



HealthConnectSA
HEALTH INFORMATION WHEN YOU NEED IT

GP Change Management Strategy

Engagement with General Practice



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Definitions and Acronyms

Definition of Acronym	Description
CCV	Current Consumer View (project in New Zealand)
CHAIN	Contact, Help, Advice and Information Network for Effective Health Care (UK)
CHIN	Community Health Information Network (US)
CNAHS	Central Northern Adelaide Health Service
DHS	Department of Human Services
DoI	Diffusions of Innovation (Theory)
EHR	Electronic Health Record
EMR	Electronic Medical Record
GIS	Geographic Information System
HIT	Health Information Technology
IT/IM	Information technology/information management
LHII	Local Health Information Infrastructure (US)
NHS	National Health Service (UK)
NPfiT	National program for information technology (UK)
Oacis	Open Architecture Clinical Information System
SADI	SA Divisions of General Practice Inc
SAHS	Southern Adelaide Health Service
VPN	Virtual Private Network

Introduction

HealthConnect is a national, cross-jurisdictional strategy to improve safety and quality in health care by establishing and maintaining a range of standardised electronic health information products and services for health care providers and consumers.

The HealthConnect strategy is primarily a Change Management process rather than a technology project and its successful implementation will rely on good communications with stakeholders at national, local and grassroots levels. Implementation must take into account the extensive feedback provided by health care provider and consumer groups, and the lessons learned from the MediConnect field test and HealthConnect trials.

General practice is a particularly important group with which to engage as general practitioners see over 80% of the population annually, and provide comprehensive, coordinated, and continuing care. General practice, together with the Divisions of General Practice Network and the developing Primary Health Care Networks in South Australia, provides a key part of chronic disease management. Trials¹ have shown that the majority of data in an integrated electronic health record would come from general practice.

This document sets out principles and an over-arching framework for a general practice Change Management strategy, which is also relevant to other health care providers who exchange clinical data with general practice. Using such a framework will increase the uptake and the success of the HealthConnect strategy. Change Management will also be incorporated into the specific projects under the HealthConnect business plans, such as care planning and connectivity implementation.

Theory of Change Management - what is it and why use this approach?

Bringing about change is difficult. Sound reasons for change do not automatically translate into change in behaviour or practice. Obvious examples are drink driving related road incidents, the obesity epidemic and the rise in chronic diseases. The advent of evidence-based medicine, in particular the production of best practice clinical guidelines, has been a significant recent advance in medical science. However, a consistent finding in health services research is the gap between the evidence and actual medical practice.² Studies show that 30 to 40% of patients do not receive care according to current scientific evidence, while approximately 20% of the care provided is not needed or is potentially harmful.^{3,4} Research into the barriers to uptake of evidence identifies such barriers to be multifactorial: professional (knowledge, skills, medico-legal concerns), social (peer influence) and organisational (time constraints, complexity, financial).⁵ Similar obstacles hinder the acceptance of e-Health initiatives by medical professionals.⁶

Sustained behaviour change cannot be brought about solely by traditional dissemination methods such as peer-reviewed publications and conference presentations. Formal change processes must be employed and well implemented. Poorly managed change leads to adverse outcomes such as resistance to change, staff hostility and low morale, limited effectiveness of change initiatives, and project failure.^{7,8} Principles that accommodate the individual and organisational contexts are therefore essential.⁹⁻¹¹ It is also important to take a systemic approach, acknowledging that organisations are dynamic entities comprised of inter-related people, structures and processes. Any attempt to intervene in one part may affect all other aspects of the system. Systems may be stubbornly resistant to change ('inertia') or may make surprisingly rapid changes if the conditions are right.

Nickols¹² has written and lectured extensively on Change Management and offers the following three definitions for Change Management:

- a) The task of managing change. This can happen in two ways, either in a planned and proactively managed manner, or in a reactive manner as a knee-jerk response to a trigger over which the organisation or individual has little control.
- b) An area of professional practice.
- c) A body of knowledge. This consists of methods, tools and skills used to implement change. It includes the study of how and why organisations and people change, and the barriers to change. Change Management, in this context, is based on the concept and principles of General Systems Theory; which in turn draws from the fields of behaviour science, organisational psychology, organisational sociology and business management.

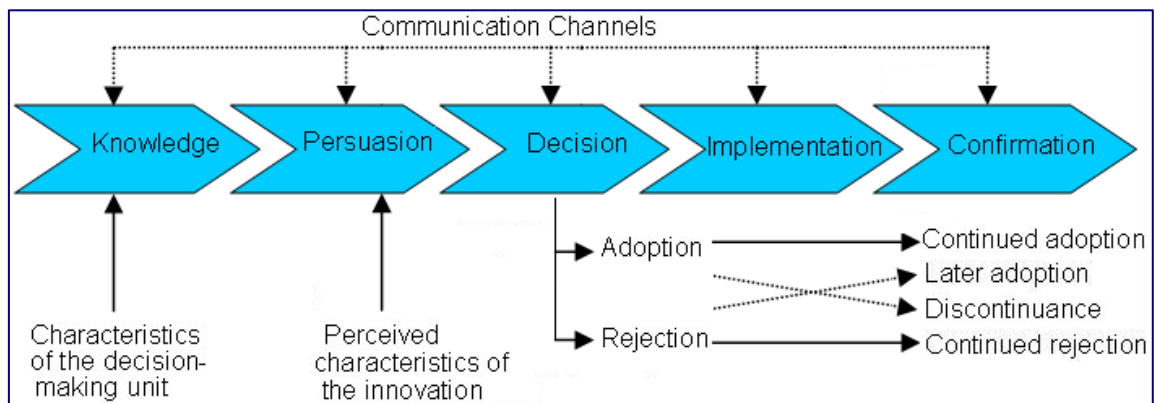
This document is concerned with the first and third definitions i.e. **Change Management methods** to bring about a **planned** change. The essence is that there is some future state to be realised, some current state to be left behind, and some structured organised process for getting from the one to the other. Newell and Simon¹³ suggest this can be accomplished via three goals: identify differences between the two states (transform goal), determine ways of eliminating these differences (reduce goal) and put into play operators that eliminate the differences (apply goal).

