection and promotion and identifies the necessity for vertical and horizontal integration.

The Netherlands's 'Health close to the people' strategy sets out the ambitions of the government's health policy for four years. The approach is based on three themes: confidence in health protection; care and sport in the neighbourhood (specifically mentions integrating health promotion into care and sport); and personal lifestyle decisions. There are some risk factors which individuals are unable to influence themselves, or can do so only to a limited degree. Here, the public must be able to rely on the support of the government. **Clear legislation and effective enforcement of that legislation to deal with population-based risk factors remain essential.** The health care sector can focus even more on promoting good health, alongside tackling poor health. Readily accessible health care facilities in the neighbourhood or online ('eHealth') can make a significant contribution in this regard, as can the timely identification of risks, effective interventions and innovative treatment methods. There should be **closer links between care and prevention.** With regard to lifestyle choices, the government avoids a prescriptive or proscriptive approach as much as possible. People are responsible for making their own choices. These choices are made in an environment in which **'the healthy choice is the easy choice.'** Several sectors have a part to play in this respect.

The UK Government want better integration of care to be at the heart of the reformed health system. The Nuffield Trust and The King's Fund were asked to support the development of a national strategy for the promotion of integrated care and they have published much work in the area of integration. However they

concentrate on **cure and care** and although public health is mentioned it was not included in the examination of the research.

Question 4: **What are the features of a successful system integrating health and wellbeing services with general health services?**

The literature has some examples of what successful integration looks like, however evidence that this is measured on a regular basis is lacking.

**Martin-Misener et al[25, 43]** state that a successful collaboration between public health and primary care was thought to have occurred when:

- There was a feeling of being part of the **team**;
- There was full co-location of the team;
- **Health related output(s)** were improved;
- **Access** to health services was improved;
- Health-related knowledge, attitudes, and/or behaviours were changed;
- **Capacity** and expertise was increased;
- New **collaborative initiatives** were started;
- Programs (old initiatives) were **sustained**.

**Ramsay et al[50]** report that the evidence base for indicators of success between public health and medical care is limited in the sense that there is a fair amount of evidence on the processes of integration but that there is much less evidence on the outcomes of integration. There is also little large scale evaluation and a tendency to evaluate what have been called 'boutique pilots' from which it is difficult to generalise the results. However the authors go on to describe features that are likely to lead to successfully integrated health systems and these are:

- Integration occurred as a result of a **common cause** and was initiated from the **bottom up** (evidence of success);
- Integration **by service providers for the care or benefit of patients** (rather than cost savings) has a higher chance of success;
- Services with a history of co-operative collaboration are more likely to be able to join forces into the future;
- Services who know each other prior to integration are likely to integrate successfully;
- Balance of power between medical care and public health is even and there is **mutual respect**;
- Integration process received **financial incentives or funding**;
- Pressure to show economies of scale and cost advantages are not the an expected outcome of integration;
- **Adequate time** is allowed as integration benefits take time to appear as structure and processes have to integrate before outcomes improve.

**Koelen et al[44]** in their paper say that a successfully integrated public health and primary care system should:

- Have **realistic time plans, shared mission** and **clear roles and responsibilities**.
- **Build on capacities** of the partners and have **good communication structures** which result in a positive influence on the attitudes towards working together; they facilitate the social identity of the alliance and they support and nurture good personal relationships.
- Have **visible and engaged leadership** who advocates improved self-efficacy and also positively addresses the institutional factors, **especially policy and funding support**.

**Suter et al** [36] state that careful review of exemplary cases in the literature suggests organisations (public health, medical care and social care) that have successfully integrated health systems have all focused on a combination of many, if not all, of the ten guiding principles outlined below. Furthermore, they add that successfully integrated organisations have committed resources to the development of processes and strategies that support implementation of these guiding principles.

<b>I. Comprehensive services across the care continuum</b> <ul style="list-style-type: none"> <li>• Cooperation between health and social care organisations;</li> <li>• Access to care continuum with multiple points of access;</li> <li>• Emphasis on wellness, health promotion and primary care.</li> </ul>
<b>II. Patient or population focus</b> <ul style="list-style-type: none"> <li>• Patient-centred philosophy focusing on patients' needs;</li> <li>• Patient engagement and participation;</li> <li>• Population-based needs assessment focusing on defined population.</li> </ul>
<b>III. Geographic coverage and rostering</b> <ul style="list-style-type: none"> <li>• Maximise patient accessibility and minimise duplication of services;</li> <li>• Roster: responsibility for identified population and recognising the right of patient to choose and exit .</li> </ul>
<b>IV. Standardized care delivery through interprofessional teams</b> <ul style="list-style-type: none"> <li>• Interprofessional teams across the continuum of care;</li> <li>• Provider-developed evidence-based care guidelines and protocols to enforce one standard of care regardless of where patients are treated or who is treating them.</li> </ul>
<b>V. Performance management</b> <ul style="list-style-type: none"> <li>• Demonstrates commitment to quality of services, evaluation and continuous care improvement;</li> <li>• Clinical diagnosis, treatment and care interventions linked to evidence-based outcomes.</li> </ul>
<b>VI. Comprehensive Information systems</b> <ul style="list-style-type: none"> <li>• State of the art information systems to collect, track and report activities;</li> <li>• Efficient information systems that enhance communication and information flow across the continuum of care.</li> </ul>
<b>VII. Organisational culture and leadership value collaboration</b> <ul style="list-style-type: none"> <li>• Organisational support with demonstration of commitment;</li> <li>• Leaders with vision who are able to instil a strong, cohesive culture.</li> </ul>
<b>VIII. Physician integration</b> <ul style="list-style-type: none"> <li>• Recognised that physicians are the gateway to integrated healthcare delivery systems;</li> <li>• Are the single-point-of-entry and using a universal electronic patient record;</li> <li>• Engaged in leading role through participation on Board and to promote buy-in.</li> </ul>
<b>IX. Adequate governance structure</b> <ul style="list-style-type: none"> <li>• Strong, focused, diverse governance representing comprehensive membership from all stakeholder groups;</li> <li>• Organisational structure that promotes coordination across settings and levels of care.</li> </ul>
<b>X. Financial management</b> <ul style="list-style-type: none"> <li>• Alignment of service funding ensuring equitable funding distribution for different services or levels of services;</li> <li>• Funding mechanisms promotes interprofessional teamwork and health promotion ;</li> <li>• Sufficient funding ensuring adequate resources for sustainable change.</li> </ul>

Suter and colleagues conclude that processes and strategies must be implemented to align with and support these guiding principles and integration structures (such as co-location of services, information systems); otherwise, the desired outcomes may not be achieved. It is clear that multiple processes are necessary to ensure successful integration of healthcare systems and that any holistic response to health needs will have to link to and be co-ordinated with the responses of other agencies if it is to be successful.



Humphries and Curry [56] reports that successful integration of health and social care offers three potential benefits:

- **Better outcomes** for people, for example, living independently at home with maximum choice and control
- More **efficient use of existing resources** by avoiding duplication and ensuring people receive the right care, in the right place, at the right time
- **Improved access** to, experience of, and **satisfaction with**, health and social care services.

The King's fund and Nuffield Trust [17] report that the core components of successful integration are:

- Has a **regulatory framework** that encourages integration and integrated care
- Has a **financial framework** that encourages integrated care
- Provides **support to innovative approaches** to commissioning integrated services
- Applies **national outcome measures** that encourage integrated service provision
- Invests in **continuous quality improvement** including publishing the use of outcome data for peer review and public scrutiny
- **Defined populations** that enable health care teams to develop a relationship over time with a 'registered' population or local community, and so to target individuals who would most benefit from more co-ordinated approach to the management of their care;
- **Aligned financial incentives** that: support providers to work collaboratively by avoiding any perverse effects of activity-based payments; promote joint responsibility for the prudent management of financial resources; and encourage the management of ill-health in primary care settings that help prevent admissions and length of stay in hospitals and nursing homes;
- **Shared accountability** for performance through the use of data to improve quality and account to stakeholders through public reporting
- **Information technology** that supports the delivery of integrated care, especially via the electronic medical record and the use of clinical decision support systems, and through the ability to identify and target 'at risk' patients
- **The use of guidelines** to promote best practice, support care co-ordination across care pathways, and reduce unwarranted variations or gaps in care
- A **physician-management partnership** that links the clinical skills of health care professionals with the organisational skills of executives, sometimes bringing together the skills of purchasers and providers 'under one roof'
- **Effective leadership** at all levels with a focus on continuous quality improvement
- A collaborative culture that emphasises team working and the delivery of highly co-ordinated and patient-centred care
- **Multispecialty groups of health and social care professionals** in which, for example, generalists work alongside specialists to deliver integrated care
- **Patient and carer engagement** in taking decisions about their own care and support in enabling them to self-care – 'no decision about me without me'

Monitor [29], the UK regulator, says that integrated care **improves the quality and cost-effectiveness** of care for people and populations by ensuring that services are well co-ordinated around their needs. Integrated care is by definition both '**patient-centred**' and '**population-oriented**';

**Powell Davies et al [55]** (2008) reported that the findings of their systematic review of different strategies to co-ordinate care within primary health care and among primary health care, health services and health-related services, identified nine types of strategy and concluded that interventions using multiple strategies were more successful than those using single strategies.

#### Patient and provider level

- Arrangements to **improve communication between service providers**, including case conferencing (56 studies);
- Using systems to **support care coordination**, including care plans, shared decision support, patient-held or shared records, shared information or communication systems, and a register of patients (47 studies);
- **Structured arrangements for coordinating service provision** between providers, including coordinated or joint consultations, shared assessments, and arrangements for priority access to another service (37 studies);
- Providing **support for service providers**, including support/supervision for clinicians, training (joint or relating to collaboration), reminders, and arrangements for facilitating communication (33 studies);
- **Structuring the relationships between service providers and patients**, including co-location, case management, multidisciplinary teams or assigning patients to a particular primary health care (PHC) provider (33 studies);
- **Providing support for patients**, including education (joint or relating to sharing care), reminders, and assistance in accessing PHC (19 studies).

#### Organisational level

- **Joint planning, funding and/or management** of a program or service (7 studies);
- **Formal agreements** between organisations (3 studies).

#### System level

- **Changes to funding arrangements** (1 study).

