



Clinical Leadership

The role of clinicians in eHealth reform

WHITE PAPER
Dr Simon Kos
Clinical Advocate
Microsoft Australia

James Kavanagh
eHealth Architect
Microsoft Australia



Executive Summary

Healthcare reform challenges every member of the clinical community to become a leader in delivering better, safer care. But do our clinicians really have the tools they need to be successful? Are they equipped with the resources, technologies and capabilities to organise care around the needs of patients, to connect and collaborate with care teams, and to make the best decisions?

Our health system is strained to breaking point, and large-scale change is underway to ensure that it is sustainable for the future. Clinical leadership is central to ensuring that today's health reform is a success. It demands the active participation of clinicians to improve the quality and safety of healthcare and to proactively redesign the pathways of care that are followed in their organisation.

Technology is a key enabler of this modernisation and reform journey. When clinicians are equipped with the right tools to be effective clinical leaders, both providers and patients will benefit from the improvements in quality and safety of care.

This paper is written for clinicians and health managers and is intended to create awareness of:

- The importance of clinical involvement in eHealth reform.
- Barriers to clinician participation in eHealth.
- Relevant technologies that support clinical leadership.

It also aims to examine practical ways in which technology can be used to enable clinical leadership at various levels:

- Individuals managing their ongoing learning and applying new evidence to the point of care.
- Care teams measuring quality and promoting effective communications.
- Organisations managing the complexity of service delivery.
- Professional bodies fostering a community through teleconferencing.

Contents

Executive summary	3
What is clinical leadership?	4
The clinical leadership challenge.	6
Models and strategies for clinical leadership	8
How technology enables clinical leadership.	12
Microsoft platform for clinical leadership.	20
Referenced works and bibliography.	22

What is clinical leadership?



Clinical leadership is about clinicians advancing the quality and safety of care through innovation and improvement – both in their organisational processes and their individual care practices. It is a philosophy based on the premise that because clinicians actually deliver care, they are the best positioned to evaluate its quality and guide improvement.

Clinical leadership applies to any direct provider of patient care, including doctors, nurses, allied health professionals, clinical pharmacists and paramedics. No matter where they operate in the healthcare system, clinical leaders are those who are able to critically appraise the care process with respect to outcomes. Not only do they ask: “Are we doing things right?”, they also consider the more fundamental question: “Are we doing the right things?”

The urgent need for strong clinical leadership today

Historically, healthcare has been advanced by the disruptive influence of pioneers like Hippocrates, Florence Nightingale and Kurt Semm. Today there is need for a more programmatic approach to clinical leadership, because our ailing healthcare system is in urgent need of reform. The Australian healthcare system is strained by rising costs, increased demand for healthcare services and workforce shortages. The success of our healthcare system in treating infectious disease, the changing social and economic environment, modern lifestyles and an aging population have dramatically shifted the burden of care from acute conditions to chronic disease. Chronic conditions such as some cancers, diabetes, cardiovascular disease and asthma now account for some 80 percent of the total burden of disease (NHAPC, 2006).

Caring for patients with chronic conditions requires a greater level of co-ordination between acute and primary care health services, with a complex network of specialists, diagnostic and pharmaceutical services needing to be brought together in support of the long-term needs of the patient. Managing and delivering this care is costly, currently accounting for some 9.8 percent of Australian GDP, but even this is forecast to nearly double by 2040 (Australian Government, The Treasury, 2007).

These pressures are pushing our health services and health professionals to their limits, and the response has been a set of sweeping reforms proposed by State and Federal Governments that all have one fundamental common element: they call on clinicians to lead and guide the future of our health service to become more patient-centric and, in the process, better, safer and more efficient.

Clinical leadership within the Australian health reform agenda

In 2009, the National Health and Hospitals Reform Commission outlined a vision for a sustainable, responsive and high-quality healthcare system that would deliver

equity of care for all Australians. To achieve this, it focused on tackling better care for Aboriginal and Torres Strait Islanders, improved dental care services and better mental health. It underlined this focus with plans for national access targets for timely access to care. It further described how the healthcare system needs to be redesigned for more effective early intervention. Most significantly, it called for clinical leadership – for every member of the clinical community and the broader community to take responsibility for our own role in achieving better healthcare services. It described an ‘agile, self-improving health system’ that would become sustainable in the long term by building stronger consumer participation and delivering smart use of data, information and communications to the clinical workforce in order to sustain knowledge-led continuous improvement. The reform of healthcare governance processes was seen as an essential enabler of this change, including the increased participation of clinicians in executive decision-making processes (NHHRC, 2009).

Federal Budget Measures (Spend, \$m)	Description	2009–2010	2010–2011	2011–2012	2012–2013	2013–2014	Total
Sustainable Hospital Funding	Emergency department, elective surgery, sub-acute beds, flexible funding, activity-based funding, Independent Hospital Pricing Authority (IHPA)	300.1	882.9	708.2	791.6	954.6	3,637.4
GP and Primary Health Care	Co-ordinated diabetes care, improved primary health care infrastructure, Medicare Locals and after-hours care	0	76.4	259.3	458.8	426.7	1,221.2
Aged Care	Improving access to GP and primary care, viability of community care providers, one-stop shops, consumer protection	0.2	199.5	153.2	114.2	65.9	533
Mental Health	Youth-friendly services, early psychosis services, extra mental health nurses, care packages for severe mental illness	0.1	19.6	39	32.6	32	123.3
National Standards and Performance	Australian Commission on Safety and Quality in Health Care (ACSQHC), National Performance Authority (NPA), lead clinicians groups	0	34.8	47.4	57.4	63.3	202.9
Workforce	Training for clinicians, rural locum schemes, nursing careers, support for practice nurses	0	73.4	200.1	379.3	516.8	1,169.6
Prevention	National binge drinking, plain packaging		10.8	12.8	14.5	14.4	52.5
eHealth	Person-controlled electronic health record		185.6	281.2			466.8
Telehealth	\$392.3m over four years to support Medicare rebates and incentives for GPs and specialists to deliver telehealth consultations	0	3	98.1	98.1	98.1	297.3
Total							7,704

In April 2010, the Council of Australian Governments reached an agreement on a health reform program with the establishment of a National Health and Hospitals Network. An intent to reform the governance of the health system was fundamental to this agreement, which gave a greater voice in decision-making to clinical leaders within Local Hospital Networks. As these are implemented across the country, the onus is on clinicians to make the healthcare system work for their patients.

