Realising the Benefits from Implementation of Electronic Medications Management

A shared vision, lessons learnt and benefits map for improved medications management using supportive technology to enable the realisation of benefits by eMM implementers.

A white paper developed with input from the eHealth community during CHIK's Health-e-Nation Leadership Summit, Sydney 2014.

Developed by

ASE CONSULTING Australia

CHIK SERVICES
CONNECTING HEALTHCARE LEADERS

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Document purpose

This document is the result of a workshop held at the 2014 Health-e-Nation Leadership Summit organised by CHIK Services on Electronic Medications Management.

Workshop attendees shared their experiences of implementing Electronic Medications Management systems and provided guidance on how best to realise the potential benefits from these systems.

The document is intended to provide guidance to those wishing to implement eMM systems on how to maximise the potential benefits they can realise.

Please note, this document is not intended to be an exhaustive list of benefits associated with eMM, but merely a guide for implementers on how best to optimise their eMM system deployment to achieve maximum benefits.

Intended audience

This document is directed towards organisations considering, or in the process of implementing Electronic Medications Management systems.

It may also be useful for Health Departments, Vendors and Consultancies who have an interest in Electronic Medications Management.

Suggested Citation

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Abstract

Electronic Medicines Management (eMM) solutions promise to deliver compelling benefits including improvements to the safety, quality, efficiency and efficacy of health care services, however, realising benefits is a challenge that must be actively managed throughout implementation in order to achieve successful outcomes.

During CHIK's Health-e-Nation Leadership Summit held in Sydney in March 2014, eMM subject matter experts, vendors, implementers, clinicians and senior healthcare leaders gathered in an eMM workshop to discuss the benefits of eMM and how best to realise them.

The outputs of the eMM workshop include a shared vision, benefits map and lessons learned for eMM implementations.

Introduction

Electronic Medications Management (eMM) refers to the use of eHealth and other Information Communication Technology (ICT) to support the Medication Management Cycle.

The Medication Management Cycle is an iterative, complex process that incorporates the series of steps involved in providing medications to patients; each cycle relates to an episode of care. The Australian Pharmaceutical Advisory Council (APAC) have outlined the nine key steps of the cycle in detail as part of the 'Guiding Principles to Achieve Continuity in Medication Management' (APAC, 2005).

The cycle's nine steps may involve different health professionals, hospital staff, suppliers, funding arrangements and, importantly the consumer and their carers. Optimising these steps and ensuring continuity across the cycle and between episodes of care is essential to ensure that medications are used safely, cost-effectively and achieve the best possible outcomes (APAC, 2005).

Australian hospitals are beginning to implement eMM systems due to its promise of significant benefits; particularly related to the safety of medications and many additional benefits to patients, clinicians and the service itself.

What is Electronic Medications Management?

eMM refers to an ICT system, or collection of systems, that enable the processes involved in the medication management cycle to be completed electronically.

As a minimum, this typically this includes:

- medications history recording;
- medications review and reconciliation;
- allergies and adverse drug reaction history and alerts;
- ePrescribing;
- medications formulary, standardised medications catalogue, order-sets and clinical decision support;
- electronic medication ordering;
- dispensing;
- electronic administration records;
- access to shared medication lists from local and national eHealth records
- electronic claiming; and
- eDischarge summaries.

There are a wide range of commercial and bespoke eMM solutions that have been developed to provide the above functionality. For a more detailed overview of the required functionality for a hospital eMM system, please refer to the Australian Commission on Safety and Quality in Health Care. Electronic Medication Management Systems — A Guide to Safe Implementation, 2nd edition (ACSQHC, 2012).

Developing this guide

During CHIK's Health-e-Nation 2014 Leadership Summit held between 25-27 March at the Shangri-La Hotel in Sydney leaders from healthcare, government and IT gathered along with eMM solution vendors, implementers and subject matter experts to discuss the benefits of eMM and how they can be best achieved.

Facilitated jointly by Katharina Redford and Richard Taggart, several speakers (listed below) shared key insights relating to eMM implementation approaches and lessons learnt.