### Summary question 4:

The **features of successful integration** were extracted from eight studies or reviews and mirror the facilitators of integration. This is because successfully integrated systems have used the facilitators appropriately. The features of successful integration focus on two main themes, (1) management and people skills, and (2) the benefits that can be accrued from integrated services.

The features of successful integration that focus on management and people skills are:

- Presence of a regulatory framework encouraging integration and formal agreements [17, 25, 43, 44, 59]
- Integration as a result of a common agenda and joint planning[44, 50, 59]
- Defined population who have a longstanding relationship with the services[17, 36]
- People centred philosophy focused on population needs[25, 29, 36, 50]
- Integration for the benefit of the population and not a cost saving measure[50]
- Evidence of a visible engaged and skilled leadership that values collaboration and shares accountability[17, 36, 44]
- There was full co-location of the team[25, 59]
- Adequate administrative support[59]
- Evidence of strong governance with membership from all stakeholders[36]
- Integration process was adequately funded and funding was aligned or pooled[17, 36, 44, 50, 59]
- Integration had an adequate time period to allow the process to take place[25, 44, 50]
- Services with a history of collaboration and equal balance of power were more likely to be successful[50]
- A feeling of being part of the team[25, 36, 44]
- Clear roles and responsibilities for each member of the team and shared accountability[17, 44]
- Evidence of effective communication structures and common cultural identity[17, 36, 44, 59]

The benefits that can be accrued from successful integration are:

- Access to health services is improved[25, 36, 56]
- Emphasis on wellness, health promotion and primary care is promoted[36]
- Health-related output(s) are improved[25, 29, 56]
- Capacity and expertise is increased[25, 44]
- New collaborative initiatives started and existing initiatives are sustained[17, 25]
- Shared protocols and tools are used[36, 59]
- Comprehensive information systems to collect, track and report activities and ensure quality improvement are present[17, 36]
- Outcome measures for integration of public health with medical care are decided and integration evaluated[17, 36]

Question 5: **How is success measured in a system integrating health and wellbeing with general health services?**

Measuring health system integration involves monitoring and evaluating to determine (1) whether the process of integration was implemented as intended and that integrated care has been achieved, (2) the impact of integration on various components of the health system including: patient, provider, organisation, funding and policy-maker, that is, how well the integrated system has performed. Overall, the literature revealed a limited number of clearly and fully described measurement tools assessing the implementation of integration. Actual empirical research on outcomes and impact of integrated health systems is scarce.

Goodwin and Smith[17] reported that:

- The structures and processes, or specific aspects of chronic disease management are described (Shortell 2009);
- There is evidence that integrated care programmes have a positive effect on quality (Ouwens et al 2005);
- There is evidence of high performance by US integrated delivery systems (Asch et al 2004; Feachem et al 2002);
- There is some emerging UK and international evidence about outcomes (Ham and Curry 2010; Rosen et al 2011);

Ramsay et al[50]reported that the following information was needed:

- Impact on patient experience, including the development of 'markers' for improved processes of care
- Impact on use of services, especially inpatient beds
- Impact on costs, and differentially on different parts of the system
- Impact on outcomes, with markers developed

In 1997 Boyce and colleagues[65] wrote about indicators of integrated health systems and stated that 'National quality and outcome indicators should increasingly focus on integrated health service delivery rather than the performance of individual sectors such as acute care. Most of the major health concerns of Australians relate to chronic illnesses, where the performance of the integrated system of care is far more important than the performance of its isolated components'. Boyce and colleagues[65] go on to say that the 'analyses of performance must judge whether appropriate care has been delivered not where that care was delivered'. At that point they proposed that any move to integrated performance monitoring would require both the adoption of a unique identifier, which respected the privacy and confidentiality needs of patients, and the cooperation of the myriad of agencies, both at government and regulatory levels. Such a move towards a more holistic performance appraisal may seem impractical but the common goal of improving the value of healthcare, by raising the quality of care and lowering or maintaining costs, will not be realised until such a global perspective on health services performance is adopted.

Even now, it would seem that there is still little evidence on clearly defined indicators of successful integration in healthcare and their associated means of measurement described in the literature. However a review by Armitage et al[16] in 2009 found evidence for three measurement tools which could be used to assess integration.

According to the authors the **balanced scorecard** is appropriate for evaluating both the implementation of integration and the impact of integration. It was originally developed by Kaplan and Norton[66] in response to organisational performance measurements that were based on financial performance alone and adapted by by Devers.[67] The degree of integration implementation at baseline can be determined by a survey administered to organisation managers.[67-69] To determine the impact of integration, the organisation must: [67, 70]

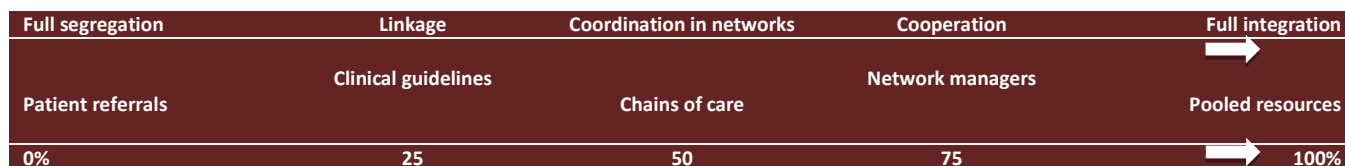
- Analyse the system-wide relationships with respect to whether integration is required or not;
- Choose the components appropriate for integration;
- Assess the current level of integration;
- Decide the future levels of integration by component and the time line to achieve the maximum desired level (per cent) of integration;
- For each integrated component, identify goals, actions or tasks and their associated indicators of achievement;
- Assign responsibility for achievement;
- Measure as required, for example on a weekly, monthly or quarterly basis;
- Review achievement each year and learn from successes and failures;
- Set new baselines at the beginning of the next year until the desired targets (outcomes) are reached.

The balanced scorecard is used to track progress in completing actions or tasks required and evidence of achievement for goals.[67]

The second tool identified by Armitage et al[16] was the **clinical microsystem assessment tool**, which was developed through the systematic analysis of twenty high performing clinical microsystems in North America.[71] Eight characteristics, shared across the 20 microsystems, were consistently related to high success rates with respect to high quality and cost effective health services. These characteristics were used to create a self-assessment tool which allows an organisation to compare its characteristics to those considered key to successful integration. The survey questionnaire was tested for content and face validity.[72] The small number of items (10) and free access to the survey questionnaire make this an easy and quick tool for evaluation. The Calgary Health Region has used this tool to measure integration of a new community health centre.[73] The eight characteristics of effective clinical microsystems were: [71]

- Integration of information;
- Measurement to determine progress and effect;
- Interdependence of the care and cure team;
- Supportiveness of the larger system (including policy makers, service planners, organisations);
- Constancy of purpose;
- Connection to the population and public;
- Investment in improvement;
- Alignment of role and training.

The third tool of interest was the **scale of functional integration**[74] which can be used to analyse intraorganisational, inter-organisational, horizontal, and vertical integration. The scale was tested in a Swedish Local Health Care Network. The authors were able to establish the tool's validity and reliability. The scale is comprised of a continuum from full segregation to full integration within several categories in-between such as linkage and co-operation. Different professional groups rank their perception of their unit's integration with other units. Within the categories of integration there are activities that are expected to take place such as shared clinical guidelines under the linkage category. These rankings are then compared with the optimum rank as determined by each unit.



**Figure 17. Ahgren and Axeleson's scale of functional integration.[74]**

Armitage et al[16] discovered that a number of indicators were proposed to measure the extent to which an integrated health system has been achieved. Some authors in their review focused on indicators for functional, physician-system and clinical integration.[67, 70, 75] Gilies et al[70] propose an additional set of dimensions to the three types of integration to evaluate the individual dimensions. These are:

Functional [70]	Physician-system[39]	Clinical[39]
<ul style="list-style-type: none"> <li>Human resources;</li> <li>Support services;</li> <li>Culture;</li> <li>Strategic planning;</li> <li>Quality assurance;</li> <li>Marketing;</li> <li>Information systems;</li> <li>Financial management resource allocation;</li> <li>Financial management operational policies.</li> </ul>	<ul style="list-style-type: none"> <li>Economic involvement</li> <li>Physician benefits</li> <li>Shared contracts</li> <li>Administrative involvement</li> <li>Physician organisation</li> </ul>	<ul style="list-style-type: none"> <li>Clinical protocol development</li> <li>Medical records uniformity and accessibility</li> <li>Clinical outcomes data collection</li> <li>Clinical programming and planning efforts</li> <li>Shared clinical support services</li> <li>Shared clinical service lines</li> </ul>

Some of these dimensions would be useful for evaluating integration in the medicine/public health arena. Devers et al[67] developed measures and suggestions as a starting point for assessing key aspects of organised, vertically integrated, delivery systems. Again, certain indicators that could be used for public health/medicine integration are described. The indicators proposed by Lee and Wan[75] are only useful in relation to acute hospitals as they measure average charge per discharge per patient and patient deaths and complications as a consequence of the process of care. Other authors used network effectiveness in delivering services[76] and the level of integration amongst different organisations within the network[77] as indicators. Provan and Milward[76] examined network effectiveness at three levels: community level, network level and organisation or participant level. Browne[77] used their work to develop a tool for evaluating integration from one of their perspectives which was from the network member's perspective and devised a model for human services integration evaluation. These indicators are useful in any area including public health where networks are formed to deliver health services.

<b>Purpose</b>	<ul style="list-style-type: none"> <li>To identify the extent, scope and depth of integration; and to identify where there is depth, scope and extent for formal and informal integration</li> </ul>
<b>What is measured?</b>	<ul style="list-style-type: none"> <li>Network programme members point of view regarding actual depth and scope of integration</li> </ul>
<b>Results</b>	<ul style="list-style-type: none"> <li>All services views of the degree of communication with each individual agency</li> <li>Each single services view of the degree of communication with all other services</li> <li>An overall network score comprised of network services within a sector</li> <li>A measure of the number of sectors involved in the sector</li> </ul>
<b>What is missed?</b>	<ul style="list-style-type: none"> <li>What are the strengths and problems from the collective networks point of view?</li> </ul>

Leggat and Leatt [68] developed a framework for monitoring and evaluating the performance of an integrated health delivery system which has been used to provide a continuum of services to patients in the medical care area but is not orientated towards measuring public health and medical care integration.

