

Maternal & Newborn Clinical Management System

Digital Maternity Challenge 2017



Building a Better Health Service

Digital Maternity Challenge



OoCIO TEAM

Led by HSE CIO, eHealth Ireland CEO, Richard Corbridge.

MAYO GENERAL HOSPITAL
LETTERKENNY GENERAL HOSPITAL
SLIGO GENERAL HOSPITAL
UNIVERSITY HOSPITAL GALWAY
PORTIUNCULA UNIVERSITY HOSPITAL
THE ROTUNDA HOSPITAL DUBLIN



CCIO TEAM

Led by HSE CCIO, Yvonne Goff & ICT Delivery Director for Acute Hospitals, Seamus Butler.

WEXFORD GENERAL HOSPITAL
UNIVERSITY HOSPITAL WATERFORD
SOUTH TIPPERARY GENERAL HOSPITAL
ST. LUKE'S GENERAL HOSPITAL CARLOW/KILKENNY
MIDLAND REGIONAL HOSPITAL PORTLAOISE
COOMBE WOMEN & INFANTS UNIVERSITY HOSPITAL



MN-CMS TEAM

Led by HSE MN-CMS Programme Manager, Caroline Cahill and Programme Delivery Director for Access to Information, Gemma Garvan.

UNIVERSITY MATERNITY HOSPITAL LIMERICK
MIDLAND REGIONAL HOSPITAL MULLINGAR
CAVAN GENERAL HOSPITAL
OUR LADY OF LOURDES DROGHEDA
THE NATIONAL MATERNITY HOSPITAL, HOLLES STREET



CORK UNIVERSITY MATERNITY HOSPITAL
WENT LIVE WITH MN-CMS IN DECEMBER



UNIVERSITY HOSPITAL KERRY
GOING LIVE WITH MN-CMS IN MARCH

Foreword



Minister for Health - Simon Harris

When we talk about challenges in the health service, it normally has negative connotations. eHealth Ireland is a new way of looking at things as this report shows, by delivering to us something we have not been able to get to before - a single snapshot of our maternity hospitals based on real, front line experiences. As a result, we now know what we need to do to implement integrated care in maternity as speedily as possible. That old adage 'it is a marathon not a sprint' springs to mind though. The team have delivered us this report in 24 hours; we now need to spend the time they have saved us to consider how we meet the challenge set back to us.

The HSE CIO has made it his own personal mission to deliver to Ireland a digital health system for children in the next two years. The publication of this report fires the starter's gun on the marathon towards meeting this next challenge.



Tracey Conroy - Assistant Secretary,
Department of Health

The introduction of an electronic health record for mothers and babies marks a very significant development in the delivery of maternity care. It will support better, safer clinical decision-making and a more connected health service delivering improved health outcomes.

It is fitting that this project went live in 2016; a landmark year for maternity services which included the publication of Ireland's first National Maternity Strategy. It is also a sign of our commitment to improve maternity services and to implement the Strategy. Additional investment funding provided for maternity services in recent years has supported the development of the new system. In view of the very significant potential benefits of the system, it is important that the electronic system is rolled out across all maternity hospitals/ units as a priority and extended to the community as early as possible, as is recommended in the Maternity Strategy. Congratulations to all those involved in its development and on-going implementation.



Tony O'Brien - Director General, HSE

A digital fabric for health is one of the key enablers for how we build a better health service, starting this change in maternity services and building from there puts Ireland at the forefront of a global change that no other country has achieved.

The digital challenge that we set the Office of the Chief Information Officer was ambitious, to work with every maternity hospital in Ireland to not just plan their go live in the next three years but to actually start the journey, and all in 24 hours, really does set a new precedent for how we will deliver digital health projects to our health system. Digital in health needs to be agile and this report shows that the Irish healthcare system can do this. We now need to act upon this report, the team assures me this is the number one priority for 2017.



Muiris O'Connor - Assistant Secretary,
Department of Health

The Department of Health is very encouraged by the successful implementation of the maternity and newborn digital system that is currently underway across our maternity hospitals. This is one of a range of national information systems that are being deployed to ensure that technology and analytics are used to raise clinical standards and to improve patient care. This is an essential part of our implementation of national eHealth Strategy and reflects the government's commitment to make our health and social care services more people-centred.