Models of Change Management/behaviour change

Diffusions of Innovation (DoI) Theory¹⁴

Rogers' theory is a well-known approach to the diffusion of an innovation. Clarke¹⁵ provides a useful synopsis of this theory. In essence DoI Theory seeks to describe the **patterns** and **mechanism** of behaviour change, in particular the adoption of a new idea or new use of an old idea. Rogers offered insights into the following aspects of change: steps in decision making, types of decisions, characteristics of an innovation that impact on its adoption, and characteristics of change adopters.

Steps in the decision making process are as follows:



From Health Care and Informatics Review Online Guest Editorial June 2004¹⁶

Innovation **decisions** may be:

- **Optional** (where the person or organisation has opportunity to adopt or reject the idea)
- **Collective** (where a decision is reached by consensus among the members of a system)
- **Authority-based** (where a decision is imposed by another person or organisation which possesses requisite power, status or technical expertise).

Characteristics that impact on adoption include:

- **Relative advantage** (the degree to which it is perceived to be better than what it supersedes)
- **Compatibility** (consistency with existing values, past experiences and needs)
- **Complexity** (difficulty of understanding and use)
- **Trialability** (the degree to which it can be experimented with on a limited basis)
- **Observability** (the visibility of its results).

Adopters of change are grouped into:

- Innovators (venturesome)
- Early adopters (respectable)
- Early majority (deliberate)
- Late majority (sceptical)
- Laggards (traditional).

It is assumed that diffusion flows automatically if these first two groups can demonstrate the benefits of the change

People with change roles are:

- Opinion leaders (have formal influence over others)
- Change agents (mediate between change agency and the social system)
- Change aides (complement the change agent, have more contact with the system).

Characteristics of innovators and early adopters are identified below.

- more years of education • higher social status • upward social mobility • greater rationality
- are in larger organisations • greater empathy • less dogmatism • greater intelligence
- deal better with abstractions • cope better with uncertainty and risk • higher aspirations
- more contact with other people • greater exposure to both mass media and interpersonal communications channels • engage in more active information seeking

The Tipping Point

Change is usually difficult, because Rogers' *early majority* are more conservative than the *early adopters*, being concerned rather than excited by risk. This group will not take up a change until they are assured that it is safe and fits within their known view of the world. In his book *The Tipping Point*, Gladwell¹⁷ draws on the work done by the psychologist Stanley Milgram on social networks. He states that any change is a social

epidemic; change occurs when the tipping point is reached, and small changes can bring about a big difference. There are three major themes in *The Tipping Point* – power brokers, the stickiness factor and context.

Power brokers are further categorised as Connectors, Mavens and Salesmen (sic). Connectors are those with *wide social circles*. They are the ‘hubs’ of the human social network and can be essential components in the spread of information. Mavens are *knowledgeable* people; they either already have a broad knowledge from which they can produce a synthesis, or they know where to find it. Salesmen are *charismatic* people with powerful negotiation skills. They exert ‘soft’ influence rather than forceful power.

The stickiness factor is something that pushes a system out of equilibrium, causing cascading change. An example is the fear of pandemic influenza and the impact this has had on infection control practices.

Finally, changes in the environment (the context or background) can produce a major change overall. An example of this is the impact that zero tolerance (brought in to combat minor crime) had on decreasing major crime in New York, due to the perception of increased vigilance. A further example is the decrease in neighbourhood crime rates by removing visual cues of petty crime such as graffiti and broken windows.

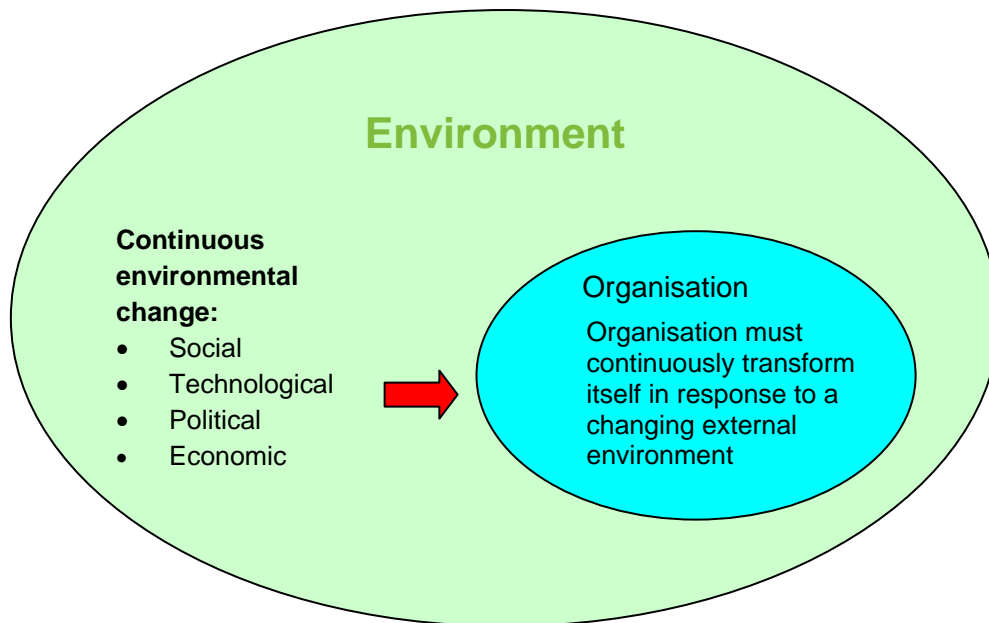
Force Field Analysis¹⁸

Force field analysis is a specialised method of weighing pros and cons. It is essentially a technique for looking at all the forces for and against a decision and then weighting these factors to decide whether a plan is worth implementing. Any status quo is a balance of the current forces acting on the system. Change will only occur if that balance is altered by adding new forces, strengthening the forces for change, or reducing forces hindering change.

Where a decision is made to carry out a plan, Force Field Analysis helps to identify changes that could improve it. Tools to perform this analysis are readily available.¹⁹

The Learning Organisation²⁰⁻²²

Success within modern organisations has come from breaking problems down into their constituent parts, and getting experts or specialists to tackle them. Senge²³ wrote that this results in fragmentation, competition and reactivity, which in turn contribute to frozen patterns of thinking, learning disability and organisational dysfunction. The concept of a ‘learning organisation’ originated in the 1950s, but is enjoying a recent resurgence in large businesses. The ‘learning organisation’ has been defined as ‘an organisation that facilitates the learning of all its members and continuously transforms itself’.¹⁹ More popularly, it has become a metaphor for organisational change, based on the principles of learning, trusting relations and humanistic work organisation. It is an attempt to change the dysfunctional modus operandi of modern organisations; its importance is in promoting an atmosphere of continual reflection and action. Change Management for both planned and unplanned changes is easier in such an organisation.