The Center for the Advancement of Collaborative Strategies in Health [78] helps partnerships, funders, and policy makers realise the full potential of collaboration to solve complex problems related to health or any other area. Working closely with people and organisations involved in collaboration, the centre conducts research studies, policy analyses, and joint learning activities to identify and explore key challenges associated with collaborative problem solving. The work of Lasker[10, 41, 42] and Center for the Advancement of Collaborative Strategies in Health in examining collaborations in public health and the development of synergies has been described earlier in this report. The Center also developed a web-based partnership self-assessment tool. After making this tool available free-of-charge for four years, the Center found it necessary to bring it offline on Friday, June 30, 2006 because the software platform upon which the Tool was constructed had become obsolete. However the Partnership Self-Assessment Tool can still be used offline and the questionnaire and action-oriented report is available with instructions for using the Tool offline.

The programme of Integrated Care Pilots in the UK was a two-year Department of Health initiative that aimed to explore different ways of providing integrated care to help drive improvements in care and well-being. Organisations across England were invited to put forward approaches and interventions that reflected local needs and priorities, and 16 were chosen for participation which were evaluated at the end of the two-year period. In one pilot there was a public health element.[79] The piloted projects at Tameside and Glossop aimed to change behaviour in people with risk of cardiovascular disease (CVD), as well as reduce morbidity and mortality for people with established CVD, improve patient experience and reduce both emergency admissions and visits to outpatient clinics. This involved the implementation of two new services, one for primary CVD prevention and one for secondary CVD prevention. The Primary Prevention Service aimed to provide a seamless path for those patients who were identified by information on general practice systems as being at 20 per cent or greater risk of developing CVD. These patients were invited to book an appointment for an assessment at their general practice or their local pharmacy. They were then supported in developing a personal action plan, which might include smoking-cessation advice, and weight management or exercise programmes. The Secondary Prevention Service aimed to reduce mortality and morbidity, increase and improve self-care and optimise management for people with diagnosed CVD. This involved patient identification using general practice registers shared with other clinicians (to enable opportunistic assessment of patients). Patients were also supported through personal action plans, patient information sessions and medicine-use reviews. The focus of the pilot changed from pharmacies to general practice during the course of the pilot because of people's reluctance to attend these services at pharmacies. The evaluation used a combination of quantitative and qualitative methods. The data for evaluation came from six sources: staff interviews, living documents, patient/service-user questionnaires, staff questionnaires, hospital episode statistics, including data on outpatient and inpatient utilisation, and the results of local evaluations submitted

by sites. The evaluation did not report individual findings for individual projects such as the one at projects at Tameside and Glossop but reported an overview of findings for the fourteen projects. The key findings from the overall evaluation are in Appendix E.

Both Ramsay[50] and Shaw and colleagues[28] in articles on integration declare that there has been a tendency for evaluation of integrated care to focus on 'boutique pilots' which has made it difficult to generalise findings to other health and care settings. Shaw et al[28] indicate that the challenge for managers, clinicians and service users is to propose and support an evaluative component at the outset of any integrated care initiative. The aim, they say, should be to make a robust contribution to the emerging evidence base for integrated care, encouraging users, planners and decision-makers to become more directly involved in shaping evaluation, and appreciating where the big gains are to be made in developing better integrated care. Those evaluating integrated medical and social care must be clear about the comparator used within any study. Appropriate choice of comparator is vital in reaching a view on the effectiveness of integrated care. For instance, the association between the features of integrated systems and high-performance systems may not imply causation. Evaluators therefore need to ensure clarity about whether they are comparing integrated against fragmented care; or against less integrated care; or a new integrated model against a previous integrated model.

The optimum integration rank between two units is depending on the needs of both differentiation and integration. A concordance between the staff values and the integration objectives give opportunities to develop a well-functioning integration. But this is not sufficient, since integration effectiveness also requires that the integration activities are positively directed towards the patients and achieve results like improved health, good service accessibility etc.[74]

#### **Summary question 5:**

Many authors suggest that the process of integration requires monitoring and evaluation to determine whether the process was implemented as intended, and the impact of integration on the health system. The impact needs to be examined from a number of viewpoints including the patient, provider, organisation, funder and policy-maker. The main question to be answered is '**how has the integrated system performed?**' Analysts propose indicators to measure the extent to which an integrated health system has been achieved but they are limited in number and evidence of their implementation is scarce. The indicators that have been developed mainly focus on integration within curative care or social care. Authors suggest that national quality and outcome indicators should increasingly focus on integrated health service delivery rather than the performance of individual sectors such as acute care.

There are three tools identified in the literature to **measure integration**: the balanced score card measures the implementation and impact of integration; clinical microsystem assessment tool allows the organisation to compare it's characteristics to those considered key to successful integration, and the scale of functional integration is used to analyse intra-organisational, inter-organisational, horizontal and vertical integration.

The research indicated that while tools for evaluation and indicators of integration have been developed, they are limited in number and evidence of their implementation is scarce. The tools and indicators that have been described focus on integration within curative care or social care. There is little evidence on the evaluation of integration between public health and medical care.

The importance of goal setting and attainment of goals in integrated care is addressed by several researchers. It is important to reach a consensus about integration targets before starting the integration process. In addition, the reviewers report that the agreed integration targets must in one way or another be put into a



strategic framework and approved by the management of the organisations involved. In this way, there can be a focus on overall organisational effectiveness and the extent to which common integration goals are fulfilled. Moreover, the driving force of change in the measurement of integration should not be underestimated. A negative result can instinctively start self-correcting processes. Furthermore, measuring integration can in itself be perceived as a normative signal from the management that reaching integration targets have a high priority.

### Question 6: What is the process to integrate service?

We were not asked to describe the process of integration in the question but we came across two papers that provided some useful insight on designing and implementing integration; one paper is from the United Kingdom and the other from the Netherlands. The two papers findings are presented separately.

**Shaw et al[28]** in their report 'What is integration?' presents four key lessons that can be used as guiding principles for those pursuing integrated care which are:

1. Integrated care is best understood as a strategy for improving patient care;
2. The service user (or population) is the organising principle of integrated care;
3. One form of integrated care does not fit all;
4. It is only possible to improve what you measure.

#### **1. Integrated care is best understood as a strategy for improving patient care;**

- Integrated care is concerned with improving patient care through better coordination. A decision about the intensity of integration is essential, starting with links across services, coordinating teams or pooling resources. Where there is a strong history of partnership working, further steps to amalgamate into a single integrated organisation may be more feasible (although integration that is focused largely on bringing organisations together is unlikely to create improvements in care for patients);

#### **2. The service user (or population) is the organising principle of integrated care;**

- Careful analysis of the goals of integration is critical in order to establish what might help or hinder progress. There is a need for a shared vision in which the service user perspective and patient experience is central. This will then shape how, when and where to integrate services in order to improve patient care. Policy-makers and practitioners should use the prompts in Figure 18 to inform discussion and decision making about when to integrate, how and why.

#### **3. One form of integrated care does not fit all;**

- There is no one model of integrated care that is suited to all contexts, settings and circumstances. Careful analysis is needed about the different integrative processes that can support integration within a particular care setting. Decisions about which approaches are most relevant to a particular setting will be guided by the goals of the project, the needs of service users and other stakeholders involved, existing provision and available resources.

#### **4. It is only possible to improve what you measure;**

- There is a shortfall in evidence of the impact of integrated care. What evidence there is tends to be drawn from a limited range of settings and initiatives, which focus on structures and processes, and involve limited assessment of outcomes or costs. Further work is urgently needed to identify what integrated care initiatives work best for whom, and in what circumstances. As integration is an on-going process, evaluation can facilitate continual refinement.

Shaw et al[28] proposes key prompts to assist policy-makers, planners, providers and the users with designing and initiating integrated care (Figure 18). These include: taking time to develop an agreed vision and goal for the population using the service; considering the local and national context in which integration will occur and dealing with roles and responsibilities before integrating organisations; deciding what type of process you wish to integrate and identify how it will work; deciding the breadth of integration considering communication, choice, competition and incentives; deciding the intensity of integration required but ensuring that this service integration does not induce fragmentation elsewhere.

Feature	Key and sub-questions to ask [28]
<b>Goal</b>	a) What are you seeking to achieve by pursuing integrated care? <ul style="list-style-type: none"> <li>• What is the problem that you are addressing?</li> <li>• Is integrated care the 'best' solution?</li> </ul> b) What is the initial target service user group? <ul style="list-style-type: none"> <li>• How will you ensure that service users remain the organising principle for integrated care throughout?</li> <li>• How will integrated care address inequalities for service user groups, as well as the wider community?</li> </ul> c) How will you ensure organisational support for the goals of the project (for example, a senior officer responsible for delivery, a dedicated budget)?
<b>Context</b>	d) Is the proposed integration project associated with any other improvement programmes? <ul style="list-style-type: none"> <li>• How will this impact on local integration?</li> <li>• What competing national or local agendas do you need to consider?</li> </ul> e) Which sectors are involved and what is their role in relation to integration (for example, patients/public, primary care, acute care, public health, third sector, private sector)? <ul style="list-style-type: none"> <li>• What are the potential consequences of integration on other parts of the health/social care economy?</li> </ul> f) How will you bring in strong, visible leaders from each integrating organisation or group to champion the change? <ul style="list-style-type: none"> <li>• How will you ensure dialogue and consensus across stakeholders and/or organisations about the shared objectives of integration and about the need to spend resources differently?</li> </ul>
<b>Type</b>	g) What are the most important integrative processes for your project (for example, joint administrative processes, aligning financial incentives, coordination of clinical services, developing shared values)? <ul style="list-style-type: none"> <li>• What existing structures, partnerships and processes can you build on?</li> <li>• What will you need to start from scratch?</li> </ul> h) How will commissioning arrangements support and enhance integration rather than perversely incentivise it?           i) How will you ensure effective data sharing and management of information, both of which are crucial to the success of integration?
<b>Breadth</b>	j) How will vertical or horizontal integration (i.e. integration across different levels and/or aspects of the care system) contribute to the success of your project? <ul style="list-style-type: none"> <li>• How might you avoid a possible disconnect (for example, between horizontally integrated primary/community services and vertically integrated care pathways)?</li> </ul> k) How will you address issues of choice, competition and contestability? <ul style="list-style-type: none"> <li>• How will you keep momentum and ensure a sustained focus on integrated care?</li> </ul> l) How will you identify and align the incentives needed to support integration across professional groups, teams or organisations?
<b>Intensity</b>	m) How does the degree of integration (full integration, coordination or linkage) relate to your goals and the local context in which you are working?           n) How will you ensure that integration within one part of a health-economy does not result in inappropriate and/or increased fragmentation elsewhere?