Foreword



**Killian McGrane - National Programme Director
Women and Infants' Health, HSE**

The introduction of the electronic health record, which has been an aspiration for many, many years, is now becoming a reality. The launch of Maternal and New born Clinical Management System (MN- CMS) in Cork University Maternity Hospital before Christmas was a hugely important development, and starts the process of making the theory of electronic record management, a reality.

Fundamentally, moving to an electronic health record in maternity services is about enhancing the care we can provide to mothers and their babies. The electronic record eliminates many of the risks inherent in paper based systems, and has already helped in streamlining the process in CUMH. One example of the risk reduction in the new MN-CMS is that the Irish Maternity Early Warning Score (IMEWS) is incorporated into the system. Observations on the woman are recorded on the system, and the system will flag when certain key measures are hit, prompting a response from the midwife managing the woman's care. While an electronic record will never eliminate the skills and experience of our maternity staff, the system provides vital information that will help to improve the quality of the care we can provide.

The launch of the MN-CMS in CUMH is a very welcome first step, and I look forward to the rollout in University Hospital Kerry, the Rotunda and the National Maternity Hospital later this year. But perhaps even more importantly, I welcome that we have finally demonstrated that an electronic record will work and the rollout across the entire acute hospital sector will be a very positive development for patients and their families.



**Dr Áine Carroll, National Director for Clinical Strategy and
Programmes Division, HSE**

The work of the National Clinical Programmes and Integrated Care Programme over the years have made it evident that, for integrated care to be truly patient centred, we need advanced technology systems to support the sharing of information and help to alert Clinicians when things are not quite as they should be. Such systems will enable Clinicians to look after patients effectively, efficiently and in a more holistic manner, irrespective of geographical, organisational or professional boundaries. As a Clinician, I welcome the success of the Maternity Digital Challenge because it shows what can be done when a group of enthusiastic and committed people come together to make change happen. As National Director, with responsibility for the design of Integrated Care in Ireland I am pleased to witness the start of positive digital changes within our health system, making patient centred integrated care more achievable. This is proof that a truly integrated healthcare system is possible in Ireland and that our investment in eHealth technologies are well guided. The future starts now!



Yvonne Goff - Chief Clinical Information Officer, HSE

A key principle enshrined in the eHealth Strategy is that leadership and engagement from clinical and IT staff will guide all programmes. This is because the delivery of an eHealth Ireland requires digital transformation and successful digital transformation requires true leadership.

The maternity digital challenge will facilitate us to really look at the digital gap that exists in our maternity hospitals and be aware of the challenges that staff will face in implementing the Maternity and Newborn Clinical Management System. The benefit of hearing these challenges, from the front users, is invaluable to us in helping to identify the digital gaps in our maternity hospitals. It is very obvious to me that we have an exceptionally diligent and strong workforce who are overcoming workflow obstacles each and every day in order to provide high quality patient care. It's examples like this where we can really see the benefits that engagement can bring to eHealth. There is still so much more to do and we are focused on delivering technology that is led by front users to support and to improve healthcare in Ireland with the people at the centre of every benefit we are attempting to achieve.



Richard Corbrige - HSE CIO, eHealth Ireland CEO

Digital health across the world is the most challenging digital environment to deliver benefits in! Why? I believe it is due to the starting points that exist, not to mention the sheer size of the work in hand and the absolute necessity to focus on the 'day job' first and consider the business change and digital need second.

It was out of this consideration that the maternity digital challenge was born, if you will pardon the pun. The huge success that has been delivered in Cork University Maternity Hospital and is indeed on schedule to be repeated in University Hospital Kerry is down to the preparation that the sites went through. Huge clinical engagement has been achieved through commitment, awareness and a desire to use new technology to build a better health service.

The maternity digital challenge will make clear to us all the gap that digital has to face in each of the maternity units of Ireland. It will provide us with a starting point to build from throughout 2017 and will make the start of the journey to a digital fabric for all of the maternity services throughout the country. By delivering the report into the public domain it will enable the digital teams within health to be transparent in what the need is and allow the team to keep all involved engaged in the journey that each unit is on towards becoming a health system supported by digital.