The Learning Organisation Imperative (From SA Department of Human Services (DHS) Change Management Draft Framework¹⁹)

According to Senge, there are five dimensions or 'disciplines' that contribute to dynamism within a learning organisation. These are:

- **Systems thinking** - a conceptual framework focusing on interrelationships rather than linear cause-effect chains, and on processes of change rather than snapshots.
- **Personal mastery** - continually clarifying and deepening our personal vision, focusing our energies, developing patience and seeing reality objectively.
- **Mental models** - deeply ingrained assumptions, generalisations, or even pictures or images that influence how we understand the world and how we take action. The discipline of working with mental models starts with turning the mirror inward; learning to unearth our internal pictures of the world, to bring them to the surface and hold them rigorously to scrutiny. It also includes the ability to carry on 'learningful' conversations that balance inquiry and advocacy, where people effectively expose their own thinking and make that thinking open to the influence of others.
- **Shared vision** - involves the skills of unearthing shared 'pictures of the future' that foster genuine commitment and enrolment rather than compliance.
- **Team learning** - starts with 'dialogue', the capacity of members of a team to suspend assumptions and enter into a genuine 'thinking together'. It also involves learning how to recognise the patterns of interaction that undermine learning. The patterns of defensiveness are often deeply engrained in how a team operates. If unrecognised, they undermine learning. If recognised and surfaced creatively, they can accelerate learning.

Kelleher²⁰ proposes that there should be three levels of learning within a learning organisation to stimulate innovation, with these being individual, team and organisational.

Changing clinician behaviour – the evidence

Barriers to evidence-based practice²⁴

Research has identified barriers to evidence-based practice to be:

- Structural (financial disincentives)
- Organisational (lack of facilities or equipment)
- Peer group (local standards of care not in line with desired practice)
- Professional (knowledge, attitudes, skills)
- Professional-patient interactions (problems with information processing)
- Patient (knowledge, attitudes, skills).

Effectiveness of knowledge translation activities

There have been many strategies to translate evidence into clinical practice. These include passive dissemination methods such as mail-outs and active engagement in the form of educational outreach and reminders, as well as multifaceted interventions targeting the barriers to change. The success of these strategies has been variable. A few systematic reviews have been conducted recently on the studies of implementation effectiveness. Grol et al⁵ and Grimshaw et al²⁴ concluded:

- Passive dissemination is generally ineffective
- Active approaches are more likely to be effective but are also more costly
- Interventions based on addressing barriers to change are more likely to be effective
- Multifaceted interventions targeting different barriers to change are more likely to succeed than single interventions.

Even more recently, Grimshaw et al²⁴ conducted another review on the basis that the above inferences were based on faulty systematic review methodology. The striking conclusions of this review of 309 comparisons of interventions are:

- Overall studies were methodologically poor
- Only 27% of interventions used theories or psychological constructs
- Reminders were consistently effective
- Educational outreach had only modest effects
- Dissemination of educational material had similar effectiveness to more intense interventions
- Multifaceted interventions were not more effective than single interventions
- However, they also thought that there could be problems with these interpretations due to confounding results.

In summary, the evidence about effective interventions is imperfect.

Categorising Change Management Strategies

Nickols²⁵ offers four strategies in Change Management; the first three of which are based on Chin and Benne's²⁶ work. He suggests that for any initiative, it is useful to consider a mix of strategies and tactics. Further details are provided in Appendix B.

Strategy	Description	Selection Factors
Empirical-Rational	<p>People are <i>rational</i> and will follow their self-interest - once it is revealed to them. Successful change is based on the communication of information and the proffering of incentives.</p> <p>People can be <i>persuaded</i> AND <i>'bought'</i> ('carrot' side of carrot-and-stick).</p>	<p>People will balance incentives and risks.</p> <p>Difficult to deploy if incentives are modest, especially if the status quo is good.</p> <p>Can use 'converts' to influence others.</p>
Normative-Reeducative	<p>People are <i>social</i> beings and will adhere to cultural norms and values. Successful change is based on redefining and reinterpreting existing norms and values, and developing commitments to new ones.</p> <p>People like to <i>'go with the flow'</i>.</p>	<p>Strategy here is to define how to establish 'the flow'.</p> <p>Focus is on culture, as this greatly influences people's behaviour.</p> <p>Charismatic and dynamic leadership is the key.</p> <p>Culture is difficult to change quickly; this is not a strategy in a turnaround situation with short timeframes.</p>
Power-Coercive	<p>People are basically compliant and will generally do what they are told or can be made to do. Successful change is based on the exercise of authority and the imposition of sanctions ('stick' side of carrot-and-stick).</p>	<p>Two factors influence choice of this strategy: time and seriousness of threat faced.</p> <p>Culture is important: if based on benign bureaucracy, people will go along even with autocracy. If culture is autonomous and entrepreneurial, people will resist.</p>
Environmental-Adaptive	<p>People oppose loss and disruption but they <i>adapt</i> readily to new circumstances. Change is based on building a new organisation and gradually transferring people from the old one to the new one.</p> <p>People are adaptive: hence instead of trying to transform existing organisations, it is quicker to create a new one and move people across.</p>	<p>Major consideration is extent of change.</p> <p>Strategy is best suited to radical transformation. Timeframe is not a factor. Need appropriate people to 'seed' the new structure, and need to leave behind 'bad apples' (people who cannot be allowed into the new structure).</p>

International experience

United States

There have been many attempts to introduce health information technology in the United States with results ranging from rejection by clinical staff to acceptance and improved outcomes. The US trails other countries in the use of electronic medical records (EMR), the rate being 20-25% for hospitals and 15-20% for physicians offices.^{27, 28} A case study of EMR implementation in Kaiser Permanente by Scott et al showed that the EMR was withdrawn due to the system being distant from clinical staff needs, reduction in productivity, substantial problems in software design and development, and an ensuing climate of conflict.²⁹ The Medicare Modernisation Act of 2003 was meant to encourage electronic prescribing, but has had modest impact.³⁰