- **Katharina Redford** – Manager Productivity & Development Division, South Western Alliance Regional Hospitals;
- **Dr Justin Otto** – Product Manager Electronic Medications Management, InterSystems; and
- **Tom Simpson** – Executive Director State-wide Pharmacy, Department of Health and Human Services Tasmania

Richard Taggart, Management Consultant, ASE Consulting Australia then facilitated a lively and interactive Value Mapping session – the outputs from which have been have been developed into this guide.

Scope

Whilst some hospitals are now quite advanced in the use of eMM, others are just starting to consider implementation. This document is intended to support all hospitals, wherever they are in their eMM journey, as a guide to maximise the benefits and return on investment that can be achieved through the use of eMM.

A Shared Vision for Electronic Medications Management

It is important that eMM implementers define a clear vision of the desired future state they seek to create as part of the transformational change in medication management they will deliver to the organisation.

A vision is a picture of a better future and 'envisioning and communicating a better future' is one of the seven principles of Managing Successful Programmes (MSP) (UK Cabinet Office (a), 2012) as it is crucial for the successful delivery of major transformational change.

Where possible, the vision should be developed by senior management in collaboration with key clinical stakeholders across the organisation .The vision should be defined and agreed early in the eMM implementation life cycle, and refined as necessary over time.

It is critical that the vision stays aligned with corporate strategies to ensure success. Implementers should develop their own shared vision statements that can 'win hearts and minds' of clinicians in their organisations.

At the CHIK Health-e-Nation Leadership Summit, the following vision was captured by the eMM workshop to provide a guide to implementers:

Health-e-Nation 2014 Leadership Summit shared vision for eMM:

To enable safer, more cost-effective care and improved clinical outcomes by fostering effective utilisation of well designed, developed and implemented information systems that support clinicians and consumers in optimising the use of Medications.

eMM will allow us to develop new information, tools and systems that will:

- Optimise the use of medications
- Ensure medications are used as safely as possible
- Enable medications to be used cost-effectively
- Support clinicians to obtain the best possible clinical outcomes from medications
- Ensure Providers and Consumers have a positive experience

Your own vision statement should help you engage with stakeholders at all levels to help them understand and picture the future organisation.

Realising Benefits

The 'promise of eMM' and the need for benefits management.

Electronic Medications Management (eMM) promises a great number of exciting benefits that can help us improve the quality, efficacy, safety and efficiency of medications usage in our health services. These benefits are commonly seen in our business cases, project briefs and in promotional material from software vendors and providers.

However healthcare is a complex, uncertain environment and there are a great many processes involved in medications management.

For example; business cases for eMM systems often cite they will dramatically reduce prescribing errors and potentially avoid a significant number of adverse drug events. Whilst there is compelling literature to support these claims that prescribing can be improved (Westbrook J, 2010) (Franklin BD., 2007) and up to 65% of errors be prevented (Westbrook J., 2012) literature reviews of eMM show mixed results (Reckmann MH, 2009). I.e. the benefits are not always realised.

Delivering the promised eMM benefits is challenging and benefits realisation requires management. If we are to realise the potential benefits for eMM, we must move beyond the "what's in it for me" statements and actively and effectively manage the realisation of benefits.

Most implementers will acknowledge the importance of managing benefits, however in reality it proves a challenge (Santiago F., 2012).

Effective Benefits Management

In order to achieve the potential benefits from eMM, implementers must **pro-actively manage benefits**.

Benefits management is a process that runs across the full business change lifecycle (UK Cabinet Office (b), 2012) and is at the very heart of programme management (UK Cabinet Office (a), 2012).

eMM programmes and projects are primarily driven by the need to deliver benefits. These projects deliver outputs that enable eMM capabilities. Business changes and utilisation of these capabilities deliver outcomes that serve the purpose of realising benefits.

Benefits are "'measurable improvements' resulting from an outcome that are seen as an advantage to a particular stakeholder and contribute to one or more organisational objectives" (UK Cabinet Office (b), 2012). For example, a '%age reduction in preventable adverse drug events'.

It should also be noted that eMM requires major transformational change in order to achieve benefits. These changes, although focussed on improvements, may also have some negative impact or dis-benefits.

Dis-benefits can be defined as the outcomes from a programme which are perceived by one or more stakeholders as negative. The Health-e-Nation Leadership Summit workshop identified a number of potential dis-benefits, discussed next.