**Figure 18. Key prompts to assist with developing integrated care by Shaw et al, 2011. [28]**

#### **A four phase development model for integrated care services in the Netherlands. [57]**

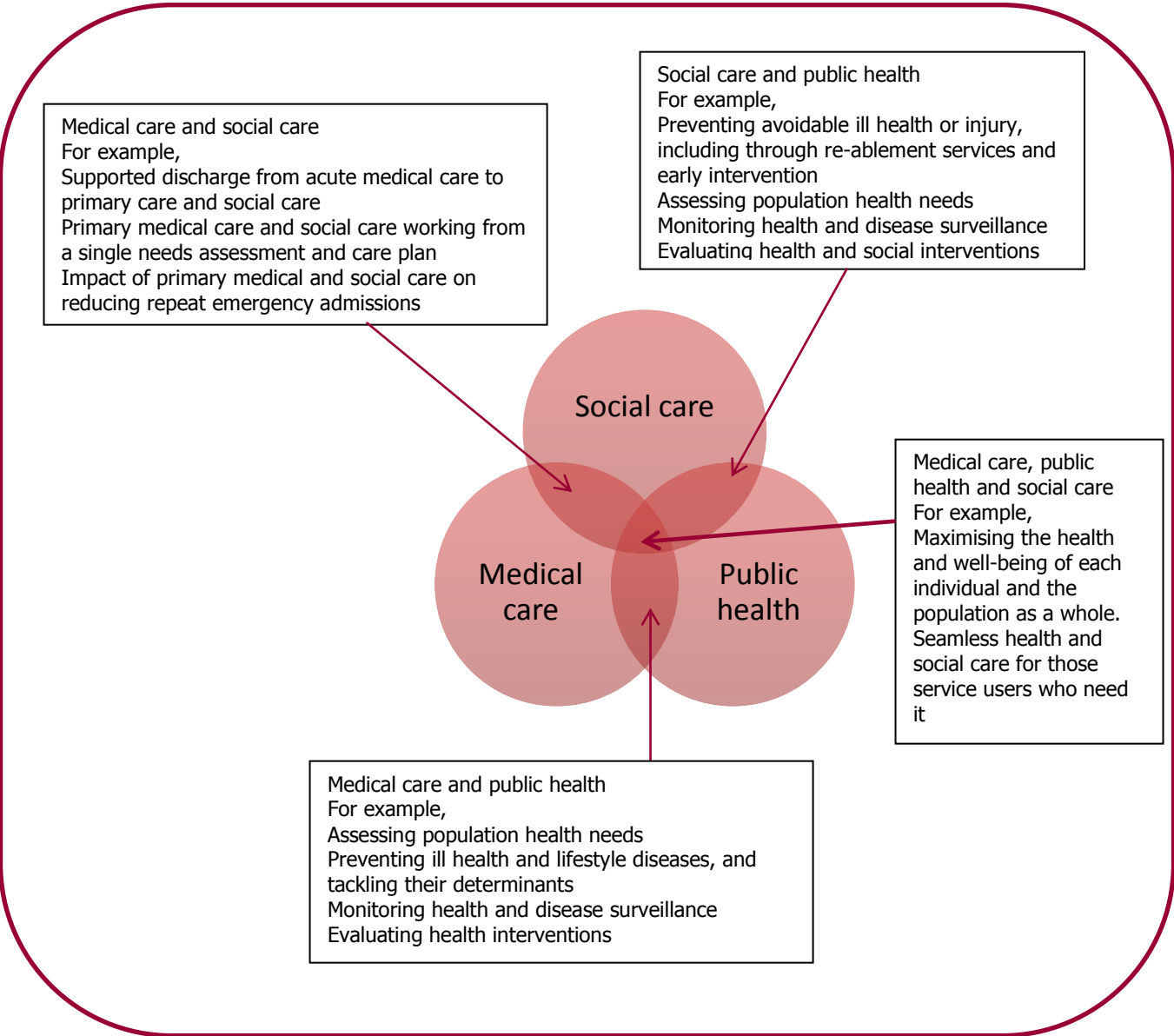
**Minkman and colleagues** [57] explore how local integrated care services are developed in the Netherlands, and to conceptualise and operationalise a development model for integrated care. The research is based on an expert panel taking part in a Delphi and Concept Mapping Study which was followed by a two-part questionnaire designed to identify the development process of integrated care. The findings of this study provide a descriptive model of the complete process that integrated care services can undergo in the Netherlands and this is based on expert experience. The authors present four phases of integration which are: initiative and design; experimental and execution; expansion and monitoring; and consolidation and transformation. The authors identify a number of steps that usually occur in each phase (Figure 19). This

study presents a set of procedures that one can follow to integrate services rather than deciding levels at which integration should occur and naming types of or named opportunities for integrated care.

Phase	Steps
<b>PHASE 1</b> Initiative and design phase	<ul style="list-style-type: none"> <li>• The collaboration between health care providers has been intensified or started up.</li> <li>• The starting point is a common problem or chance occurrence, or builds on current cooperation among care professionals.</li> <li>• There is a sense of urgency and there are possibilities for working on these challenges in collaboration.</li> <li>• The targeted patient group, the care chain and care process have been defined, as also the needs of patients and stakeholders.</li> <li>• The level of ambitions, motivation and leadership determine the progress achieved.</li> <li>• A multidisciplinary team designs an experiment or project to execute the present ideas.</li> <li>• The collaboration can be signed up in an agreement among care partners.</li> </ul>
<b>PHASE 2</b> Experimental and execution phase	<ul style="list-style-type: none"> <li>• New initiatives or projects are being executed in the care chain.</li> <li>• The aims, content, roles, and tasks in the care chain have been clarified and written down in care pathways and protocols.</li> <li>• There is coordination on the level of the care chain by for instance installing coordinators or setting up meetings.</li> <li>• Information about patient groups, working procedures or professional knowledge is exchanged.</li> <li>• There are experiments within the collaboration, results are evaluated to learn from and reflect on.</li> <li>• Preconditions for projects have been considered and boundary conditions have been solved by collaborative means or agreements among care providers</li> </ul>
<b>PHASE 3</b> Expansion and monitoring phase	<ul style="list-style-type: none"> <li>• Projects have been expanded or integrated in integrated care programs.</li> <li>• Agreements on the content, tasks and roles within the care chain are clear and signed up.</li> <li>• Collaboration is no longer on an informal basis.</li> <li>• Results are systematically monitored and improvement areas identified.</li> <li>• The targeted population has been surveyed.</li> <li>• More collaborative initiatives emerge such as mutual education programs.</li> <li>• There is a continuous commitment to the ambition of the integrated care program.</li> <li>• Interorganisational barriers and fragmented financial structures are on the agenda of care partners.</li> </ul>
<b>PHASE 4</b> Consolidation and transformation phase	<ul style="list-style-type: none"> <li>• The integrated care program is the regular way of working and providing care.</li> <li>• Coordination at care chain level is operational; information is being shared, transferred and fed back.</li> <li>• A monitoring system periodically shows if results are sustained, what specific improvement possibilities have been identified and to what extent patient needs have been met.</li> <li>• The program builds further on successful results. Organisational structures transform or are newly designed around the integrated care program.</li> <li>• Financial agreements are arranged with financiers by means of integral contracts covering the care chain as a whole.</li> <li>• Partners in the care chain explore new options for collaboration in the external environment with other partners.</li> </ul>

**Figure 19. Four phase development model for integrated care services in the Netherlands by Minkman and colleagues [57].**

The main functions and expectations of an integrated healthcare system are summarised in figure 20.



**Figure 20. Adapted from opportunities for health care integration.[17]**

Source: Department of Health, UK 2010 sourced in Goodwin and Smith

### Summary Question 6:

We were not asked by the Department of Health (DOH) to describe the **procedure for integration** but we came across two papers that provided some useful insight on designing and implementing integration; one paper is from the United Kingdom and the other from the Netherlands. Shaw et al in their report 'What is integration?' presents four key lessons that can be used as guiding principles for those pursuing integrated care which are:

1. Integrated care is best understood as a strategy for improving patient care;
2. The service user (or population) is the organising principle of integrated care;
3. One form of integrated care does not fit all;
4. It is only possible to improve what you measure.

Shaw et al proposes key prompts to assist policy-makers, planners, providers and the users with designing and initiating integrated care). These include:

- Taking time to develop an agreed vision and goal for the population using the service;
- Considering the local and national context in which integration will occur and dealing with roles and responsibilities before integrating organisations;
- Deciding what type of process you wish to integrate and identify how it will work;
- Deciding the breadth of integration considering communication, choice, competition and incentives;
- Deciding the intensity of integration required but ensuring that this service integration does not induce fragmentation elsewhere.

Minkman and colleagues explore how local integrated care services are developed in the Netherlands in order to conceptualise and operationalise a development model for integrated care. The findings of this study provide a descriptive model of the complete process that integrated care services can undergo in the Netherlands and this is based on expert experience. The authors present four phases of integration which are: initiative and design; experimental and execution; expansion and monitoring; and consolidation and transformation. The authors identify a number of steps that usually occur in each phase.

## Conclusions

The field of integrated healthcare delivery is in its early phase and there is no consensus on concepts and preferred methodology. Consequently, conducting a review of methods to introduce and measure integrated healthcare delivery is not straight forward, since the terms are not used systematically in the literature. Interest in collaboration has increased recently as integrated care is essential to sustaining our health systems. The governments in many countries see integrated care as a means of optimising system performance and attaining quality patient outcomes by achieving better coordination of services across the entire care continuum. However there is much less agreement on the best ways to accomplish the goal of integrated care.

It is believed that integrated care can address healthcare efficiency and effectiveness concerns. Integrated care entails achieving collaboration between 'preventative' medicine, 'curative' medicine and social care sectors. It seeks to accomplish this by ensuring easy links and seamless transitions for people at various points to ensure the health and well-being of the entire population.

It is extremely important to develop agreement around integration terminology and typology as at the moment the literature is confusing and this lack of specificity and clarity greatly hampers systematic understanding and successful, real-world application. From the public health perspective some work has been done in exploring aspects of integration with primary care particularly in Canada, but the main body of work in this area was done by Lasker when he used a grounded theory approach to examine actual collaborations taking place in the USA in 1997, from which he devised six synergies and six structural foundations underpinning them.