In May 2010, the Federal Government announced a two-year investment of \$466.8 million to support the National Health and Hospitals Network with a Personally Controlled Electronic Health Record. In August 2010, the Federal Government budgeted \$392.3 million over four years to encourage telehealth uptake. Major state-wide initiatives have been directed towards the use of information technology to support better care.

An unprecedented opportunity

Cumulatively, this degree of activity amounts to one of the largest changes to our health system since its inception (Table 1). The opportunity is thrilling – but without a body of clinical leaders who are involved in the change process at the very outset, from initial strategy to final implementation and advocacy, reforms are unlikely to produce the desired outcomes (Halligan 2010). Clinical leadership can mitigate the risk of developing a program that is not accepted by clinicians, and therefore poorly executed or unable to address the right needs.

Table 1
Federal healthcare spending, 2009–2014.

The clinical leadership challenge



Clinical leadership is an acknowledged success factor for healthcare reform, yet strong, consistent clinical advocacy is often absent in the forums where key strategic decisions are made.

A continuously evolving environment

Healthcare technology, practice and knowledge is continuously evolving at a rapid pace. This constant stream of new research is only slowly analysed and absorbed by practising clinicians, who take on average 17 years to incorporate new evidence into their practice (IOM, 2001), (Fitzpatrick 2008). We have also seen an increase in the complexity of care, requiring clinicians to take an increasingly multidisciplinary approach (PCRR 2005). Finally, a significant rise in consumer expectations, caused by the ubiquity of information available on the Internet and other media sources, has made it increasingly difficult to meet patient expectations.

The importance of clinical engagement in health reform

Healthcare information technology initiatives are more successful when a collaborative redesign approach is taken, in which clinicians are intimately involved in the entire change process. Clinical engagement is a well-documented determinant for the success of new initiatives (Diamond et al 2010), (Boonstra & Broekhuis 2010), (Yackanicz et al 2010) – and a lack of clinical engagement is a commonly cited reason for failure (Coiera 2007). Garling (2008) notes that “Non-clinicians have very little chance of effecting change in clinical practice”.

The benefits of engaging clinicians in health process change

1. Identify areas for improvement.
2. Prioritise change initiatives.
3. Enjoy informed design of new processes.
4. Implement change initiatives effectively.
5. Achieve sustainability through cultural acceptance.
6. Promote best practice to others.

Table 2

A dysfunctional clinician-management relationship

In his 2008 review of the NSW health system, Commissioner Garling identified a dysfunctional relationship between clinicians and 'management' – a term collectively applied to hospital and area health service executives, and government officials responsible for the health agenda. He found that there was a marked lack of trust and consultation with clinicians about clinical operations or workplace changes. As a result of this relationship, "Clinicians feel disempowered and unable to contribute to hospital or area health management. Clinicians are worried that area management is only concerned about meeting budgets and the performance criteria ..." (Garling 2008).

The way forward

Clinicians working together with management, rather than at cross-purposes, is the most effective way to ensure that information systems are appropriately designed, delivered and adopted by the clinical workforce.

Key to resolving the divide between clinicians and management is a greater understanding of each other's perspective. While management can do more to understand the difficulties clinicians struggle with in the delivery of patient care, the onus for clinicians to step up and participate in organisational leadership is crucial. This starts with healthcare organisations appreciating the value of this role, and formalising it into a permanent executive-level position.

To be effective in this role, however, the clinical leader will need to be able to appreciate that emergent strategies they are familiar with aren't effective in organisational change, open themselves up to new models and work within the established structure of the governing executive. This will require a business acumen and political awareness not traditionally emphasised in clinical practice.

The successful clinical leader will need to have or develop the trust and respect of the clinical community, and maintaining that relationship will require ongoing communication. They will need to be cognisant of the issues clinicians are challenged with, and be able to represent this position effectively at the executive level with constructive solutions in mind. Finally, the clinical leader must accept accountability for their decisions.

The need for clinical leadership at the organisational level is evident. By developing this capability, the schism between clinicians and management can be resolved. When organisations have management and clinicians working effectively together, the power of clinical engagement can be harnessed to prioritise, initiate, guide and sustain change.

Models and strategies for clinical leadership



Business literature identifies two ends of a continuum for organisational strategy. At one end of the scale is emergent strategy, where trends, effective work practices, efficient processes and desired behaviours already evident in the organisation are encouraged to continue by formalising them into a defined strategy (Mintzberg 1987).

At the other end, Porter describes an analytic approach to strategic planning, followed by subsequent execution of the resultant blueprint (Porter 1996). With respect to change in healthcare, both models exist quite distinctly.

Clinical practice improvement model

The clinical practice improvement model described in Figure A (p. 9) is an example of emergent strategy for clinical leadership. This model allows clinicians to autonomously innovate around their care model, adopting evidence-based care in a timely manner. This bottom-up approach requires little or no consultation with management outside the care team. As a result, clinicians feel empowered in the change process, and develop ownership of the initiatives. As a collaborative process, it is highly engaging, and is in large part responsible for the cultural shift required to make change sustainable. This model of change has obvious benefits. It is agile, in that change initiatives can progress quickly from concept to implementation. It is adaptive, as clinicians can modify the process to integrate new learnings. It is low cost, because often it is only work practices or procedures that are modified. Finally, it is consultative and inclusive of all affected stakeholders.



Figure A. Clinical practice improvement model

This model involves a process whereby environmental indicators are interpreted by the clinical leader to identify areas for improvement, and the activities of the clinical leader result in best practice care shared with the clinical community. It is only through this cyclical process of critical analysis, innovation, clinical trial, and knowledge-sharing that our understanding of healthcare evolves and progresses.