The Benefits Management Cycle

There are many approaches to benefits management, but the UK Cabinet Office Managing Benefits and Managing Successful Programmes frameworks are resources that can be useful to implementers (UK Cabinet Office (a), 2012) (UK Cabinet Office (b), 2012).

These frameworks reference the 'Benefits Management Cycle', see Figure 1 (below); an iterative and continuous process to optimise and identify further benefits (UK Cabinet Office (a), 2012).

The cycle includes the processes of:

- **Identify & quantify benefits** – defining, modelling and mapping likely benefits (see benefits mapping below).

- **Value and appraise** – who will receive the benefit and what type of benefit is it? Benefits may be economic, or related to improve effectiveness or efficiency.

- **Plan** – detailed benefits realisation planning includes benefits profiles that define exactly how the benefit will be delivered, measure and what the governance arrangements are.

- **Realise** – which includes measuring as eMM capabilities are delivered and transition to outcomes and subsequent benefits.

- **Review** – eMM programmes a long and complex and there should be regular and/or adhoc reviews to ensure benefits realisation is on track.
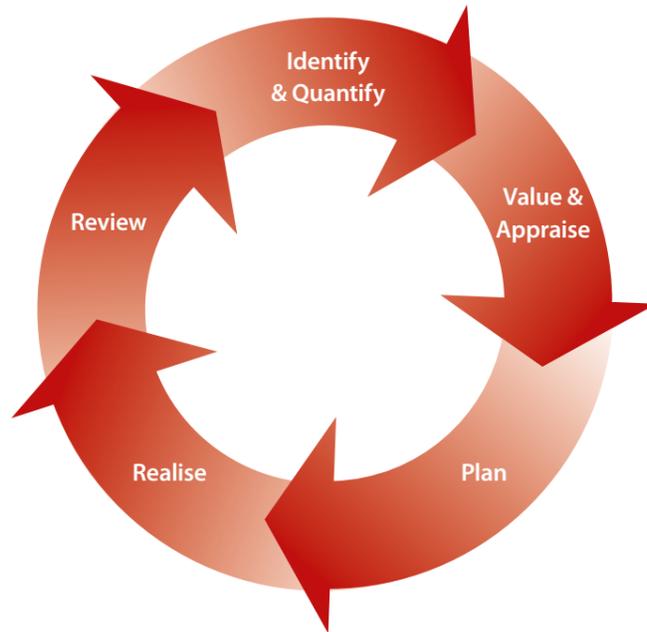

Figure 1: Benefits Management Cycle (APMG Managing Benefits ® 2013)

A Benefits Map for Electronic Medications Management

Introduction to Benefits Mapping

A Benefits Map is a visual representation of the interaction between planned or required initiatives and the outcomes and benefits that can be achieved.

The map provides a clear pathway and contributing capabilities that lead to the benefits. These maps are useful tools to assist programme/project planning, ongoing benefits measurements and realisation. It can assist in the identification of additional required initiatives, potential risks and assumptions that may have been made.

The diagram below represents how these maps visually represent the pathway to benefits:

Figure 2: benefits map pathway

- **Project / Initiatives** - include tasks that may be already undertaken, planned or required. This can also include tasks by other groups or parties required to deliver a capability.
- **Created Capabilities and Solutions** - are the results of an initiative, these are often referred to as enablers and typically relate to the project deliverables
- **Adoption of Capabilities** - is usually a required step before outcomes and benefits can be achieved. At this stage of the project lifecycle the focus is often activity driven and measurement can often be related to these activities.
- **Business Change Outcomes** – are achieved from the adoption of the capabilities, they are often lead indicators of the potential benefits.
- **Benefits Realised** – are typically the strategic end-state objectives associated with the project. They often include reduced costs, increased efficiency etc.