Formalised approaches, including policies, are needed to support and endorse collaboration so that it is a deliberate action rather than one that occurs on an ad-hoc basis. For collaboration to be successful, it is important to have clearly articulated and well understood policies within the health care system. Collaboration is facilitated when the vision and goals are jointly determined and systematically communicated across all levels, from executive directors to senior managers to front line practitioners. Policymakers and health managers should be aware that coordination through joint planning is a necessary expense when there is an overall systemic vision of a connected delivery of services. The literature reports that joint health planning needs to actively engage all stakeholders and a high degree of recurrent feedback between the stakeholders is warranted.

Organisational culture has an important influence on integration and organisations having inclusive, transparent communication and decision-making processes facilitates collaboration. Collaboratively developed work plans incorporating a mix of population and individual approaches can work synergistically to address local community health needs. Information systems technology is needed to inform different groups about public health problems and to link them together to take effective action. These groups require the means to retrieve, manipulate, and display information so that it can be used efficiently for specific health-related responses. In general investments in shared information technologies are required, particularly with respect to needs assessment, immunisation, child care, epidemic responses, and aspects of chronic disease prevention and management.

Educational institutions and accreditation bodies can influence the preparation of professionals for collaboration and have an important role to play in facilitating and nurturing a collaborative environment. When a collaborative system is put in place it is important at the outset to set out the goals for the

collaborative measure being undertaken and for on-going evaluation of collaborations to take place. This is imperative to help to ensure a collaboration is successful and for a continuous quality improvement process. As pointed out in the literature 'unless you measure something, you can't learn from it'.

Integrated healthcare delivery can be measured, and methods are available. However, the method selected depends on the objective. Due to the relative newness of this area established off the shelf measures are not yet available especially in the area of public health. Measuring integration involves setting a baseline for key integration indicators, and then monitoring and evaluating whether the process of integration was implemented as intended and the impact of integration on the health system including patient, provider, organisation, funder and policy-maker. Authors suggest that national quality and outcome indicators should increasingly focus on integrated health service delivery rather than the performance of individual sectors such as acute care.

There are three tools described to measure integration, the 'balanced score card', the 'clinical microsystem assessment tool' and the 'scale of functional integration' tool. Also indicators have been proposed to measure the extent to which an integrated health system has been achieved but these are limited in number, evidence of their implementation is scarce and they focus on integration within medical care or social care.

The positive outcomes of coordination of healthcare services are to an increasing extent becoming clear such as better use of resources, reduced duplication, clearer communication, higher vaccination rates, etc.. However the complexity of the field is makes it difficult to design and implement trial studies. Conceptual clarity and a consistent theoretical framework are needed to assist the design and implementation of pilot studies. While researchers respond to these needs, patients and providers face the multiple challenges of today's healthcare environment. Decision makers, planners and managers need evidence-based policy options and information on the scope of the integrated care challenges they are facing.



## Appendix A: Extraction Form

<b>Author</b>	
<b>Publication date</b>	
<b>Title</b> <b>Main purpose</b> Sub-objectives	
<b>Title</b> <b>Participants:</b> who is doing the integrating	
<b>Title</b> <b>Study type</b>	
<b>Title</b> <b>Country or area</b>	
<b>Title</b> <b>Study rational/motivation</b> How In what context	
<b>Title</b> <b>Mechanisms/theoretical framework</b> Define Describe Adaption by participants	
<b>Title</b> <b>Organisations</b> involved (what are they integrating)	
<b>Title</b> <b>Precipitators</b>	
<b>Title</b> <b>Facilitators</b>	
<b>Title</b> <b>Barriers</b>	
<b>Title</b> <b>Desired outcomes</b>	
<b>Title</b> <b>Results</b>	
<b>Title</b> <b>Actual outcomes</b>	
<b>Title</b> <b>Indicators/Features of success</b>	
<b>Title</b> <b>Future policy</b>	

## Appendix B: Search terms used to identify literature on integration

Integration PC & PH searches

**PubMed Search** 19 March 2013 for integration PC & PH

(Delivery of Health Care[MH] OR integration OR integrated) AND (cooperative behavior[MH] OR collaboration OR partnership OR cooperation OR interinstitutional relations[MH] or interprofessional relations[MH]) AND (preventive health services[MH] OR preventive medicine[MH] OR health promotion[MH] OR "health and wellbeing" OR public health[MH] OR public health administration[MH] OR community health services[MH] OR national health programs[MH]) AND ("general health services" OR curative OR primary health care[MH] OR family medicine OR physicians[MH] OR hospitals[MH] OR hospital administration[MH]) AND (continuity of patient care[MH] OR patient-centered care[MH] OR patient care team[MH])

Limits were: 1st 2008 to 2013 and English language

667 articles were retrieved and 25 deemed possibly relevant on first screening (of the abstract or title if no abstract)

### CINAHL with Full Text

**S7** S1 MH health care delivery OR AB integrat\* AND S2 MH cooperative behavior OR MH collaboration OR AB partnership OR AB cooperation OR MH interinstitutional relations OR MH interprofessional relations AND S3 MH preventive health care OR MH health promotion OR AB ( "health and wellbeing" ) OR MH public health OR MH community health services OR MH national health programs AND S4 AB "general health services" OR AB curative OR MH primary health care OR AB "family medicine" OR MH physicians OR MH hospitals AND S5 MH continuity of patient care OR MH patient centered care OR MH multidisciplinary care team OR AB "patient care team" Limiters - Abstract Available  
Search modes - Boolean/Phrase EBSCO host  
CINAHL with Full Text 11 articles

**S6** S1 AND S2 AND S3 AND S4 AND S5 Search modes - Boolean/Phrase Interface -  
EBSCOhost  
Database - CINAHL with Full Text 11 articles

### Health Business Elite Search Terms

**S7** S1 MH health care delivery OR AB integrat\* AND S2 MH cooperative behavior OR MH collaboration OR AB partnership OR AB cooperation OR MH interinstitutional relations OR MH interprofessional relations AND S3 MH preventive health care OR MH health promotion OR AB ( "health and wellbeing" ) OR MH public health OR MH community health services OR MH national health programs AND S4 AB "general health services" OR AB curative OR MH primary health care OR AB "family medicine" OR MH physicians OR MH hospitals AND S5 MH continuity of patient care OR MH patient centered care OR MH multidisciplinary care team OR AB "patient care team" Limiters - Abstract Available  
Search modes - Boolean/Phrase EBSCO host

**S6** S1 AND S2 AND S3 AND S4 AND S5 Search modes -  
-

Please find below results of search from Health Business Elite - there are 61 references

### Google and Google Scholar

integrate "primary care" preventive OR public OR promoting OR well OR being OR community OR screening "hospital care" collaboration  
integrate preventive OR public OR "well being" OR "family physician" OR community OR screening "primary care"  
integrate preventive OR public OR curative OR "well being" OR "family physician" OR community "primary

care"

integrate hospitals patient-centered OR preventive OR public OR curative OR "well being" OR "family physician" OR community

integrate "patient centered" OR preventive OR public OR curative OR "well being" OR "family physician" OR partnership "primary care"

integrate collaboration hospital "patient centered" OR preventive OR "public health" OR curative OR "well being" OR "family physician"

integrate cooperation hospital "public health" "patient centered" OR preventive OR curative OR "well being" OR "family physician"

integrate partnership hospital "public health" "patient centered" OR preventive OR curative OR "well being" OR "family physician" 58 results

**Cochrane. (used this search string and only got 1 hit )**

(health care delivery[MH] OR integrat\*[ti,ab,kw] OR "integrated care"[ti,ab,kw]) AND (cooperative behavior[MH] OR collaboration[ti,ab,kw] OR partnership[ti,ab,kw] OR cooperation[ti,ab,kw] OR interinstitutional relations[MH] or interprofessional relations[MH]) AND (preventive health services[MH] OR "health and wellbeing"[ti,ab,kw] OR public health[MH] OR community health services[MH] OR national health programs[MH]) AND ("general health services"[ti,ab,kw] OR curative[ti,ab,kw] OR primary health care[MH] OR "family medicine"[ti,ab,kw] OR physicians[MH] OR hospitals[MH]) AND (continuity of patient care[MH] OR patient centered care[MH] OR patient care team"[MH])

Search was limited to 2003-2013

So I then broadened out the search by trying different combinations of the concepts, leaving out some of them and got 6 hits.

## Appendix C: Sixteen index reviews used to shape the review

1	Allin S, et al., <i>Making decisions on public health: a review of eight countries</i> . 2004, World Health Organization: Geneva.
2	Ciliska D, Woodcox V, and Isaacs S, <i>A descriptive study of the attachment of public health nurses to family physicians' offices</i> . Public Health Nursing, 1992(9): p. 53-57.
3	Curry N and Ham C, <i>Clinical and service integration. The route to improved outcomes</i> . 2010, The Kings Fund: London.
4	Frontier Economics, et al., <i>Enablers and barriers to integrated care and implications for Monitor</i> . 2012, Monitor: London.
5	Koelen MA, Vaandrager L, and Wagemakers A, <i>The healthy alliances (HALL) framework: prerequisites for success</i> . Family Practice, 2012(29): p. i132-i138.
6	Lasker RD, Abramson DM, and Freedman GR, <i>Pocket guide to cases of medicine and public health collaboration</i> . 1998, The New York Academy of Medicine: New York.
7	Lasker RD and Committee on Medicine and Public Health, <i>Medicine &amp; public health: the power of collaboration</i> . . 1997, New York Academy of Medicine: New York.
8	Marriott J and Mable AL, <i>An overview of progress and potential in health system integration in Canada</i> . 2002, Health Canada: Ottawa.
9	Minkman MMN, Ahous KTB, and Huijsman R, <i>A four phase development model for integrated care services in the Netherlands</i> . BMC Health Services Research, 2009.
10	Martin-Misener R and Valaitis R, <i>A scoping literature review of collaboration between primary care and public health: a report to the Canadian Health Services Research Foundation</i> . 2008, McMaster University: Hamilton.
11	Martin-Misener R, et al., <i>A scoping literature review of collaboration between primary care and public health</i> . Primary Health Care Research & Development 2012. <b>13</b> (4): p. 327-346.
12	Ramsey A, Fulop N, and Edwards N, <i>The evidence base for vertical integration in health care</i> . Journal of Integrated Care, 2009. <b>17</b> (2).
13	San Martín-Rodríguez L, et al., <i>The determinants of successful collaboration: a review of theoretical and empirical studies</i> . Journal of Interprofessional Care, 2005. <b>19</b> (Suppl 1): p. 132-47.
14	Shaw S, Rosen R, and Rumbold B, <i>What is integrated care?</i> 2011, Nuffield Trust: London.
15	Stevenson Rowan M, Hogg W, and Huston P, <i>Integrating public health and primary care</i> . Healthcare Policy/Politiques de Santé, 2007. <b>3</b> (1): p. 1-22.
16	Suter E, et al., <i>Ten key principles for successful health systems integration</i> . Healthcare Quarterly, 2009. <b>13</b> : p. 16-23.