Barriers to adoption of health information technology include high costs, lack of certification and standardization, concerns about privacy and a disconnect between who pays for EMR systems and who profits from them.^{27, 31} The attitude to cost appears to be based solely on perception, as a study costing a United States National Health Information Network found it was not prohibitively expensive.³²

There are pockets of successful adoption such as 'Disease Manager Plus', a decision support system with an archival record keeping function.³³ This system has high clinician acceptance and improved patient outcomes, most likely because it has been developed during 30 years of collaboration with clinicians, which commenced when paper-based records were re-organised. In the 1990s, the Community Health Information Network (CHIN) experiment which sought to share information electronically at a regional multi-organisational level was unsuccessful. The reasons included lack of a common shared goal, conflicting competition, poor trust, control and ownership concerns, confusion over finance, and problems with data sharing. The Local Health Information Infrastructure (LHII) initiatives were created in response to this, and have been successful due to partners feeling valued, community support, a shared vision, strong clinician involvement, strong leadership, involvement of the health department, sustainable funding, and effective change management strategies.^{34, 35}

The overall uptake of health care information technology in the United States remains limited, particularly in the areas that promote safety, quality and better community care.³⁶ The haphazard nature of health information technology (HIT) adoption may be due to lack of leadership and investment at a federal level.³⁷⁻⁴²

United Kingdom

98% of general practices in the United Kingdom were computerised in 2003, with most practices prescribing electronically. In stark contrast to this impressive statistic, only 0.02% of general practitioners (GPs) had broadband Internet connection. In 1998 the National Health Service set a target for all NHS trusts to have electronic patient records by 2005. By April 2002, only 3% of NHS trusts were on course to meet the target.

Reasons provided by the Wanless report for this meagre performance were the inadequate setting of central IT standards, and IT funds being used to relieve other financial pressures.⁴³

A new national program for information technology (NPfIT) was established in October 2002.⁴⁴ Said to be the world's biggest civil IT program, it has the following aims: electronic patient records to be implemented by all trusts by the end of 2007 with connection of 30,000 GPs to 300 hospitals, providing secure and audited access to these records by authorised health professionals. The program also plans for patients to have online access to their records. The involvement of GPs is seen to be vital: guidelines have been developed to assist them in areas of governance, policy, accreditation, and migration towards a paperless practice.⁴⁵ In three years of the NPfIT, there have been very significant cost blowouts and implementation delays. A study of four NHS trusts revealed problems associated with unrealistic timelines, trust, concerns over short-term loss of electronic functionality, and poor morale.⁸ The authors concluded that appropriate change management strategies had not been used, and recommended that this was a priority.

Canada

Health information technology in Canada is at an earlier stage of development. Approximately 70% of general practices used computers for electronic billing in 2000. Only 12% of GPs were using an electronic patient management system for complete medical records, although 57% of GPs actually had such systems (but they were used mostly for administrative purposes).⁴⁶ The Canadian health system has unique challenges due to a highly decentralised system of health financing and accountability, and a significant proportion of the population being distributed sparsely over 10 million square kilometres. The health system is valued by the population above any other social program, and health IT was one of several solutions to improve its functioning. Canada Health Infoway, jointly funded by federal, provincial and territorial governments, was set up to accelerate and implement e-Health information systems.⁴⁷ In addition, specific provincial initiatives such as the Alberta Physician Office System Program and the Ontario Family Health Network ePhysician Project were established. Alberta now leads the country in health IT adoption, with 53% of practising physicians using it. More than 80% of these are currently using or converting to electronic medical records.⁴⁸

New Zealand

New Zealand is described as having one of the most technology enabled and integrated health sectors in the world.⁴⁹ It is the only country in the world with a national health index, a unique national identifier that enables disparate patient management systems to share information. The federal government is working strategically and collaboratively towards electronic health records and a fully integrated health information system. The national framework for achieving this clearly delineates local, regional and national roles.⁵⁰ New Zealand is also engaged in exciting innovations and projects such as:

- Use of mobile phone SMS (short message service) as a support tool in chronic disease management.⁵¹
- The Current Consumer View (CCV) project which allows mental health providers to identify whether a patient is currently accessing services from another service. The purpose of this project is to facilitate timely and coordinated care.⁵²

Change Management in General Practice

Most Change Management literature targets organisations that may be large and complex, but which have defined lines of authority and accountability. The application of Change Management within the general practice setting requires special consideration due to its structural and cultural complexity and variation.

Medicine in general attracts individuals who are autonomous, adept at problem solving, and intellectually curious and questioning. Postgraduate training in general practice commenced about twenty years ago. Those who became GPs prior to this were often individualists who preferred to work autonomously. Consequently this discipline has traditionally been suspicious of authority, governmental or otherwise.

Many practices are solo or small partnerships, while others function as small organisations. In South Australia for example, there are approximately 700 privately owned practices. A few of these are owned by larger organisations (corporatised general practice), but most are small businesses in the form of solo practice, partnerships or incorporated bodies with an average of 2.5 GPs per practice. Additional factors contribute to a particularly heterogenous GP workforce.⁵³ These factors are age, feminisation with the consequent increase in part-time practice, decrease in the number of GPs owning a practice, rural and remote practice with its own vulnerability, increase in GP specialisation (e.g. sports medicine, skin clinics) and the increase in overseas trained doctors who have a wide variation in clinical experience and competence. These factors add a challenge to any form of Change Management directed at general practice, with authoritarian or externally imposed change likely to meet with considerable resistance.

The key to successful Change Management with GPs is engagement. The Divisions of General Practice Network is a useful mechanism for achieving engagement. In the 12 years of its existence, this Network has successfully engaged with individual GPs, professional GP organisations, Federal and State health authorities, and non-government organisations. It has actively promoted health system reform by enhancing and supporting GPs' skills (including use of IT), encouraging partnerships with allied health professionals, and assisting in the implementation of improved disease prevention and management programs, with a focus on improving population health outcomes.