Typically Benefits Maps are written, and intended to be read, from right to left. Each stream is linked to associated outputs and many streams can be linked together.
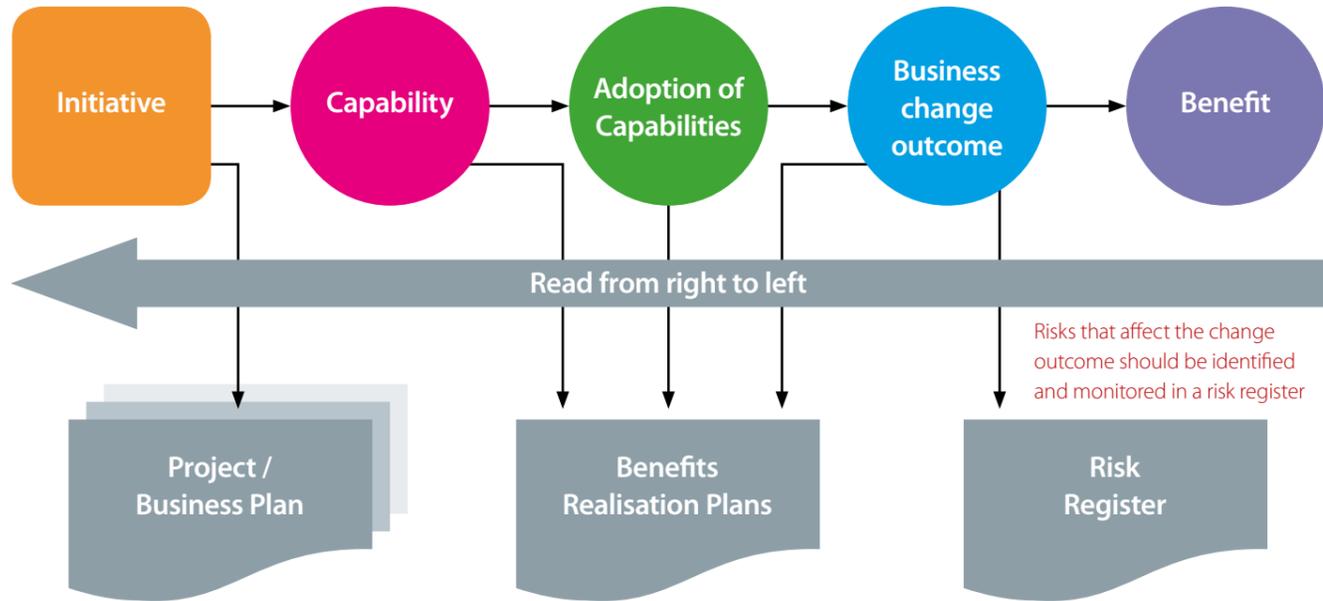
Figure 3: example map
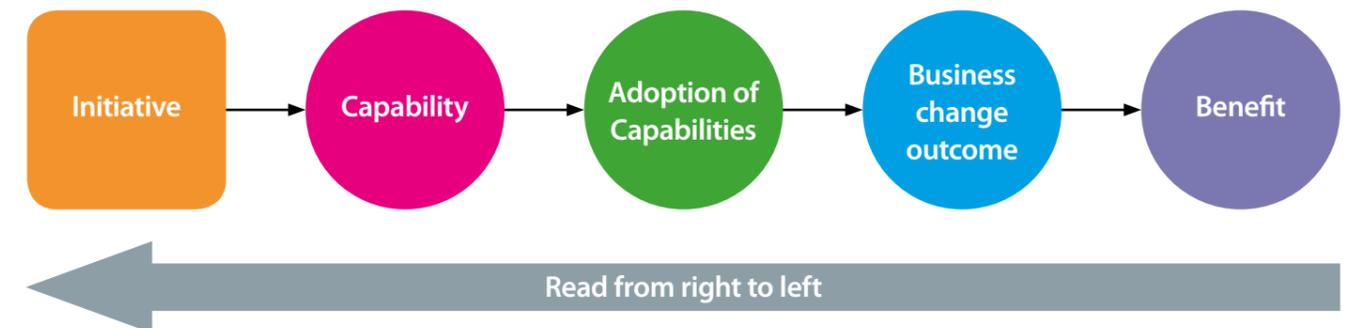
Applying Benefits Mapping to Benefits Realisation Management

Although Benefits Maps serve as a visual representation of the pathway to benefits, the outputs should be applied to project and benefits realisation management - see Figure 4

Figure 4: application of value map

The Benefits Mapping process identifies key initiatives or activities, without these critical capabilities that are on the pathway will not be delivered.

Projects and business plans should reflect the initiatives that have been included in the map.