The references in 16 reviews were hand searched to identify other pertinent articles and the authors names were used as search terms in Google Scholar to located their other publications on integration.

## Appendix D: Lasker's synergies

### Synergy I-A

In 1993, South Carolina's Marie Meglen, C.N.M., Director of the Bureau of Maternal and Child Health, invited a select number of paediatricians from around the state to join with their local health departments in an experimental partnership. The state health department was concerned about the dwindling number of children in the Medicaid

program who had access to a family doctor or paediatrician. Over half the babies born in the state were Medicaid-eligible, but fewer than half saw a primary care provider. The state knew all too well how fragmented and sporadic the new-born care was—Early Periodic Screening, Detection, and Treatment (EPSDT) was provided in health department clinics, acute care often was provided by emergency rooms, and many babies were either under immunised or double-immunized because of poorly coordinated care. Also, most one year- olds in the Medicaid program had been seen for only two primary care visits in their first year of life, despite the American Academy of Paediatrics' guideline of five primary care visits.

Meglen believed that by adding public health services to the medical services provided by private doctors, "We could assure medical homes for every child in the state. A doctor could see twice or maybe three times as many children if he or she didn't have to do all of it—public health could help." Being on the cusp of a crisis—the potential changes foreseen with Medicaid managed care—was fortuitous. "It seemed like a good time to capitalise on everyone's anxiety," said Meglen, "and in turn get something good for children."

The five paediatricians invited to the state capital were chosen carefully. All served a large Medicaid population in their community, and all had good relationships with their respective local health officers. Meglen proposed launching pilot projects in which public health nurses would be assigned to the private paediatricians' offices to assist the doctors with Medicaid children from infancy to two years of age. The state would fund these partnerships as Child Health Initiatives; specific strategies were left to the discretion of each partnership.

In rural Lancaster, paediatrician Dexter Cook, M.D.; the local health officer, Sandra Catoe, M.D.; and the public health nursing director, Miriam Cauthen, R.N., designed a model in which public health nurses are outfitted with beepers to alert them to every Medicaid birth in the county. "We took the best nurses we had and put them in the partnership," said Catoe. At the partnership's inception, Cook was the sole participating paediatrician in the county (the program has since expanded to other physicians). In his partnership, the nurses visit the new mothers at the hospital nursery, inform them of the voluntary program, and recruit their babies to Cook's practice. The nurse becomes each family's primary medical liaison, arranging for office visits with Cook, conducting a number of clinical preventive services (such as vaccinations) either at the baby's home or in Cook's office, and assisting the mothers in keeping their appointments and finding other necessary health and social services. Part of the bargain is that the nurses also "take call" for the Medicaid families in Cook's practice up to ten o'clock each night, seven days a week, and follow his patient protocols. The nurses note their findings in the office chart, and consult with Cook about family concerns that impinge on the children's care. Each nurse maintains an average caseload of 60 Medicaid babies. "These public health nurses are the eyes of the physician," said Jan Cauthen, R.N., a state nursing coordinator. "They can make a home visit, see the family's environment, and tell the physicians about factors that might influence the baby's health. Also, many people are intimidated by physicians. They're more willing to talk to the nurses."

The state's five pilot partnerships were so successful that the South Carolina Medical Association (SCMA) was

awarded a Robert Wood Johnson Foundation (RWJF) “Reach Out” grant to expand the public-private partnerships state-wide in state health department. Cook was designated the project’s medical director, SCMA’s research foundation became the administrative and fiscal agent, and the state health department assigned Jan Cauthen to oversee the partnership operations in the local health offices. In addition, the state health department bundled together many of the assessment and support services into the category of “family support services” under its Medicaid contract. This way, the public health units could fund their collaborations with the paediatricians by billing Medicaid for the family support services provided through the partnerships. The health department defined this category to include services provided by indigenous community outreach workers, public health nutritionists, social workers, and health educators, in addition to the nurses.

Since there was no fixed model for a partnership, the specific arrangements varied by practice. In some offices, for example, the physician arranged for a public health paediatric nurse practitioner to provide both sick care and well care in the office, whereas in other practices the paediatrician referred high-risk Medicaid families to the health department for family support services. Throughout the state, though, the principle was consistent: by working with individual medical practitioners, local public health agencies could support the primary care needs of the babies covered by Medicaid.

Meanwhile, Cook brought another paediatrician into his practice, which has grown from 1,500 to 6,000 patients in five years, and used the RWJF grant money to promote the partnership program to his colleagues and their local health officers around the state. “In some places, you could throw a rock from the paediatrician’s office to the local health department,” recalled Cook, “yet they had no communication. The private paediatricians were wary—they didn’t know what the public health sector was doing. They thought that public health was trying to take control. It helped a great deal that it wasn’t someone from the state health department pitching this but a private physician, someone with experience who knew what it was like to have a waiting room full of patients.”

Cook described the benefits he derived from the partnership as a model. He noted that his “show” rate for appointments has increased from 50 per cent to over 90 per cent, that it is easier now to catch serious problems at an early stage given the public health nurse’s home visits and attention to the family, and that the partnership has increased the capacity of his practice. “It’s a great deal for the physicians,” said Cook. “The paediatrician gets the public health nurse teaching the patient parenting skills, doing follow-up, and making emergency calls.” In Cook’s practice, immunization of two-year-olds increased from 62 per cent to 95 per cent over three years.

“This has done a great deal to change perspectives,” noted Cook of the partnerships, which have expanded to 54 practices around the state, “and it has gone a long way to linking these parallel delivery systems.”

## Synergy II

One baby's death in Pensacola, Florida, in the mid-1970s, dramatically changed the shape of indigent care in this port city on the Gulf of Mexico. An obstetrics and gynaecology (OB/GYN) resident on call at the public hospital delivered a premature baby on the night shift. There were complications, and the baby died. The award to the baby's parents of over \$1 million bankrupted the Pensacola Education Program, which administered the OB/GYN and five other residencies. Subsequently, four of the six residency programs in town closed down. The paediatric and OB/GYN residencies were picked up by a local hospital, but much of the indigent specialty care for adults that had been provided by the three large tertiary hospitals was lost. "We had patients wandering from emergency room to emergency room," noted Reed Bell, M.D., a paediatrician who is a former local health officer and a former president of the county medical society.

In 1992, two of the local hospitals, Sacred Heart and Baptist Health Care, established a joint community clinic to provide for the primary care needs of the uninsured and low income adult populations. Although this relieved some of the pressure from non-emergency patients overburdening the hospitals' emergency rooms, it still did not address the problem of specialty care for indigent people. In Pensacola and Escambia County, the uninsured population included people who had been downsized out of jobs, proprietors of "mom-and-pop" businesses, homeless adults, and low-wage workers employed in blue collar and tourism jobs. Many did not seek medical care despite problems of chronic pain or chronic conditions such as hypertension or diabetes, waiting instead for a crisis to develop.

When Bell became the health officer of Escambia County, he was determined to address this specialty care need. Given his standing at the county medical society and his dual directorship of the hospital's paediatric residency program and the Children's Medical Services program, Bell had considerable influence with both the private medical community and the county commissioners. "At least when I came to the floor of the medical society they allowed me a hearing," said Bell.

He knew of a program in Alachua County, Florida, called "We Care," in which volunteer physicians had established a framework for providing indigent care, so he approached the local commissioners to fund a We Care office in the county public health department. At the same time, Bell and his colleague Stuart Shippey, M.D., persuaded the medical society to support the effort by recruiting physicians to participate in the program. "Having physician leadership behind this made all the difference," said Bell of his efforts to recruit volunteer physicians. "Some people we had to coax pretty hard, but most were very willing. A lot of our success is based on peer relationships." In addition to the medical society recruitment effort, the We Care coordinator, Karen Dany, regularly makes presentations at group practices and hospital staff meetings.

In an earlier effort to promote such voluntary care for indigent patients, the local medical societies and the Florida Medical Association had lobbied the state legislature, which passed a "sovereign immunity" law in 1990. As such, physicians treating indigent patients are considered state agents and can only be held personally liable for gross negligence.

There were other elements that helped spur the Escambia We Care project. According to Donna Jacobi, M.D., the current chair of the medical society's Indigent Care Committee, there was an interest in documenting the amount of uncompensated care—particularly specialist care—being delivered in the county. Also, for the community physicians already "writing off" charity care, there were significant benefits to registering their patients in the We Care program—the ancillary services of diagnostic tests, lab work, hospitalization, and medications could be arranged through the We Care office; physicians no longer had to leverage favours from

their peers. Moreover, explained Jacobi, the We Care coordinator serves as a master scheduler, assuring that no single physician is unduly burdened by charity care, and counsels her clients to be “more dependable patients.”

Coordinator Dany, employed by the health department, maintains a computerized patient-management and tracking system that also tabulates the amount of donated care or services each physician or institution provides. If a patient needs surgery, for example, Dany will arrange for and schedule a surgeon, anaesthetist, hospital room, and X-ray and blood services as needed. Dany maintains a roster of 260 specialists, including surgeons, cardiologists, and endocrinologists, although some specialties—such as rheumatology and dermatology—are underrepresented despite vigorous peer-recruitment campaigns.

In addition to setting up referrals for specialist care, Dany also works as an ad hoc case manager. All of the physicians interviewed attributed much of We Care’s success to Dany. Having worked as a volunteer missionary in India and a former Medicaid eligibility specialist, she is someone who can blend compassion with deft bureaucratic coordination. Although her program does not have funds to support services such as transportation, she makes referrals to the county mental health centre, discusses finances with patients, and initiates a number of “in-house” referrals to public health programs. “I advocate for the patient for what they need,” said Dany, “but I also try to protect the providers.”