MN-CMS and the Digital Maternity Challenge

Meet the Teams

Project Background

Ireland is set to be the first country in the world to have a single electronic health record system (EHR) for its maternity hospitals. The Maternal and Newborn Clinical Management System (MN-CMS) is a national initiative to design and implement an electronic health record for all women and babies in maternity services in Ireland. This initiative promises automated recording and integrated care, meaning that all those involved in the care of mothers and babies in Irish maternity units have instant access to all current clinical detail and records.

In December 2016, the MN-CMS system was successfully implemented in Cork University Maternity Hospital, the first national go-live site. The national rollout is based on the successful trial of the digital health recording system already implemented and live in Cork University Hospital. The Rotunda Hospital and National Maternity Hospital in Dublin, and in University Hospital Kerry, are currently being rolled out and will be live shortly in 2017.

Following procurement in 2014, Cerner were selected as the EHR provider to deliver the system. Their solution is called Cerner Millennium.

Key Benefits

This system will provide a seamless, complete and reliable source of all the information clinicians require to quickly and to accurately make care decisions for the optimal well-being of mothers and infants across Ireland. The key overall benefits of the MN-CMS project are:

1. Improved patient care as a result of better communication, supported decision making and effective planning of care.
2. More effective and efficient recording of information reflecting best standards in documentation.
3. Enhanced clinical audit and research locally as a result of better quality data.
4. Informed business intelligence that will drive local and national management decisions.

Our Objective

Our ask is that each local site will:

- Form a project team comprised of local leads
- Nominate a local lead to begin liaising with the national team and other go-live sites
- Consider accommodation requirements for project duration



OoCIO team led by Richard Corbrige,
HSE CIO, eHealth Ireland CEO



The Office of the Chief Information Officer (OoCIO) is the HSE office responsible for the delivery of technology to support healthcare across Ireland. The OoCIO is charged with turning the eHealth Ireland Strategy into a reality, bringing improved population wellbeing, health service efficiencies and economic opportunity through the use of technology-enabled solutions. This team visited Mayo General Hospital, Letterkenny General Hospital, Sligo General Hospital, University Hospital Galway, Portlaoine University Hospital and the Rotunda Hospital Dublin.



CCIO team led by Yvonne Goff, HSE CCIO & Seamus Butler ICT Delivery Director for Acute Hospitals, HSE

The successful delivery of an integrated healthcare system requires clinical leadership and engagement. The purpose of the Council of Clinical Information Officers is to create and facilitate a network of expertise, consisting of clinicians and those who have experience in taking a leading role in delivering eHealth, to drive eHealth projects in Ireland. This team visited Wexford General Hospital, University Hospital Waterford, South Tipperary General Hospital, St. Luke's General Hospital Carlow/Kilkenny, Midland Regional Hospital Portlaoine and the Coombe Women & Infants University Hospital.



MN-CMS team led by Caroline Cahill, HSE MN-CMS Programme Manager and Gemma Garvan, Programme Delivery Director for Access to Information, HSE

The MN-CMS Project is the design and implementation of an electronic health record (EHR) for all women and babies in maternity services in Ireland. This record will allow all information to be shared with relevant providers of care as and when required. This team visited University Maternity Hospital Limerick, Midland Regional Hospital Mullingar, Cavan General Hospital, Our Lady of Lourdes Drogheda and the National Maternity Hospital, Holles Street.

Key



Maternity beds per hospital



IT staff in proportion to rest of staff



Births in 2016



Quote from relevant staff member

Acronyms

Agfa -	IT System in Saolta
CNM -	Clinical Nurse Manager
COWs -	Computer on Wheels
CTG -	Cardio Topography
ECAM -	Enterprise Consolidation & Application Modernisation
EHR -	Electronic Health Record
IPMS -	Integrated Patient Management System
LIT -	Local Implementation Team
MIR -	Management Information Requests
MN-CMS -	Maternal & Newborn Clinical Management System
NHN -	National Health Network
NICU -	Neonatal Intensive Care Unit
NIMIS -	National Integrated Medical Imaging System
NIMIS -	National Integrated Management Imaging System
NPT -	National Project Team
OoCIO -	Office of the CIO
PHN -	Public Health Nurse
WTE -	Whole Time Equivalent
Viewpoint -	Obstetrics and Gynaecology Imaging Software
WOW -	Workstation on Wheels
QA -	Quality Assurance

The information gathered at each hospital is a snapshot and representative of the opinions of the people spoken to on that day. It is not a statistical reflection on any of the hospitals.