Organisational strategic planning model

The organisational strategic planning model described in Figure B more closely resembles Porter’s linear model. This model also has benefits. It ensures that funding is applied to priority areas. It anticipates organisational disruption associated with change. Finally, it ensures that decisions have executive support and political alignment, necessary for sustainability when initiatives draw criticism.

When organisational change meets clinical care, however, as is the case with healthcare information technology reform, two worlds collide. A mutual lack of understanding results in misguided reform strategies, priorities or execution, and failure of change initiatives. Over time, this cycle of failed promises has resulted in a clinical community disenfranchised by management and disengaged from the change process.



Figure B. Organisational strategic planning model

Large-scale initiatives have implications for the whole enterprise, and therefore this model proposes a rigorous framework, diligent processes and executive decision-making body that considers aspects such as multi-year financing, human resourcing and industrial relations implications, technology, and operations. Decisions are often made annually when funding for the year ahead becomes clear, and then implemented in a top-down approach over the course of the year.

A model for change

Clinical engagement is acknowledged as a critical success factor for change initiatives that involve patient care. However, clinicians and management have different change paradigms. Clinicians want progress, but expect it to be delivered in the manner to which they are accustomed from experience with an emergent paradigm. In the context of organisational change, however, such a model is not practical.

The key is to develop a clinical engagement model where representative clinical leaders can have an empowered seat at the executive table to engage in strategic planning for initiatives that have an impact on care delivery. Subsequently, these clinical leaders can promote clinical engagement by driving awareness of change initiatives within their clinical communities. This clinical executive role can work to heal the divide between clinicians and management, facilitating successful change.

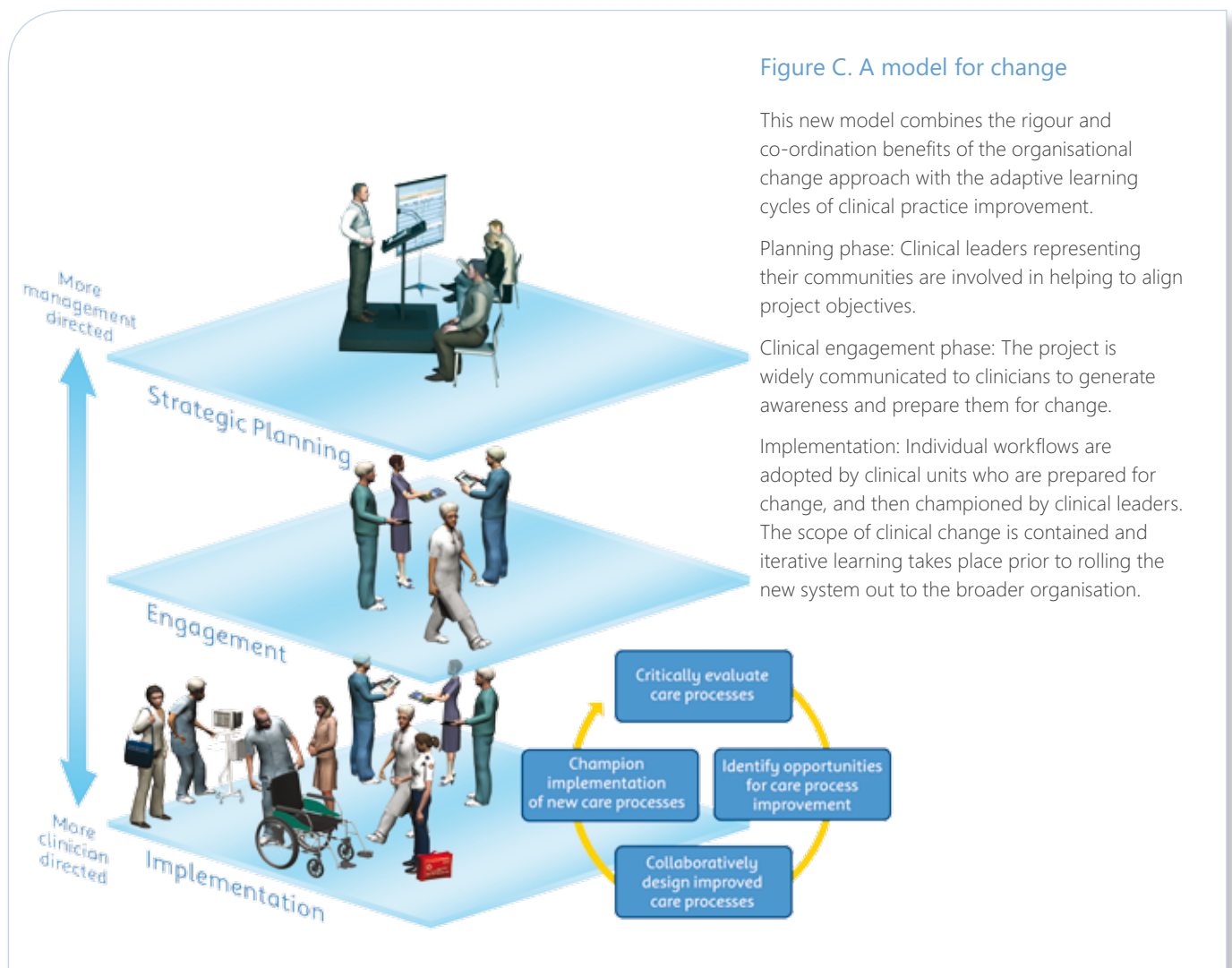


Figure C. A model for change

This new model combines the rigour and co-ordination benefits of the organisational change approach with the adaptive learning cycles of clinical practice improvement.

Planning phase: Clinical leaders representing their communities are involved in helping to align project objectives.

Clinical engagement phase: The project is widely communicated to clinicians to generate awareness and prepare them for change.