The e-Health agenda

The compelling reasons for computerisation in industries such as banking and finance have had a slower impact on the health industry. The reasons for this include the complexity of the medical workforce as outlined above, which tends to view any sweeping change with suspicion. It is common knowledge that the economic principles which underpin other industry ('the market') fail spectacularly in health.⁵⁴

Solutions developed for other industries have been ill advisedly transposed as off-the-shelf products for health. Their usefulness within health in increasing workplace efficiency, achieving cost savings or obvious improvements in patient outcomes has been either absent or limited. Coeira reminds us that introduction of technology also has social consequences, and conversely the utility of technology is socially shaped.⁵⁵ This interaction cannot be ignored.

For example, a computer on a GP's desk can alter the GP-patient communications by reducing eye contact or, by distracting the GP, can lead to delayed responses to the patient. Patients are generally comfortable with the presence of computers. It is clinicians who have greater difficulty as it changes an interaction between individuals into an interaction between an individual and a 'system'. This perception is considered an important reason why many computerised medical record systems are rejected by clinicians.⁵⁶ On the other hand, peers and local opinion leaders can positively influence the rate of technology uptake.

The imperatives for change

Despite considerable difficulties, making the change to the integrated use of information technology/information management (IT/IM) in health is fundamentally essential for several reasons.

Increased health care burden

The Australian population continues to age with the additional projected impact of higher levels of obesity and reduced physical activity. Current predictions are for a substantial increase in the incidence and prevalence of diabetes, cardiovascular disease and chronic conditions. The Australian National Chronic Disease Strategy⁵⁷ was launched in November 2005, for the specific purpose of managing and improving chronic disease prevention and care in the Australian population. General practice has a key role to play in this strategy, and registers and reminder/recall systems are an essential feature.⁵⁸ Other e-Health possibilities for chronic disease management include shared electronic health records, telemedicine videophone consultations, and patient-managed home telemedicine systems. There is early evidence that the use of this technology can reduce length of hospital stay or prevent readmission.⁵⁹

Cost containment

Advances in medical technology and treatment, the greater use of diagnostic tests, and a shift towards a more litigious environment are acknowledged causes of rising health care costs. A less well-known reason is systemic waste e.g. large numbers of tests being repeated because previous results are not available in a timely manner. Costs of health care are rising faster than the Consumer Price Index: costs of acute care by more than 8% per annum; premiums for private health insurance have been increasing at 7% per annum; and some specific costs within professional practice such as medical indemnity insurance have increased at an even greater rate.

Electronic results can assist with cost containment due to timeliness i.e. quicker transmission and ability to be shared between health care providers. The South

Australian Open Architecture Clinical Information System (Oacis) is a data linkage system which is an example of shared diagnostic tests and treatment records within the public hospital system.⁶⁰ Linking the National Prescribing Service's evidence-based prescribing messages to GP medical software is another example which also demonstrates cost benefits.⁶¹ Studies from the US indicate that effective Electronic Medical Record implementation and networking could result in significant savings by improving health care efficiency and safety. These savings could be doubled through using e-Health to support chronic disease prevention and management.²⁷

Quality and safety

Preventable mistakes identified by quality improvement studies include medication errors, patient identity error, some adverse events and failure of patient follow up. These could be significantly reduced if accessible, interoperable and timely health records were available to all those involved in patient care. Electronic prescribing has already demonstrated improvements in safety due to increased legibility.⁶¹

The most common cause of adverse events in general practice is communication failure. In fact, communication errors cause twice as many deaths as inadequate clinical skills.⁶² Examples of communication errors include delay or failure to contact patients regarding test results, referrals or follow up. These have resulted in litigation for the adverse outcomes from delay in diagnosis or treatment. Another 'hot spot' for communication failure is when patient care is transferred from one health service to another. Tragically, patients discharged from a psychiatric inpatient unit have an increased risk of suicide within the first 10 days after discharge. Suicides have also occurred after discharge without follow-up planning following presentation to an emergency department with a mental health problem. An electronic data linkage and communication system would assist in overcoming such problems.

The e-patient

Those who seek online health guidance for themselves or others are described as 'e-patients'. US data reveals that 50% of American adults use the Internet for health information.^{63, 64} These e-patients often find online medical information and guidance more complete and useful than what is provided by their doctors. Medical online support groups have become an important health care resource. Increasingly, e-patients consider net friendliness of clinicians and providers to be an important aspect of health care quality. Consequently, medical constructs and attitudes towards e-Health must change in line with the changing expectations and experience of the population.

Best practice

Knowledge translation from evidence-based best practice into clinical care has not met with much success. Care also varies due to lack of access such as in remote locations, in mental health and for homeless people. E-Health provides the opportunity to improve this situation through tools such as web-based consultations, virtual patient records and clinical decision support systems.^{65, 66} It also facilitates data collection and aggregation. The National Primary Care Collaboratives⁶⁷ is an example in which such data is being used for audit and consequent practice change in order to improve health outcomes. In the UK, an informal email network CHAIN (Contact, Help, Advice and Information Network for Effective Health Care) was established for health care professionals interested in evidence-based care. This was qualitatively evaluated in 2002–2003, and was found to be helpful in four ways: providing relevant and useful information, providing access to information and people with expertise, enabling collaboration across boundaries, and enabling participation in networking at various levels.⁶⁸

Health promotion and population health outcomes

Health promotion and disease prevention approaches are progressively gaining importance and GPs are being increasingly asked to engage in such approaches. Activities include assisting patients to change or manage behaviour, a task that GPs have traditionally found time-consuming and taxing.

One related and interesting use of the Internet is the e-Health Behaviour Management Model.⁶⁹ Preliminary results for three demonstration projects in the areas of parent-child nutrition, adult asthma management and HIV prevention showed promising results.

Divisions of General Practice are involved already in population health activities such as assessing population needs and delivering appropriate programs. Techniques that would be valuable to the Divisions Network include small area analysis, a popular and useful technique for health services' research including utilisation and resource allocation. This could be coupled with Geographical Information System (GIS) technology which could provide required data.

Factors hindering change

Workforce shortages

The past five years have seen an increasing GP workforce shortage in Australia.⁵³ Initially confined to regional and rural areas, it now includes outer metropolitan areas. The shortage will become worse due to ageing of the general practice workforce, with many GPs planning to retire in the next five to ten years. A member survey conducted by the Adelaide Northern Division of General Practice showed that 40% of GPs were intending to retire in the next four years. A disastrous and critical shortage in this region has been averted only by overseas recruitment.