Each capability, its adoption outcome and benefits should be recorded in the Benefits Register. Monitoring plans to measure progress should reflect these outputs.

Finally, risks and assumptions should be documented and tracked. These risks will impact the benefits they are associated with and if they occur will impact the realisation of benefits.

Developing a Benefits Map

Benefits maps are best developed in a workshop setting allowing key stakeholders to contribute to their development. This enables stakeholders to understand their role in the realisation of benefits and gives them a clear vision to the capabilities required and business changes involved in the realisation of benefits.

eMM Benefits Map

The following benefits map was developed during a workshop with the Health-e-Nation Leadership Summit attendees.

Colour coded arrows help to demonstrate the linkage between the benefits and outcomes.
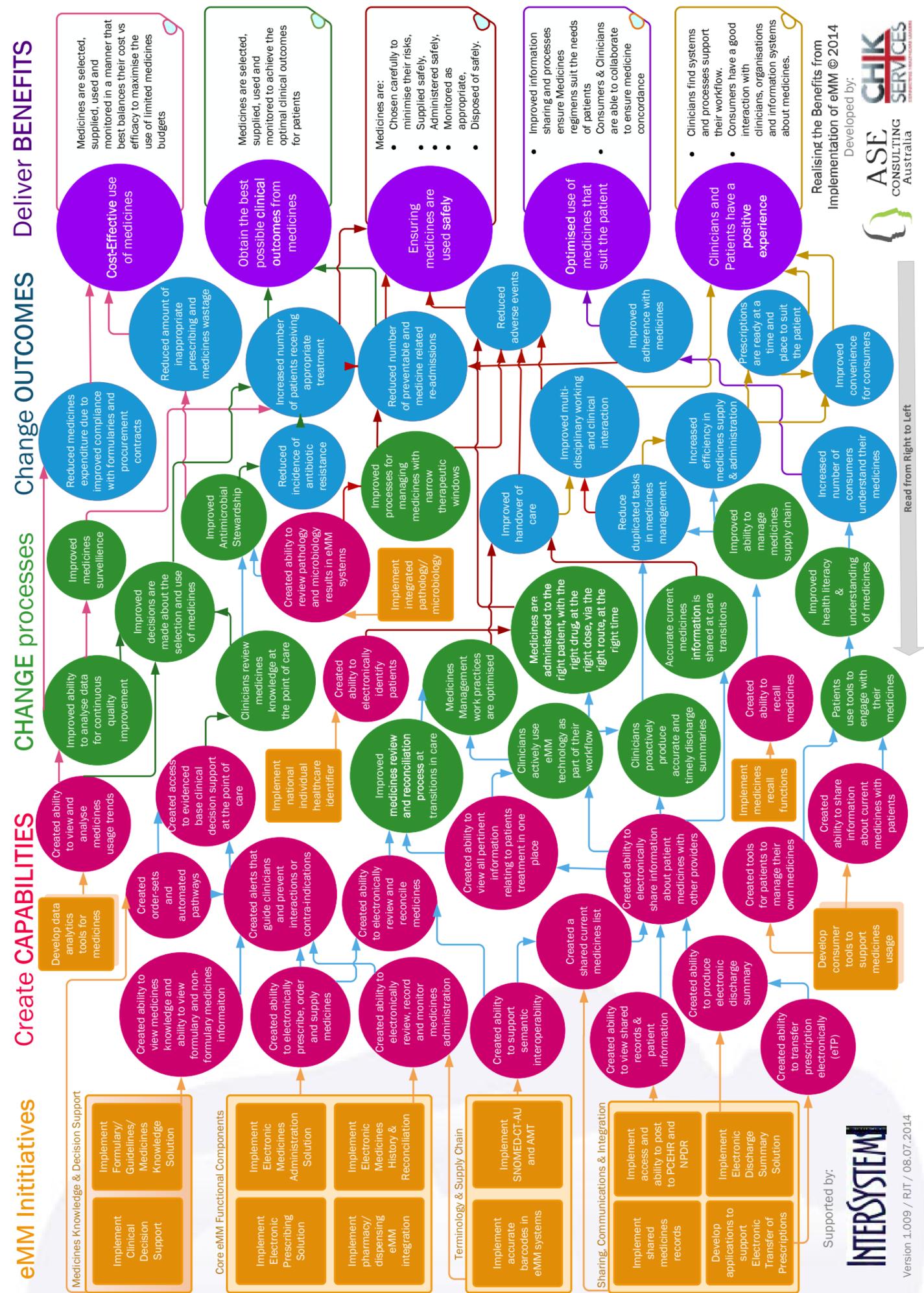
Lesson learned