Implementation: Individual workflows are adopted by clinical units who are prepared for change, and then championed by clinical leaders. The scope of clinical change is contained and iterative learning takes place prior to rolling the new system out to the broader organisation.



How technology enables clinical leadership



Technology is arguably one of most powerful drivers of clinical leadership today. Continual innovations in software and devices offer rich opportunities to improve both the delivery and safety of healthcare. Issues that have challenged healthcare for many years, including effective team communications, visibility of activity, and inability to accurately measure success, can be overcome by leaders willing to use emerging technology to improve everyday practice and ultimately patient outcomes.

The obligations of clinical leadership are distinctly different for the individual, care team, organisation and professional body. Therefore, different technologies have a role to play at each of these levels to enable more effective clinical processes and better quality of care. The onus is on clinicians to be informed about how these technologies can assist, and work collaboratively with management to prioritise their introduction into the workplace.

Individual clinical leadership

Individuals striving to raise quality and safety standards require a structured approach to managing continual learning, which is at the heart of evidence-based practice. According to the Thompson Reuters database, in 2009 there were over two million journal articles published in the field of clinical medicine. This amounts to almost forty thousand papers per week from journals alone. For the individual clinician, this volume of learning can be overwhelming.

Technologies for Individual Clinical Leadership

Responsibilities	Capability	Benefits	Technologies
<ul style="list-style-type: none"> • Practise continual learning • Maintain an evidence-based practice • Identify areas for personal improvement • Develop strengths • Support change • Challenge problems 	<ul style="list-style-type: none"> • Continual learning • Document viewing and authoring • Evidence-based care 	<ul style="list-style-type: none"> • Up-to-date clinicians • Medico-legally supportable • Improved personal competence • Development of expertise • Improved clinical outcomes • Reduced risk • Reduced inefficiencies 	<ul style="list-style-type: none"> • Knowledge management portals • Productivity solutions • Clinical decision support <p>Enabled by: Microsoft® SharePoint® 2010, Microsoft® Office 2010</p>

Despite the emphasis in recent times on evidence-based practice, studies report a significant lag time between new research and widespread adoption into current practice (Fitzpatrick 2008). Clearly, better systems to support continual learning and the application of new research to current practice are required.

Table 3

Technologies relevant to supporting individual clinical leadership include knowledge management portals, productivity systems, and clinical decision support systems.

Knowledge management portals

Knowledge management has been a challenge that many industries besides health have had to come to grips with. Examples of best practice have emerged from financial services, education, public safety and defence organisations that have risen successfully to the challenge, and can provide direction for our health industry. These organisations have found knowledge management portals to be effective for a number of reasons.

Within a knowledge portal, online information can be tapped by multiple individuals across different locations, giving clinicians access to evidence close to the point of clinical decision-making. They also offer an organising framework that can reduce the time it takes to locate appropriate research or guidelines. And in addition to simple folder structures that can provide macro-level organisation, electronic media can be tagged with metadata, so that enterprise search capabilities can be used to locate information rapidly.

To ensure material is up to date and relevant, new articles can be added and old guidelines retired in a way that print material cannot. In addition, knowledge portals can facilitate participant collaboration through wikis, blogs, forums and FAQs, all of which harness the power of online social networking. And finally, from a security perspective, authentication, access control and digital rights management can ensure that information is shared only by authorised individuals.

Productivity solutions

Productivity solutions include the tools to author documents, create presentations and manage numerical datasets. As such, they are an important adjunct for the continuing education and practice of clinical leaders.

Research articles, care guidelines and even case conferencing summaries are authored using word processing tools. Presentation software is used extensively to create and review slideshows for educational events in healthcare, from the humble ward in-service to larger-scale conferences.

Finally, spreadsheet software has brought efficiency and sophistication to working with numerical datasets. Microsoft® Office provides a ubiquitous platform that can be leveraged by clinicians and the flexibility and convenience of Office Web Applications offers an easy, powerful way to access, view, and edit documents directly from a PC, Web browser or even a phone.

Clinical decision support systems

When the information collected during the care process is collated and aggregated from different systems, new knowledge can emerge to enable higher quality and safer care. Furthermore, by combining contextual patient data with evidence-based guidelines, electronic decision support systems can assist clinicians to practise contemporary evidence-based care (Garg et al 2005).

Using medication prescriptions as an example, we know that there is no opportunity for automated interaction checking in the paper process. In a computerised workflow, however, electronic decision support can review the intended prescription, evaluating against allergies, diagnoses, renal function, concurrent medications and more to give real-time feedback through alerts and alternatives.

This technology can rationalise the volume and relevance of new research, and close the gap between discovery and integration into current practice, allowing clinicians to more readily practise evidence-based care.

Clinical research staff can also collect information required for research purposes and clinical trials.

Ambulance Service of New South Wales improves training with Microsoft Office 2010

At the Ambulance Service of NSW, paramedics must receive clinical recertification every 12 months, so efficient training is critical. By deploying Microsoft® Office 2010 Professional Plus the organisation has been able to deliver rapid, cost-effective training.

Rosemary Hegner, Acting Director, Counter Disaster Unit at the Ambulance Service of New South Wales, says: "With Office PowerPoint® 2010, we can create professional-looking training animations and embed our own videos without having to pay a third party to produce the whole presentation. We can also use Office PowerPoint broadcasting capabilities to distribute these materials remotely in real time and use Microsoft® SharePoint® Workspace to manage them."

Central Manchester National Health Service improves patient management

By providing their nurses with an application called Patienttrak on Windows Mobile® devices, Central Manchester NHS enables staff to quickly identify deteriorating patients and automatically alert clinicians so that they can attend to the patient promptly. As a result, they have significantly reduced hospital mortality and average length of stay. PatientTrak also uses Microsoft® SQL Server® 2008 R2 Reporting Services to drive continuous improvement in work practices and alerting protocols.

Peter MacCallum Cancer Centre improves clinical effectiveness

Charmhealth medication management and decision-support systems provide Peter MacCallum clinicians with up-to-date patient information, with prescribing decisions checked in real time. This helps to decrease adverse events and safeguard patient safety.