Increasing workload

GPs are struggling to meet an increased workload burden.⁵³ Contributing to greater clinical responsibilities are factors such as the aging population with a consequently higher proportion of complex and chronic illness; changes in public hospital practices with shorter hospital stay and early discharge; an information overload, and higher societal expectations. Non-clinical workload burden is in the form of reporting requirements and teaching responsibilities.

Workforce shortage and increased workload have caused GPs to become exceedingly busy. Many urban practices are unable to accommodate new patients and a significant delay for a non-urgent appointment is common. Direct patient contact occupies a very high percentage of time, with paperwork done largely after hours. There is little time for business planning or quality improvement initiatives.

Economic disincentives

General practices are private businesses. In the past when a GP left or retired, it was relatively easy to employ a replacement or for the practice to be sold with added goodwill. The workforce shortage makes business expansion or sustainability problematic. Modern lifestyle changes with a generational preference for greater flexibility and work/life balance mean that fewer younger GPs are interested in practice investment or ownership.⁵³ The increasing complexity of practice management due to accreditation, vocational registration and changing reporting requirements is another deterrent. Consequently, practices have lost value as businesses and their viability as going concerns is in doubt. There are still large numbers of solo practices, up to 50% in some Divisions of General Practice. When these GPs retire, most of their practices will close with them. The net result is a financial disincentive for significant capital investment in infrastructure.

Even the corporate medical chains that have been buying general practices have not bought the business, but have purchased the services of GPs on a contract basis.

Other factors

Many GPs presently have change fatigue, and perceive themselves as victims rather than agents of change. There is also a lack of self-confidence in computer skills and a distrust of this technology by many older GPs.⁴⁶

The HealthConnect trials⁷⁰ identified the following problems:

- Lack of immediate, realisable benefits to health care providers
- Unrealistic timelines for the introduction of a shared electronic health record
- Lack of progress in critical issues such as the consent model, access model, input of initial data, privacy and security, indemnity and connection methods
- Pilot versions showed reduced clinician productivity and reduced participation over time. Enthusiasm and documented benefits from the pilots were very patchy.

Factors assisting change

High level support

A major recommendation of the *2003 South Australian Generational Health Review*⁷¹ was the rebalancing of the health care system towards primary health care and services closer to the home. The Department of Health has recognised the integral role of general practice in this endeavour and the necessity of working with this discipline to improve health outcomes.

The SA Chronic Disease Management framework was produced by the Department of Health and has had a significant impact on the community health sector by highlighting the need to develop chronic disease systems of care. The Department also funded SA Divisions of General Practice Inc (SADI) to establish the General Practice Registry, a central electronic repository of GPs' work and contact details, for the specific purpose of transmitting separation summaries and health alerts.⁷² The Registry's usefulness has led to its expansion by SADI into a Health Provider Registry.

The South Australian Government-designated health regions have produced policy and practical support for the development of Primary Health Care Networks. This policy includes explicit acknowledgement of the importance of general practice and the need for Change Management. For example, the Central Northern Adelaide Health Service (CNAHS) has funded a program for general practice nurses to enable them to become change agents within their practices, and also funded a data management strategy to improve the quality of data on diabetic patients within practices.

Developments in general practice

There is a high degree of computerisation in general practice due to previous Australian Government incentives and Divisions of General Practice programs. A total of 86% of general practices had at least one computer in 2001, with a projected increase to 95% by 2003.⁴⁶ These rates are higher than for private specialists or allied health workers.

Among general practices, there are a number of early adopters in South Australia who support connectivity and Electronic Health Records (EHRs), and who are setting up small-scale examples of practical implementation across the State.

Divisions of General Practice have enabled GPs to connect with each other, gain experience in program and organisational management, link with the rest of the health care system, participate in policy development, build new health care delivery structures, and envision the future of general practice. The Divisions Network is pursuing an integrated health system that accommodates the patient care pathway. For example, SA Divisions of General Practice Inc (SADI) is coordinating a state wide project in suicide prevention, one component of which is improving referrals so that people at risk of suicide do not get lost by the health system during transfer of care. A prerequisite for improving these referrals is an effective linkage system using electronic referrals.

Examples of successful Change Management in general practice

- The single most noticeable change has been computerisation and the use of electronic prescribing, to the point where handwritten scripts now look outmoded. A Practice Incentive Payment, and extensive support from the Divisions of General Practice in providing practical education and a helpdesk function were instrumental in this change.
- Immunisation is another area of success. Childhood immunisation rates have markedly increased. General practice is now administering and coping well with the majority of immunisation in the community. In South Australia, GPs provide 85% of all immunisation. This increased percentage occurred due to financial incentives to general practice combined with an access incentive to parents: proof of either vaccination or conscientious objection is required before school entry. Reporting of immunisation has improved due to the simplicity of electronic reporting and a centralised register run by the Australian Government.
- GP obstetric shared care. This program is an example in which a clinical governance model was introduced and accepted. Two successful pilot projects over three years demonstrated that this area was important to GPs and their patients, and served as precursors for the state wide program now in operation. State wide protocols were adopted, and collaboration and cooperation between the State Department of Health, the metropolitan public hospitals and the Divisions Network were also key factors for success.
- Mental health. In the area of mental health, there has been a remarkable cultural change. GP needs surveys consistently identified this as an area of concern but what is now acknowledged is that mental health is part of core business. Change occurred due to considerable financial commitment by Australian and State governments, and the pharmaceutical industry, which led to the development and successful marketing of a comprehensively integrated program of education, service development and improved access. The effort was also boosted by the role of Mr Jeff Kennett, a high profile former Victorian Premier, who has actively worked to de-stigmatise mental illness in the general population.
- Care planning is an interesting example of change. The Australian Government first introduced the Enhanced Primary Care Medicare item number for care planning in 1999. The uptake was low even though the rebate was substantially more than for consultation items. There is anecdotal evidence that this was due mainly to two reasons: GPs not being convinced of the value to patients, and other health professionals not being aware of GP care plans and hence not working in partnership. The situation is now quite different. The Australian Government has made care planning rebates administratively easier for GPs to access. The Primary Health Care Networks in South Australia offer general practice a functioning organisation with which to interact, thus addressing the second reason above. Of particular assistance within these networks are the data management strategies, the provision of allied health workers to work with general practice, and the chronic disease management approach that has documented achievable improvement in health outcomes.