Speakers and attendees at the Health-e-Nation Leadership Summit 2014 shared their implementation experiences and some of the key lessons learned. The following is a summary of their insights:

Take the first step

The principles of eMM are well supported by clinicians and executives alike and the evidence base is growing. Take the first step and start the conversation about eMM, look for the low hanging fruit and processes that can rapidly and inexpensively be optimised.

For example in Tasmania, electronic discharge prescribing and the use of an electronic formulary offered a good first step for clinicians to engage with eMM.

Effective Programme and Project Management

It is important to recognise that implementing an eMM system is a major transformational programme. eMM involves process changes that affect nearly every clinical service and department.

It is vital that robust programme and project management, adequate resources and strong governance mechanisms are in place and used from the start of the eMM implementation.

Actively manage benefits

Benefits need to be managed throughout the implementation to ensure they are realised as planned. It is important that implementers take a baseline at pre-transition to ensure that an accurate 'as-is' state of the organisation can be compared over time with the post-transition eMM solution.

Where possible, clinical management should have benefits realisation incorporated into their operational plans and individual 'Key Performance Indicators' to ensure they have 'skin in the game'.

Benefits should be reviewed independently, but signed off by the clinicians, consumers and other staff who receive the benefits wherever possible.

Focus on change management

As eMM affects nearly every clinical team, change management is a major overhead of eMM and is an important factor in the realisation of benefits. Without active change management, clinical staff quickly find work-arounds or develop practices that do not deliver the intended benefits.

Incentivise Clinicians and involve them early

Although clinicians may welcome financial incentives, it is more important to engage and excite them by eMM. Offering them the opportunity to contribute to the development of eMM solutions and incentivising them through the clear articulation and ongoing communication of benefits monitoring helps keep clinicians engaged.

Clinicians should have a voice at each level of eMM programme governance and there should be open dialogue and feedback throughout the implementation.

Implementers should seek to collaborate and partner with clinical teams and be sure to set clear expectations of the anticipated programme/project outputs.

Manage dis-benefits and set expectations

Whilst eMM can provide many benefits, there are some disadvantages post implementation. For clinicians in particular there may be an increase in the time it takes to complete certain tasks, such as completing a medications history or commencing a new treatment.

- Be clear and honest with clinicians and ensure they share the vision of the programme.
- Ensure that feedback is collected and improvements to the solution and workflow are considered and actions.
- Support clinicians to refine their use of the system and optimise their own workflow.

Involve consumers

Consumers are central to the medications management cycle and are a key stakeholder in eMM. Involving consumers in solution design and implementation is important as the consumer experience is a key success factor.

Consider Smart Phones

Clinicians and consumers want apps they can use with their smart phones, particularly for medications knowledge and decision support. eMM should take advantage of these apps and ensure they are designed for phones from the ground up.

About the Authors

ASE Consulting Australia

ASE Consulting are a professional services company who strive to enable their clients to deliver improved business outcomes through a highly personalised approach to supporting leadership and collaboration within their projects.

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CHIK Services

CHIK Services is a private, independent company, specifically established to engage with leading health sector stakeholders to promote improved clinical outcomes by leveraging technology and collaboration.

By promoting the use of appropriate information technology in the health sector, CHIK supports the transformation of clinical service provision and, as a result, helps deliver better healthcare worldwide.

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InterSystems

InterSystems Corporation is a global leader in software for connected care, with headquarters in Cambridge, Massachusetts, and offices in 25 countries.

InterSystems TrakCare™ is an Internet-based unified healthcare information system that rapidly delivers the benefits of an electronic patient record and features powerful Electronic Medications Management functionality. InterSystems HealthShare™ is a strategic healthcare informatics platform for information exchange and analytics within a hospital network, and across a community, region or nation. InterSystems CACHÉ® is the world's most widely used database system in clinical applications. InterSystems Ensemble® is a platform for rapid integration and the development of connectable applications.

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