Emma Liepa, Communications and Brand Manager, comments: "Charmhealth designs solutions based on Microsoft Common User Interface design principles that provide standardised display elements, so that healthcare professionals switching between different applications have instant and intuitive access to information and clinical support, improving clinical effectiveness."

Clinical leadership in the care team

For care teams, clinical leadership is all about effective teamwork. The increased complexity of patient care has in turn resulted in more specialisation, increasing the size of the team required to provide that care. Even if each individual performs their role skilfully and with diligence, a lack of communication between providers can result in disaster.

Technologies for Care Team Leadership			
Responsibilities	Capability	Benefits	Technologies
<ul style="list-style-type: none"> • Identify process issues • Practise effective team communication • Learn from others' strengths • Address team weaknesses • Formulate new care processes • Champion change 	<ul style="list-style-type: none"> • Team work and continuity • Improved communications • Quality improvement 	<ul style="list-style-type: none"> • Efficient care processes • Safe care processes • Decreased risk • Increased team competence • Improved change adoption • Lasting change 	<ul style="list-style-type: none"> • Microsoft® Unified Communications • Knowledge management • Business intelligence <p>Enabled by: Microsoft® SharePoint® 2010, Microsoft® Office 2010, Microsoft® Lync™ Server 2010, Microsoft® Exchange Server, Microsoft® SQL Server®</p>

Unified communications

Table 4

In today's busy health context, time has become a precious resource for clinicians, influencing the amount and effectiveness of communication in the care team.

Without an effective way to prioritise, some urgent communications are not attended in a timely enough manner. Other routine communications that could have been addressed later interrupt and disrupt patient care. Ironically, technologies like mobile phones and pagers have the potential to complicate effective communications, when the busy intern documenting team correspondence is concurrently trying to relay patient updates to the nursing staff and the mobile phone rings.

To address this fragmentation, an innovation called Microsoft® Unified Communications is gaining traction in many industries including health. Unified Communications refers to the convergence of voice, data and video technologies so that applications such as email, calendars and voicemail can now be retrieved centrally through a single inbox and synchronised across your laptop, PC or mobile phone.

With Unified Communications, instead of missed calls going to voicemail, clinicians can also receive them as an email or text message on a smartphone. This means that when clinicians are unable to take a call, they can glance briefly at the new email or text message to assess and prioritise the urgency of the communication.

Unified Communications can also support Windows Live® presence, a technology that broadcasts your calendar status, so that others can see when you are busy, available, or away from your device. Presence also permits initiation of instant message communications, a less intrusive way of contacting a clinician.

These communications can be escalated to a voice call or videoconference readily from the presence interface, providing practical way to prioritise, rationalise and streamline communications and improve collaboration across the clinical care team.

Knowledge management systems

Another key area supporting teamwork is measurement. For a team to learn together, feedback mechanisms need to be in place. Where the team is underperforming, either against a historical or specialty quantified benchmark, timely feedback of this situation is important in remedial action.

Similarly, if a team identifies best practice, it is important to promote it so that others can learn from the team. However, clinical operations today are delivered in a dearth of measurement. "Although almost all of the needed data is collected across the state, it is not readily accessible, even at the highest levels of health administration." (Garling 2008).

In the paper-based workflow, individual patients can be assessed against their historical information for certain clinical indicators like charted observations and medication dosages. However, the ability to compare the patient journeys of like patients, or establish how the standard of care for a condition has improved over time, is a research project.

Business intelligence

As clinical information systems are introduced to support the workflow of providers, they can also be used to provide insight into the care process by simply and programmatically measuring quality of care. This technology is essential to supporting evidence-based care, based on accurate, timely information.

Again, in reference to the NSW Health example, their system also has great value in terms of analysis that will enable staff to track and manage issues across the continuum of care. For example, authorised individuals can compare average lengths of stay or outcomes from different treatments in order to improve patient outcomes and discover best practice.

The technology term for this type of data analysis is business intelligence, and the principles are directly applicable to the clinical context, which is becoming increasingly computerised.

Business intelligence systems are able to take data from multiple systems and sources, combine them in a single repository, then allow interrogation with user-friendly interfaces to provide summary dashboards, period activity reports, and ad hoc clinical queries. This enables clinical leaders to systematically analyse information in many ways (across patient groups, practices and methodologies) to uncover trends, patterns and ultimately better care patterns.

Clinicians absorb a lot of change in the shift to computerised care. It is only appropriate that the maximum value of the collected information is extracted through business intelligence.

Eastern Health improves collaboration with Unified Communications

Eastern Health, the second-largest healthcare provider in Victoria, Australia, upgraded to Microsoft® Exchange Server with Unified Messaging and Microsoft® Office Communications for an efficient way to improve staff collaboration.

Now staff can locate personnel more effectively and check the presence of individual staff members and choose the most appropriate way to contact them – email, voice or text – all of which has boosted efficiency and productivity.

The Children's Hospital at Westmead improves management and access of patient data

Using Microsoft® OneNote, paediatric neurology clinicians are able to assemble patient information in a consistent way to facilitate team case conferencing. By integrating OneNote notebooks into a SharePoint Web portal, clinical team members can access patient information throughout the department. Dr Deepak Gill comments: "Microsoft OneNote allows the neurology team to review our complex patients effectively, supporting high quality clinical decision making."

Austin Health built a new management reporting system with workflows, checklists and meaningful categories using Microsoft® SharePoint® Server and Microsoft® SQL Server®

Now Austin Health has a complete business intelligence solution that enables staff to quickly analyse data and publish reports online to share. This self-service model makes data available easily with scorecards that show healthcare workers how they are performing against targets. They can also review information in many different ways without seeking help from the IT department. Peter Daveys, Manager, says: "The real power of Microsoft® Balanced Scorecard is its ability to present this information in a way that allows us to focus on whether the actual business results are meeting our stated goals and objectives."