The e-Health agenda in general practice

It remains possible but increasingly difficult, to operate a viable general practice without a computer. Not only is general practice now largely computerised, but there has been increasing though variable adoption of electronic health records with the advent of medical software programs specifically designed for general practice. The number of older GPs who lack computer skills and confidence is in decline, and e-Health will become more established with younger GPs who are familiar with and accustomed to using this technology. Handheld computers have proved useful in building GPs' confidence and familiarity with other information technology and e-Health initiatives, and in providing point of care support that helps improve patient care.⁷³ In addition, other advances such as handwriting recognition and voice recognition software will be invaluable.

However, there are still legitimate concerns in regard to privacy and security of e-Health. These concerns emphasise the importance of seeking robust systems and early adopters, and actively marketing the change with support from professional organisations within the Change Management strategy. Anecdotal evidence suggests that a strong driver for change within general practice has been the recent Australian Government announcement linking continued Health IT funding to adoption of Electronic Medical Records within general practice.

Concerns around equity - remote and regional areas

No e-Health initiative is possible without Internet connectivity and access. Remote and regional populations and the GPs who provide services to them, are in dire need of support as they are affected by what has become known as the 'Digital Divide'.⁷⁴ This term describes decreased access to information technology for minority groups, rural populations, and those with low socio-economic status. Any Change Management approach must consider equitable strategies addressing the 'Digital Divide'.

A cautionary word

Whilst e-Health can lead to many improvements, unwanted and potentially harmful outcomes are a distinct possibility. These can be due to:⁷⁵

- Systems problems e.g. lack of integration of all necessary information for decision making within a system; imperfect communications between different systems; and lack of security within and between systems. A British case study of electronic prescription safety identified several flaws leading to serious medication error.⁷⁶ Similar problems were identified in Australia⁶¹
- Inadequate user training
- Non-integration created by clinicians using electronic records for some functions and traditional paper records for others
- Incomplete data entry.

It needs to be remembered by health providers that technology is but a tool and over-reliance on it can lead to clinical complacency.

Change planners need to make e-Health/health IT terminology clear to change recipients. For example, there is confusion between the terms EMR (electronic medical record) and EHR (electronic health record), and these are, at times, used interchangeably. Most consider these to be distinctly different: that the EMR is restricted to documentation within a practice, and that the EHR is a 'connected' view of the patient within a health system. The EHR can therefore capture data external to the practice setting, providing a longitudinal record of patient care across all health providers.

The e-Health Change Management Strategy

This section details how to achieve greater uptake of e-Health in general practice.

Start with the basics

Vision

What is needed is a clear vision of what we want to achieve, what is the end point, and what is the additional functionality which we want to provide to the health system. In this way, clinicians can see how this will benefit them and their patients. It must be understood by everyone that e-Health technology is a tool to manage information and knowledge. It is important that the tool does not become the purpose.

Health economists recognise three essential facilitators of change: high-level buy in, adequate resources and a culture to support pro-active change.⁷⁷ The SA DHS Change Management Framework¹⁹ offers a similar trio in the form of **Value, Capacity** and **Support** (see Appendix A).

An ideal change process will have a high level of value, capacity and support. If any one of these areas has a deficiency, then it may be worth considering whether the change is feasible. For example, if the proposal for change is thought to be of high value and is widely supported but the capacity is not available, then change cannot occur unless greater resources are made available. Likewise if resources are available and the change is viewed as valuable, but the support is lacking, then change is unlikely to succeed without first garnering support.

Change Management can be supported by the Managed Health Networks grants available from the Australian Government. One example is the Virtual Private Network (VPN) funding which is intended to bring all Divisions of General Practice into a VPN to assist with meeting the demands of the Australian Government Department of Health and Ageing's planning and reporting framework. Smaller demonstration projects can succeed in seeding change if they are integrated into a broader Change Management strategy. If they are not integrated, these projects can languish with the knowledge then lost if the environment shifts and leaves them behind.

Have an agreed framework

The Draft Strategic Framework for Health Informatics in South Australia is an important document outlining details of the proposed changes. It has been approved by the SADI Informatics Advisory Committee, and is currently circulating within the Divisions Network. Such a joint consultative and development approach creates an environment of commitment and cooperation among those involved in the process.

Consider stakeholders

Divisions of General Practice Network

Apart from successful engagement of GPs in practice computerisation, the Divisions of General Practice Network is also accustomed to taking on a Change Management role. Involvement of this Network is critical for any broad-based change in general practice.

Special groups

Two special groups have been identified as presenting greater challenges for engagement:

- Aboriginal Medical Services and Aboriginal Community Controlled Health Organisations
- Corporatised general practices.

The GPs working in these practices have less control over their working environment and can be harder to engage because of the different governance and management structures of these organisations.

Consider current environment:

Health professionals who have been involved with previous HealthConnect initiatives have expressed some disillusionment when these initiatives have not delivered the anticipated outcomes. Therefore, whilst the vision may be long term, change agents need to be able to demonstrate short-term practical gains to keep the health professionals engaged in the process.

General practitioner interest is fuelled by changes associated with:

- Patient factors:
 - Is this better for the patient? (Improved quality of care and patient outcomes)
 - Are patients more appreciative? (Increased patient satisfaction)
- Personal factors:
 - Can this be done easily or without too much difficulty? (Ease of implementation)
 - Will this benefit me monetarily? (Financial gain)

If GPs can be assured on all of these components through the Change Management process, then the change is almost certain. If three components can be put into place, then change has a high likelihood of success. If only two components can be delivered, implementation is likely if the change is marketed well. If only one component is possible, then any change is very problematic even if that one incentive is financial. Financial gain alone is not a good motivator for change: there are many instances of GPs not taking up changes where financial gain is the only benefit. If increased income is combined with benefits for patients, a much greater uptake can be produced.

Implementation

Ground rules

The complexity of general practice culture and structure make it a chaotic environment over which neither the change agents nor the change recipients have authority. Hence a top-down or authoritative model will fail. Most clinicians agree that a system of clinical governance is needed: however there are only fragments of such a system at present and no broad agreement on how to proceed. In South Australia, the Clinical Senate potentially could take on part of this role, but there is no evidence yet that it has achieved in this area.