Over the past five years the We Care program has served over 1,800 patients, and at any given time Dany has a caseload of approximately 350. “Some of our docs like the case management part of it,” said the medic society’s Jacobi, “and some are just happy that we’re finally keeping track of all the indigent care that has been delivered.”



**GEORGIA HIV/AIDS GUIDES (GA)**

The face of HIV/AIDS was dramatically changing in Georgia in 1987. Over a third of new HIV infections were being diagnosed outside of metropolitan Atlanta, in rural and isolated areas. In these communities, physicians often were unfamiliar with HIV/AIDS resources and emerging clinical options such as zidovudine (AZT), which could potentially delay the progression of HIV to AIDS. Joseph Wilber, M.D., head of the state health department's infectious disease programme, recognized the need to educate doctors to their evolving role in treating HIV/AIDS. As it was, he, others in his division, and the district health officers were fielding calls regularly from clinicians in practice who needed guidance. "How should I treat my HIV-positive pregnant patient?" "Where can I send patients who want to be tested?" "What types of follow-up and specialist care do my HIV- positive patients need?" "In many towns," recalled Wilber, "there was no place for the patients to go. We needed to get the private physicians up to speed."

Wilber, who had spent 30 years as an internist before joining the health department fulltime, approached the Public Health Committee of the Medical Association of Georgia about a joint project. He proposed collaboratively writing a clinician's guide to HIV/AIDS and distributing it to all the primary care doctors in the state. Notwithstanding earlier differences of opinion between the state health department and the medical society over issues such as informed consent for HIV testing, the Public Health Committee was eager for a resource that could support practicing physicians. Staff members were assigned to the project—Camilla Grayson, M.S.W., from the medical society, and Diana Kirkpatrick, M.P.H.,C.H.E.S., from the health department—and using a Wisconsin clinical guide as their model, Wilber, Grayson, and Kirkpatrick outlined their book.

Relying on research material from the Centers for Disease Control and Prevention (CDC) and input from an advisory board of HIV/AIDS clinicians and infectious disease specialists, the writing group described the clinical elements of care for an HIV-infected patient: the diagnostic process, treatment options, and follow-up guidelines. "The medical aspects were approached from the practicing physician's perspective, which involves the scientific and clinical angles of dealing with individual patients" said the medical society's Grayson. What Wilber and Kirkpatrick brought from public health, stated Grayson, "was that they made us look at HIV/AIDS in a broader context and consider how physicians could treat a patient and spread a message. They raised the issue of doing better testing and the value of reporting and surveillance. As a health educator, Diana was very helpful in finding the best method to present the messages in ways that were sensitive to a number of audiences."

Published in 1988, *The Clinician's Guide to AIDS and HIV Infection in Georgia*<sup>72</sup> provided a resource inventory of specialist care, community organizations, and laboratory resources, and a section on Georgia laws involving testing and counselling, patient confidentiality, reporting requirements, and informed consent. It also included a chapter on the epidemiology of AIDS in Georgia. "Small town doctors were surprised to see the number of cases in their area," said Wilber. Grayson noted that the group also was "trying to encourage physicians to become more knowledgeable, to be able to talk to groups about AIDS, particularly in the rural areas."

The Guide was jointly published using funds from the two partner agencies as well as monies solicited from the four medical schools in Georgia, the state hospital association, the South-eastern AIDS Training and Education Centre, and the Burroughs Wellcome pharmaceutical company. The full printing of 14,000 copies of the book was distributed to all primary care physicians in the state, and to specialists in emergency medicine, obstetrics and gynaecology, infectious disease, and paediatrics, every public health department, and every

medical and public health school. The group followed this up with a second edition in 1992, and Wilber's successor at the health department, Kathleen Toomey, M.D.,M.P.H., supported the publication of a paediatric guide in 1996.<sup>98</sup> "We wrote the paediatric guide with the infectious disease clinic at Grady Hospital," said the health department's Kirkpatrick, "and we also worked with social workers from Grady to cover the psychosocial aspects of HIV/AIDS." Based on feedback from practitioners, the writers expanded the treatment guidelines in the paediatric guide, said Kirkpatrick, "so that the book tells clinicians what to expect and what should be done for children at different stages, from new-born up." The book includes chapters on safe sex counselling for adolescents, crisis intervention for children affected by HIV/AIDS, and specific nutritional needs of children with HIV/AIDS.

As with the development of the first two guides, the writing group used the medical society's Public Health Committee, composed of public health physicians and private practitioners from around the state, as a sounding board to oversee the tone and utility of the book. One of the book's "side effects" was the education of the Committee members themselves, particularly regarding public health funding needs for surveillance and prevention activities. "This prompted us to support more of what public health was doing, and vice versa" said Grayson, who is in charge of health policy for the medical society. "We had been polarized over some issues, but this allowed public health to see what medicine could offer, and it has helped improve our relationship."

Wilber, who has since retired from the state health department and is currently developing a free AIDS clinic in a rural Georgia town, said the books represented "good science and good medicine. It was a wonderful collaboration, and it was a bit unusual. But it was the best way to reach the rural and small town doctors—through the state medical association

**NEW JERSEY INFORMATION SYSTEMS (NJ)**

In the late 1980s, the hospitals and the state health department in New Jersey each wanted a reliable perinatal database, although admittedly for different reasons. To support epidemiologic analyses, the health department wanted the capacity to monitor and record prenatal and birth events electronically. Hospitals wanted to be able to submit paperwork electronically, to reduce the collection of redundant information, and to have more prenatal and medical information about pregnant women before they presented in labour at the emergency room. The state hospital association wanted a more accurate research database in order to analyse epidemiologic trends, assess risk in different hospital markets, and obtain reliable data for negotiations with insurers. Since it seemed that a single information system might work for all the parties, the state's Director of Maternal and Child Health, George Helpin, M.D., convened an advisory group of state personnel and hospital representatives to consider their mutual needs.

The group initially struggled with their competing interests. “We had many, many disagreements,” recalled the health department’s Virginia Dato, M.D., M.P.H., a paediatrician finishing her preventive medicine residency who was assigned to the project. “There was little trust.” When a vendor involved in the project agreed to meet everyone’s needs simultaneously, however, the project quickly evolved into a technical problem-solving exercise. The group’s “product” was an electronic birth certificate that would provide the state health department with aggregate state-wide data to support surveillance, vital registries, and epidemiologic investigations. Each hospital, however, could customize the birth certificate to meet its own needs.

Similar electronic ventures emerged in New Jersey throughout the 1990s—an interactive immunization registry, a laboratory-reporting system for multidrug-resistant pathogens, and an environmental emergency-notification system, among others. As the technology blossomed, each of the autonomous projects has been joined into a single overarching electronic network that supports a variety of medical and public health objectives. The goals of all of these projects are similar—to simplify (or automate) the reporting of key events or incidents; to create reliable databases that can provide useful information for clinical, epidemiologic, and policy-planning purposes; and to provide meaningful feedback to providers that will help guide clinical decision-making and support more effective medical practice.

In the electronic birth certificate project, the working group acknowledged the specific needs of all partners. They designed the system so hospitals could add modules to gather data that would not be forwarded to the state. According to Rona Remstein, R.N., B.S.N., of the New Jersey Hospital Association, some hospitals wanted to monitor breast-feeding patterns, others wanted to track high-risk babies, and still others wanted to monitor Caesarean section rates and induction indicators. In turn, the health department added reporting forms that could be folded into the electronic birth certificate. They designed modules that automatically registered low birth weight babies for new-born hearing screening exams, and added a parentage certificate that could be printed and signed by the baby’s mother and father. The working group’s attention to each partner’s particular interests clearly paid off. Within two years of its implementation, all the hospitals in the state were voluntarily registering their births electronically, and the comprehensive birth data were being used to populate the immunization database.

When New Jersey suffered a major measles outbreak in 1989–91, it spurred a number of immunization efforts. One strategy was to create a centralized computer database that integrated immunization data from a number of sources, such as WIC, AFDC, clinics, providers, and hospitals, so that any authorized health care

provider could access a child's immunization history. In 1993, The Robert Wood Johnson Foundation awarded the Department of Paediatrics at the University of Medicine and Dentistry of New Jersey \$3 million to develop the database over three years. The pilot study to test the interactive registry took place in Camden, an impoverished urban area in southern New Jersey, and it involved the major providers of paediatric care in that community.

"Before we had software we had input from providers," said Ruth Gubernick, M.P.H., the Camden County health department's immunization coordinator, who was recruited to serve as a project director. "We assessed different provider practices to see how they did business. We looked at every site to see if they wanted to use the registry on-line, as a part of the registration process, in batch mode at the end of the day, or through a service bureau such as the Camden Area Health Education Centre, which provided off-site data entry and reminder/recall functions for private providers." In addition to analysing the process of how providers would interact with the system, the designers solicited the input Part II: Models of Medicine and Public Health Collaboration 97 of the physicians and clinical office staff for what would be useful to them in their particular clinical settings. A number of practice supports were added to the basic immunization registry as a result of discussions with providers. The system provides clinicians with immunization status reports for individual patients, and it has the capacity to identify children in the practice who need to come in for vaccinations. It can generate phone call or home-visit lists, as well as recall notices and patient reminders that can be mailed to patients on the provider's letterhead. The registry also generates standardized epidemiologic reports for the practice as a whole, such as the proportion of children who are up-to-date with their vaccinations. Some practices have found that up-to-date immunization rates drop for the 15-month-old age group, prompting them to revise their outreach strategies for reminding parents to bring their babies in for vaccinations. Going beyond immunization, the registry also will include a lead-screening field.

The registry has had a secondary effect of improving the relationship between the private practitioners and the local public health department. "The physicians used to think that the public health immunization clinics were pulling paying patients away from their practices," said Gubernick. "Now they can see that only 2 per cent of private patients in Camden are picked up at the health department clinics. Also, they now have a better understanding that the health department clinics keep pointing the child back to their primary care provider." In addition, providers are utilizing the health department outreach workers more often to assist with hard-to-reach patients. "This can't just be public health telling providers what they have to do," offered Gubernick, who has many years of public health experience, "for this to work, it has to be cooperative."