Organisational and health system clinical leadership

Clinical leadership at the organisational and health system level revolves around advocacy and representation. The primary role of clinicians is to deliver high-quality care, and it is therefore impractical to expect all clinicians to participate actively in organisational decision-making and change initiatives.

Where these decisions affect workflow, workload and work style of clinicians, however, it is important that clinicians have a voice. This necessitates a leadership structure where certain clinicians are able speak in an empowered fashion on behalf of their constituents.

This level of organisation is apparent in nursing and pharmaceutical functions in the acute care setting, but deficient in the medical disciplines. "...Increasingly, medical teams in public hospitals are becoming amorphous without proper structure or leadership" (Garling 2008).

The challenge for these groups is the diversity of the respective professions leading to fragmentation of issues and interests. From a technology perspective, this fragmented perspective has resulted in a federated approach to modernisation and siloed systems servicing specific departments or health settings.

It has been compounded by a lack of national standards that would allow interoperability. With this emergent strategy replicated in hundreds of hospitals and community care settings across the nation, it is little wonder we have such difficulty in supporting the patient as they move through venues of care and across geographies, let alone consistently defining quality of care.

As healthcare organisations rethink their approach to systems, the clinical voice is increasingly important. Empowered clinicians representing the needs of their colleagues are required to register their need for systems like knowledge management, electronic decision support, business intelligence and systems integration, described below.

Technologies for Organisational Team Leadership			
Responsibilities	Capability	Benefits	Technologies
<ul style="list-style-type: none"> Promote best practice Benchmark across organisations Adopt better processes Appraise models of care critically Ensure clinicians own change process 	<ul style="list-style-type: none"> Unified view Performance management Enterprise content management 	<ul style="list-style-type: none"> Clinically prioritised change Clinicians driving change Lasting change Positive culture More supportive system Improved relations between clinicians and management 	<ul style="list-style-type: none"> Systems integration Web portals and organisational knowledge management <p>Enabled by:</p> <p>Microsoft® SQL Server® 2010, Microsoft® SharePoint® 2010, Microsoft® Office 2010, Microsoft SQL Server 2008 R2, Microsoft® BizTalk® Server 2010, Microsoft® Amalga™ UIS 2009</p>

Table 5

Unified view of clinical information

Technology has a key role to play at the organisational and health system levels. From a remedial perspective, it is possible to connect disparate systems through interfaces. This can address a pressing problem; for example, where information from the emergency department and inpatient areas needs to be viewed together.

Interfacing can address the problem that a clinical field common to both systems – for example, an allergy – may be updated in both systems by entering the information in only one. Customised interfaces, however, require maintenance and have a limited life span, as each system develops over time.

Web portals

Web portals can be used to surface information that has been extracted and aggregated from diverse systems. They can, for example, provide a consolidated patient view. Or they can be used to reveal and measure performance, driving quality across an organisation. An advantage of this approach lies in not having to rip and replace existing systems. In addition to team-based collaboration sites, organisations are now starting to use the same technology to drive their enterprise intranet and Internet sites.

From a more strategic perspective, however, standards-based systems are increasingly sought to make it simpler to connect organisations across the spectrum of care and to provide familiar, consistent tools for knowledge management or medication management that can be required across locations – from the operating theatre to GP rooms or outpatient clinic.

Sydney Adventist Hospital connects its systems with HL7 support using Microsoft® BizTalk® Server

With the majority of their mission-critical applications developed in-house, Sydney Adventist Hospital had connected them using point-to-point interfaces, but these lacked consistency and reliability. Using Microsoft BizTalk® Server they were able to create an interface engine that simplified interface complexity and established a repeatable process that developers could use to create consistent interfaces across systems. They could also monitor and troubleshoot interfaces from one Web portal, saving time and reducing downtime.

Uniting Aged Care uses Microsoft® SharePoint® Server to create a Web hub where staff can collaborate easily

By deploying Microsoft® SharePoint® Server, Uniting Aged Care was able to aggregate and publish all their information in one secure Web portal, giving staff in Victoria and Tasmania easy online access to clinical protocols, centralised contact lists, contracts and forms. Peter Folliot, General Manager Corporate Services, comments: "With strict accreditation requirements, we needed a platform that could improve workflow practices and bring staff together, regardless of their location."



Professional organisational clinical leadership

Professional bodies already perform a prominent clinical leadership role. Professional affiliation to the specialty or college often transcends loyalty to the employment organisation, especially in the case of a clinician who may work at a number of different hospitals.

Clinical leadership at the professional body level is concerned with establishing a community, then using education, training and examination to drive professional standards for the membership. As these professional bodies are generally not-for-profit national organisations, the membership can be widely distributed geographically.

Technology can support the unification of this diverse membership into a strong community.

Technologies for Professional Leadership			
Responsibilities	Capability	Benefits	Technologies
<ul style="list-style-type: none"> • Publish results • Participate in the professional community • Educate relevant change stakeholders (IT, strategy, government, management, executives) • Get involved in decision making • Lobby policy makers • Socialise issues with the public 	<ul style="list-style-type: none"> • Enterprise content management • Unified communications • Remote collaboration 	<ul style="list-style-type: none"> • Evolving body of knowledge • Supportive culture • Decreased time to change • Aligned stakeholders • Clinical expertise in decision making • Accountability for decisions • Transparency for consumers • Greater chance of attracting funding for initiatives 	<ul style="list-style-type: none"> • Professional knowledge management • Microsoft® Unified Communications • Videoconferencing <p>Enabled by: Microsoft® SharePoint® 2010, Microsoft® Office 2010, Microsoft® Lync™ Server 2010, Microsoft® Exchange Server 2010</p>

Table 6

Videoconferencing

In addition to the conferences held periodically by these bodies, videoconferencing capabilities can promote a sense of community and provide a richer medium for communication for remote participants.

Videoconferencing as a technology has been underused in the past because it required dedicated costly equipment, generally in a location that required scheduling ahead of time, and was quite technical to use (Smith & Gray 2009).