Select Change Management strategies

These strategies must be based on the theoretical constructs provided earlier in this document. As the evidence about the effectiveness of knowledge translation activities is equivocal, it is recommended that selection be based on an understanding of the local environment, and that the rationale for the choice be documented for future monitoring purposes.

Demonstrate immediate practical benefits at the practice level

Some examples of immediate practical benefits at the practice level are:

- The Practice Health Atlas developed by Adelaide Western General Practice Network (AWGPN) is able to show general practices the health and business benefits of understanding and using their own data.⁷⁸
- The AWGPN trial of electronic records at residential aged care facilities offers efficiencies to GPs who are working in residential aged care. This trial is the first step towards a managed network which has the potential to bring other value added services to practices, such as off-site electronic backup; central security and access management; software applications; voice over internet; and videoconferencing.
- The Health Provider Registry at SADI offers much faster delivery of separation summaries and health alerts, and an up-to-date database of medical practitioners and residential aged care facilities.

Monitoring and ongoing evaluation

Monitoring and evaluation must be part of any Change Management implementation. Short-term monitoring should include the degree to which health providers and patients have accepted health IT. Long-term evaluation should incorporate an assessment of effectiveness and cost-effectiveness of e-Health initiatives.

Conclusions

Many of the elements required are now in place to produce a successful adoption of e-Health in general practice and primary care in South Australia. The next step forward should be a program of change which is consultative, collaborative, well-planned, well-executed, well-evaluated and based on sound theoretical constructs.

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Appendix A – Excerpts from DHS Change Management Draft Framework 2003

1 Preparing for change - Capacity, Support and Values

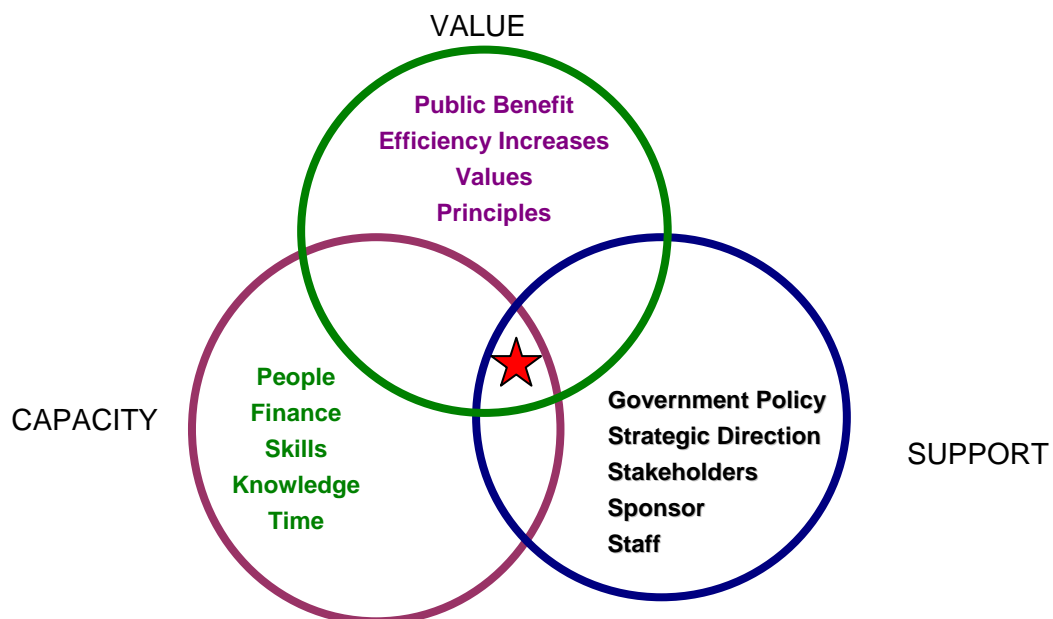
In preparing for change there are three areas that are useful to consider:

- Capacity
- Support
- Value.

Capacity is a natural first question, asking if there are resources available in the organisation to carry out the change. Capacity includes the people, resources and abilities to implement the change and maintain system resources.

Support looks at whether staff, the department and government will support the changes. It assesses whether they think the change is a good thing, support its impact and if they are prepared to support its implementation.

The **value** area of consideration deals with making an assessment on the importance stakeholders place on the proposed change. This assessment, while informed by various groups, requires the judgement of the sponsor through evaluation processes on the benefits to the organisation and public.



2. List of Models and Tools

Planning for Change

1. Preparing for Change- Capacity, Support and Values
2. Change Management - Project Management Flow Chart
3. Critical Elements of Change Management

Activities to assist in decision making

4. Cause and Effect Analysis; 5 Whys and Fishbone - understanding areas that impact on problems/areas requiring change
5. SWOT - Strengths, Weaknesses, Opportunities and Threats
6. Force Field Analysis - analysing change strategies
7. Stakeholder Analysis
8. 7S Model - analysis of change activities across a whole system

System wide approaches

9. Service Excellence Framework - Quality Management as a system wide model for change
10. Action Learning Model - a model for change at the business unit level
11. Learning Organisation – a system wide model for change

Appendix B - Factors in Selecting A Change Strategy (from Nickols Change Management 101)

Generally speaking, there is no single change strategy. You can adopt a general strategy or what is called a 'grand strategy' but, for any given initiative, you are best served by some mix of strategies.

Which of the preceding strategies to use in your mix of strategies is a decision affected by a number of factors. Some of the more important ones follow.

- Degree of Resistance. Strong resistance argues for a coupling of power-coercive and environmental-adaptive strategies. Weak resistance or concurrence argues for a combination of empirical-rational and normative-reeducative strategies.
- Target Population. Large populations argue for a mix of all four strategies, something for everyone so to speak.
- The Stakes. High stakes argue for a mix of all four strategies. When the stakes are high, nothing can be left to chance.
- The Time Frame. Short time frames argue for a power-coercive strategy. Longer time frames argue for a mix of empirical-rational, normative-reeducative, and environmental-adaptive strategies.
- Expertise. Having available adequate expertise for making change argues for some mix of the strategies outlined above. Not having it available argues for reliance on the power-coercive strategy.
- Dependency. This is a classic double-edged sword. If the organisation is dependent on its people, management's ability to command or demand is limited. Conversely, if people are dependent upon the organisation, their ability to oppose or resist is limited. (Mutual dependency almost always signals a requirement for some level of negotiation.)



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