## Synergy 5

### CLARK COUNTY COMMUNITY HEALTH ASSESSMENT (WA)

In 1992, a small group of community residents protested the addition of several service programs in their neighbourhood in Vancouver, Washington. The Southwest Washington Medical Centre was thinking of adding social services and a health department WIC clinic to their behavioural medicine program. Kaiser Permanente was considering co-locating a clinic at the site as well. Given the community's environment—generally run-down, with pockets of high unemployment, and a large number of clients using mental health, drug treatment, and other social services—the agencies' planners thought new services would be warmly embraced, or, at the very least, accepted. When instead they were greeted with a "Not In My Back Yard" (NIMBY) outcry, it brought them up short. It also prompted the director of the health department, the executive director of the medical centre, and the vice president for community affairs at the Kaiser Permanente health plan, to reconsider their approach to community health planning.

It had taken the three organizations several years of negotiations—against a backdrop of state-wide health reform—to even include one another in their strategic health planning, and now the three executives acknowledged that their mutual involvement had not been sufficient. They needed to bring the community into their assessment activities, and it paid to think broadly about the health needs of the entire Clark County. Using their organizational contacts, the three raised over \$100,000 from the hospital, the managed care organization, the city and county government, the CDC, and the local health department to hire a facilitator to lead a community-involvement process. In addition, the health department created a Division of Assessment and Epidemiology to help focus its own institutional resources.

At the health department's prompting, a community partnership group was formed. Called Community Choices 2010 (CC 2010), it was composed of residents (including those neighbours whose initial protests spurred its creation), agency leaders, health care providers, local business people, and representatives from such governmental entities as the school district, the sheriff's department, the transportation department, and the economic development agency. The group's goals were to evaluate the health of the community and to prioritize its health needs.

The health department contributed its epidemiologic staff to CC 2010 to help assemble and analyse data. They collected morbidity and mortality data from the state health department—birth and death records, reportable disease data, and prenatal and maternity data. They also reviewed the state's hospital discharge data, culled census data from the county's planning unit, and obtained educational achievement data and dropout rates from the school district. In addition, a number of the partners around the table tapped their own institutional databases: crime data were provided by the sheriff; economic data came from the state employment service; and both Kaiser Permanente and the medical center contributed data on uncompensated emergency room care. CC 2010 also commissioned a series of focus groups in the community and scheduled a number of community presentations.

"The trick," said Bonnie Kostelecky, M.S., M.P.A., R.N., director of the health department's assessment and epidemiology unit, "is that you have to make the data sing for people. We made connections to their lives and their school systems, and we brought it down to their neighbourhoods. When we talked about causes of death we didn't just look at rates. We looked at a neighbourhood—how it had a lot of elderly—looked at how far they were from services and at where the bus lines were. Once we got them hooked on the stuff, the data were very powerful. It got people to think about the 'upstream' causes of health problems." What began as a finding of high lung cancer and cardiovascular disease rates, for example, led the group to consider possible

anti-smoking campaigns, and ways of shaping teen attitudes toward smoking.

After a year-long assessment process, the community partnership settled on six “upstream” domains in which to intervene: youth and families, economic opportunity, access to health and social services, health and safety practices, positive community norms, and education. The facilitator urged the group to identify strategies that addressed each. In particular, she asked the group to think about which agencies and individuals in the community already were committed to these issues. The implementation of these prioritized strategies evolved into a “Healthy Communities” project (profiled in Synergy V-E), involving over 400 people on committees, subcommittees, work groups, and in informal discussions.

The health department, the medical centre, and the managed care organization have made a variety of programmatic changes as a result of the health assessment. The health department has focused greater attention on anti-smoking campaigns and has boosted its public funding requests for community-wide health promotion activities. The medical centre has used some of the data for targeted market analyses, and has reconfigured some of its patient health education efforts. Kaiser Permanente, involved in a state-wide campaign to increase immunization rates, has used the data to target its immunization efforts, particularly in emergency room settings where unexpected “immunization opportunities” arise.

As for the initial NIMBY problem, although the health department agreed to move its WIC and immunization clinics to another neighbourhood, the mental health campus and some of the drug treatment programs remain. Not every problem can be resolved with such a community planning process, noted the health department’s Kostelecky.

**STATE OF FLORIDA DEPARTMENT OF HEALTH (FL)**

In 1975, Florida undertook an experiment in public administration on a grand scale. The state legislature reorganized the public health and welfare systems into a single “superagency,” the Department of Health and Rehabilitative Services (HRS). Under the premise that poor and needy individuals often require a combination of health and social services, the state planned to coordinate all its programs through a single agency. The policy had implications at all levels. Since the agency was built around a “case management model,” administrative “generalists” drawn mostly from the social service ranks replaced specialized health professionals at managerial, regional, and executive levels. The state health officer—the highest ranking public physician—no longer held a cabinet-rank or had any formal direct involvement with county health officials, and instead reported to an assistant secretary of planning.

A number of public health professionals in the health department were frustrated with the change, and many rebelled against the integrated structure or left the department. Equally unhappy was the Florida Medical Association (FMA), which had a longstanding relationship with the public health department and was concerned about the devalued role of health professionals. “What was absent,” said E. Russell Jackson, Jr., FMA’s executive coordinator, “was not only physician influence but public health influence as well.” Jackson knew the territory. He had served as a senior health department official in the 1970s and 1980s; his father also had served the health department as a senior administrator in the 1940s and 1950s.

“We were continually getting dragged down in social service and child-welfare issues,” said deputy state health officer Richard Hunter, Ph.D., who joined the department in 1989. “People didn’t understand the word ‘Health’ in our name. We were having problems getting funding for our budget—especially prevention programs—in an overall budget that included welfare and food stamps. Individuals and families superseded us, and community prevention just kept getting pushed down. We couldn’t get our labs funded. Public health was being identified as indigent care only.”

During the 1990s, the state moved a series of programs away from the public health component of HRS, including environmental and food service programs, transferring them to other state departments such as Agriculture, Environmental Protection, and Business Regulation. According to Marc Yacht, M.D., a county health officer and former president of the Florida Public Health Association, at this point, “Health professionals envisioned the complete assimilation of public health as an arm of social services.” Even as the public health functions were being lost, the agency grew to 40,000 employees, the largest state governmental entity in the country.

In 1995 and 1996, the medical association spearheaded a coalition led by Alvin Smith, M.D., FMA president, that included the state public health association, the state nursing association, and the state environmental health association in a coordinated lobbying effort to reorganise the HRS. The partners drafted a joint resolution calling for a single health agency distinct from social services. Their efforts were reinforced by a series of widely publicized child-welfare “blunders” in which children either were not protected in time or removed too hastily from their parent’s care. The state legislature, according to Jackson, was disenchanted with the “super-agency” and receptive to the coalition’s proposal to split out public health.

As it happened, the FMA presented the strongest “public health” voice in the state, according to most observers. The public health professionals within the department were restricted in lobbying against their own parent agency, so the FMA became the coalition’s principal standard bearer. The FMA lobbyists, who had

considerable influence with state legislators, pressed the case. Several political forces also made it an opportune time for reorganising the department. The Democrats held a marginal majority in the state house of representatives, and the Republican-controlled Senate was keenly sensitive to “doing something for the doctors,” according to a key legislative staff member. Governor Lawton Chiles had been stumping for several years for a “reengineered government” that would be smaller in size and more efficient, so he was at least willing to entertain the idea of splitting up the HRS. At the end of the legislative session, the two houses unanimously passed the bill reorganizing the health department and welfare agencies, and the governor signed it into law.

There were several immediate results of the change: the newly created cabinet position of Secretary of Health was filled by a physician; additional money was made available to the new Department of Health for staffing and for prevention programs; and the county health units again were named “county health departments,” with a clear line to the state administrators. There were also political compromises. The Agency for Health Care Administration, which governs a number of programs affecting physicians, including Medicaid, practice guidelines, and disciplinary actions, was not folded into the new health department as the coalition had proposed, nor were mental health services. Whether the re-born state health department emerges as an administrative success story remains to be seen. Still, “this has been a real shot in the arm for public health workers,” said Bob Harvey, director of the Florida Public Health Association. “We’re in the process now of trying to rebuild the county health departments, and we’re getting back to the point where health professionals are governing health professionals.” As far as the health department’s Hunter is concerned, the support of the state medical association was the deciding factor: “The FMA was clearly the leader. This just wouldn’t have happened without them.”



## Appendix E

Rand provided a summary of findings.

- While much of the wider literature focuses on ‘models’ of integrated care, RAND found that Integrated Care Pilots developed and implemented a loose collection of ‘integrating activities’ based on local circumstances. Despite the variations across the pilots, a number of aims were shared: bringing care closer to the service user; providing service users with a greater sense of continuity of care; identifying and supporting those with greatest needs; providing more preventive care; and reducing the amount of care provided unnecessarily in hospital settings.
- Most pilots concentrated on horizontal integration e.g., integration between community-based services such as general practices, community nursing services and social services rather than vertical integration, e.g., between primary care and secondary care. In addition, only one project attempted to integrate public health with primary care.
- Integrated care led to process improvements such as an increase in the use of care plans and the development of new roles for care staff. Staff believed that these process improvements were leading to improvements in care, even if some of the improvements were not yet apparent.
- Patients did not, in general, share the sense of improvement. This could have been because the process changes reflected the priorities and values of staff (a so-called professionalisation of services); because the benefits had not yet become apparent to service users (‘too early to tell’); because of poor implementation; or because the interventions were an ineffective way to improve patient experience. RAND believe that the lack of improvement in patient experience was in part due to professional rather than user-driven change, partly because it was too early to identify impact within the timescale of the pilots, and partly because, despite having project management skills and effective leadership, some pilots found the complex changes they set for themselves were harder to deliver than anticipated.
- A key aim of many pilots was to reduce hospital utilisation. RAND found no evidence of a general reduction in emergency admissions, but there were reductions in planned admissions and in outpatient attendance.
- The costs of implementing change were varied and individual to each pilot. RAND found no overall significant changes in the costs of secondary care utilisation, but for case management sites there was a net reduction in combined inpatient and outpatient costs (reduced costs for elective admissions and outpatient attendance exceeding increased costs for emergency admissions).
- RAND conclude that the approach to integrated care found in these pilots can improve quality of care if well led and managed, and tailored to local circumstances and patient needs. Improvements are not likely to be evident in the short term.
- RAND’s conclusions are that approaches to integrated care found in these pilots cannot save money in the short term. However, RAND found evidence that the case management approaches used in the pilots could lead to an overall reduction in secondary care costs but not primary care costs.
- RAND noted that the most likely improvements following integrated care activities are in healthcare processes. They are less likely to be apparent in patient experience or in reduced costs.

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