However, with most new laptop devices being Internet ready and equipped with a Webcam, cost and room scheduling requirements are removed as laptops become mobile videoconferencing stations. The software has also become far less technical, and integration with email systems and calendars mean that hosting or joining these sessions is now a simple process. Beyond connecting parties into a conference, content like presentations can be uploaded into the teleconference software itself, and sessions can be recorded.

This changes a real-time communication tool into a powerful education vehicle that can help professional bodies further their agenda in informing and engaging their membership.

Immediate Assistants revolutionises communications with Microsoft Online Services

Immediate Assistants is using Microsoft® Online Services to connect their staff and consultants across professional medical services and training, both nationally and internationally across the entire spectrum of the pre-hospital care environment.

Dr Adrian Cohen, CEO, says "Microsoft Online Services has delivered us high availability, comprehensive security and simplified IT management. It has revolutionised the way we communicate, the clarity of our communications, the ease of our interactions and has dramatically reduced our IT spend."



Microsoft platform for clinical leadership

	Clinical Computing	Clinical Communications and Collaboration	Health Intelligence	Connected Care
Capabilities	Provide secure, up-to-date clinical information at the point of care on a choice of devices – mobiles, laptops, tablet PCs.	Enable staff to locate and communicate with colleagues, and share information securely across hospitals and clinics and with remote staff.	Empower clinicians and management to analyse clinical and operational data in real time.	Share information across acute, primary and community care providers and patients to underpin core elements of a local and national eHealth infrastructure.
Features and Benefits	<ul style="list-style-type: none"> Improve clinical safety and decision-making and increase efficiency by enabling staff to access relevant, role-based information and systems remotely through wireless or mobile technology. Protect sensitive health data with robust security and identity management, as well as cost-effective universal security and threat management. Reduce the total cost of ownership of your desktop, server and network environments with comprehensive management technologies. 	<ul style="list-style-type: none"> Streamline communications and enable staff to easily locate colleagues and determine their preferred method of contact through Microsoft® Unified Communications for email, voice, video and instant messaging, as well as presence. Improve time management with enterprise-class messaging, scheduling and shared calendars. Reduce total cost of ownership with a cost-effective migration path from PABX to IP telephony. Increase productivity by enabling staff to access clinical workspaces for document and record sharing, with Web portals for search, workflow management, access to scanned records and medical education. Enable staff to collect, validate and analyse data using standardised clinical documents that they can access at any time from almost anywhere. 	<ul style="list-style-type: none"> Enable clinicians to extract, link, store, analyse and manage mission-critical data so that they can make accurate, informed decisions and reduce errors. Benchmark and manage financial and operational performance with real-time access to data. Improve decision-making through greater visibility of patient data and decision support tools that provide analysis and guidance. Support planning, tracking of key performance indicator (KPI) and operational dashboards through performance management capabilities. 	<ul style="list-style-type: none"> Design, develop and test new clinical applications more rapidly and at lower cost. Cost-effectively connect internal clinical systems with other healthcare provider systems using standards-based integration. Improve your ability to co-ordinate care and empower patients and carers by managing the interactions and requirements for co-ordinated care.
Technologies	<p>Security, identity and access control: Microsoft® Forefront® Suite</p> <p>Infrastructure management and monitoring: Microsoft® System Center Suite</p> <p>Deployment, virtualisation, networking, storage and core infrastructure services: Windows Server® 2008 R2 & Windows Server® Hyper-V</p> <p>PC and mobile operating systems: Microsoft® Windows® 7 and Windows Mobile®</p>	<p>Email and unified messaging: Microsoft® Exchange Server® 2010</p> <p>Instant messaging, presence, voice and video-conferencing: Microsoft® Lync™ Server 2010</p> <p>Workflow, portals, content management, team workspaces: Microsoft® SharePoint® Server 2010</p> <p>View, edit and create clinical documents across devices: Microsoft® Office 2010</p>	<p>Data management, data mining, analysis, reporting and data integration: Microsoft® SQL Server® 2008 R2</p> <p>User-driven data analysis: Microsoft® PowerPivot for Office Excel® 2010</p> <p>Operational dashboards: Microsoft® Sharepoint® Server 2010</p> <p>Clinical data aggregation and display: Microsoft® Amalga® Unified Intelligence System 2009</p>	<p>Application design and development: Microsoft® Visual Studio®, Microsoft® Expression® and Microsoft.NET</p> <p>Standards-based clinical and administrative system integration using open standards: Microsoft® BizTalk® Server 2010</p> <p>Service and client management: Microsoft Dynamics® CRM 4.0</p> <p>Patient-controlled electronic health record platform: Microsoft® HealthVault™</p>

Referenced Works

Australian Government, The Treasury, Intergenerational Report, 2007.

Bojlén NS, Gannik DE, 2001. 'General practice adrift. Explosion of knowledge, technological development and population.' *Ugeskr Laeger*. 2001 Dec 31;164(1):37-42.

Boonstra, A., Broekhuis, M. 2010, 'Barriers to the acceptance of electronic medical records by physicians from systematic review to taxonomy and interventions.' *BMC Health Services Research*, 2010 Aug 6;10:231.

careconnect.sa, 2010. 'Improving Health Care in South Australia', State Government of South Australia. Quoted 19/09/2010 <http://www.careconnect.sa.gov.au/Default.aspx?tabid=86>

Coiera, E.W. 2007, 'Lessons from the NHS National Programme for IT', *Medical Journal of Australia* 2007; 186 (1): 3-4.

Diamond, E., French, K., Gronkiewicz, C., Borkgren, M. 2010, 'Electronic Medical Records: A Practitioner's Perspective on Evaluation and Implementation'. *Chest*, 2010 Sep;138(3):716-23.

Fitzpatrick JJ, 2008. 'Lag time in research to practice: are we reducing or increasing the gap?' *Applied Nursing Research*. 2008 Feb;21(1):1.

Garg A., Adhikari N., McDonald H., et al. 2005. 'Effects of computerised clinical decision support systems on practitioner performance and patient outcomes.' *JAMA* 2005; 293: 1223-1238.

Garling, P. 2008, 'Final Report of the Special Commission of Enquiry. Acute Care Services in NSW Public Hospitals.'

Halligan, A, 2010. Quoted by eHealthInsider in 'Ex CfH lead says NPfIT has no engagement' on 1/10/10 at http://e-health-insider.com/News/5866/ex_cfh_lead_says_npfit_has_no_engagement

IOM, 2001. 'Crossing the Quality Chasm: A New Health System for the 21st Century', Institute of Medicine, National Academy Press, Washington D.C.

Mintzberg, H. 1987, 'Crafting strategy', *Harvard Business Review*, Jul-Aug, pp. 403-420

NHHRC, 2009. National Hospital and Health Reform Commission, Final Report – A healthier future for all Australians, June 2009.

NHPAC, 2006. National Health Priority Action Council, National Chronic Disease Strategy, Australian Government Department of Health and Ageing, Canberra.

NHHN, 2010. 'A national health and hospitals network for Australia's future. Delivering better health and better hospitals', Commonwealth of Australia, http://www.health.nsw.gov.au/resources/initiatives/healthreform/NHHN_report3_RedBook_pdf.asp

NSWHealth 2010. 'Electronic Medical Record', New South Wales Government. Quoted 19/09/2010 <http://www.emr.health.nsw.gov.au/>

Porter, M. 1996, 'What is strategy?', *Harvard Business Review*, Nov-Dec, pp. 61-78

Productivity Commission Research Report, 2005. 'Australia's Health Workforce.', Commonwealth of Australia. Downloaded from http://www.pc.gov.au/_data/assets/pdf_file/0003/9480/healthworkforce.pdf

Queensland Health, 2010 'e-Health Program'. Information Division. Quoted 19/09/2010 http://www.health.qld.gov.au/ehealth/docs/ehealth_flyer_v4.pdf

Victorian Government Health Information, 2010. 'HealthSMART', State Government of Victoria. Quoted 10/09/2010 <http://www.health.vic.gov.au/healthsmart/>

Yackanicz, L., Kerr, R., Levick, D. 2010, 'Physician buy-in for EMRs.' *Journal of Healthcare Information Management*, 2010 Spring;24(2):41-4.

Bibliography

ABC News, 2010. 'Patel guilty on all charges.' Australian Broadcasting Corporation. Retrieved 5/9/10 <http://www.abc.net.au/news/stories/2010/06/29/2940352.htm>

Australian Institute of Health and Welfare, 2010. 'Australia's Health 2010'. The twelfth biennial health report of the Australian Institute of Health and Welfare, (AIHW: Canberra)

Australian Institute of Health and Welfare, 2008. 'Australia's Health 2008'. Quoted on 19/9/2010 <http://www.aihw.gov.au/publications/aus/ah08/10585-sum.html>

Beilby, J.J., Duszynski, A.J., Wilson, A., & Turnbull, D.A., 2005. 'Electronic decision support systems at point of care: trusting the *deus ex machina*', *Medical Journal of Australia* 2005; 183 (2): 99-100.

DOHA, 2010. 'Personally controlled electronic record health system', Australian Government. Quoted 19/09/2010 <http://www.yourhealth.gov.au/internet/yourhealth/publishing.nsf/Content/factsheet-ehealth-01>

Englund, R., Graham, R., & Dinsmore, P. 2003, 'Creating the project office', San Francisco, CA., Jossey-Bass.

Floyd, S. & Wooldridge, B. 1992, 'Managing strategic consensus: the foundation of effective implementation', *Academy of Management Executive*, vol. 6, no. 4, pp. 27-39.

Health Care in America. Institute of Medicine National Academy Press, Washington, D.C.

Intergeneration Report, 2010. 'Australia to 2050: Future Challenges', Commonwealth of Australia; www.ag.gov.au/cca

Kohn, L.T., Corrigan, M.S., & Donaldson, M.S. (eds). 1999, 'To Err Is Human. Building a Safer Health System.' Committee on Quality of Healthcare in America. Institute of Medicine National Academy Press, Washington D.C.

Kotter, J. 1995, 'Why transformation efforts fail', *Harvard Business Review*, Mar-Apr, pp. 59-67

Litynski G.S.1998. 'Kurt Semm and the fight against skepticism: Endoscopic haemostasis, laparoscopic appendectomy and the Semm's impact on the 'laparoscopic revolution'' *Journal of the Society of Laparoendoscopic Surgeons*. 1998;2:309-13.

Smith, C.A., & Gray, L.C. 2009, 'Telemedicine across the ages.', *Medical Journal of Australia* 2009; 190 (1): 15-19.

Sorrell, J.M. 2010. '*Retaining the experts. Aging nurses in mental health.*' *Journal of Psychosocial Nursing and Mental Health Services*. 2010 Jan;48(1):17-20.

Stanley D, 2007. '*Lights in the shadows: Florence Nightingale and others who made their mark.*' *Contemporary Nurse*. 2007 Feb;24(1):45-51.

Stanton M.W., & Rutherford M.K. 2004, '*Hospital nurse staffing and quality of care.*' Rockville (MD): Agency for Healthcare Research and Quality; 2004. Research in Action Issue 14. AHRQ Pub. No. 04-0029.

WHO 2008. '*The World Health Report 2008: Primary Health Care now more than ever.*' World Health Organisation, WHO Press

May we help?

If you are planning a clinical leadership initiative and you want to improve and evaluate care, talk to a Microsoft partner. With thousands of reference sites and successful deployments across the world, we have both the experience and expertise to help you assess your IT infrastructure and select and deploy cost-effective, proven solutions that meet your needs today and tomorrow.

To learn more about Microsoft healthcare solutions, visit

www.microsoft.com.au/health
or email [Microsoft on healthau@microsoft.com](mailto:healthau@microsoft.com)

To locate your nearest Microsoft partner, visit

www.microsoft.com.au/findapartner/solutionfinder

Microsoft®