Challenges & Needs

We asked each hospital:

- What they needed and what challenges they faced.
- What their starting point digitally was and what impact the implementation of MN-CMS could have had on the wider hospital.

Gains & Requirements

We asked each hospital:

- To identify what they'd like to be fixed in 2017 (what they'd gain or required)
- What impact this will have?

Graph of Integrated Care & Efficiency

We asked each hospital:

- What do you believe the level of integrated care is currently? (On a scale from 1 – 10)
- What do you believe the level of efficiency is currently? (On a scale from 1 – 10)

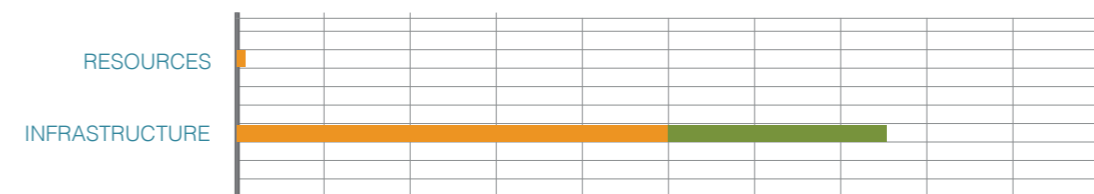
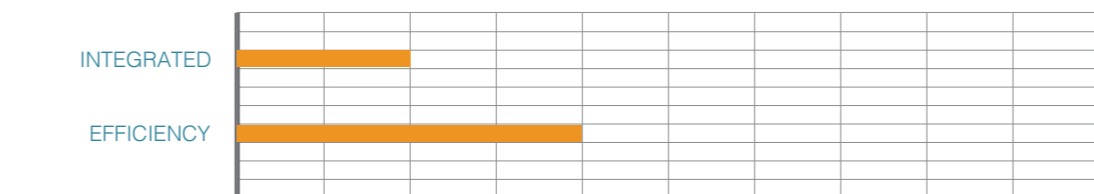
Graph of Resources and Infrastructure

We asked:

How many people support IT?

On a scale of 1-100 where do you think you are presently on your level of infrastructure?

As a follow up: As a percentage how much more infrastructure do you think you will need to implement the MN-CMS successfully?





Digital Challenge:

MN-CMS went live December 2016

"MN-CMS is a 'Pathfinder' project even in its need to navigate the various peer reviews. It is a project that needs a significant input still & in addition needs to be funded as a resource to assess EHR in the Irish health system."

Richard Greene
Director of NPEC & Professor of Clinical Obstetrics

"Resourcing is challenging, the team were excellent, they had to be very creative and often individuals fulfilled multiple roles. Support of Senior Management is invaluable. The project gave staff an opportunity to use additional skills"

Monica O'Regan
MN-CMS Project Manager



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Perceived Challenges before implementation of MN-CMS

- Concerns around staff resistance and reluctance toward adoption due to the amount of change to workflows caused by the implementation
- Emergence of parallel paper systems due to reluctance towards adoption / perceived difficulties around using a new system

Actual Challenges after implementation of MN-CMS

- Wi-Fi challenges when using the new laptops. This was not a perceived challenge before implementation because it was expected that the new equipment would have fully functional Wi-Fi capabilities. Stress testing Wi-Fi stability is recommended.
- Communication Challenges were significant during and after implementation, largely due to inadequate resources over the years, which caused problems with GPs, PHNs and others.
- Early teambuilding between the LIT and NPT, having the NPT on site early, and fostering a unified approach to meet challenges. This is a key lesson learnt that aided the resolution of the communications challenges.
- Releasing clinical staff for training was a significant challenge. This challenge was met with great assistance from management and staff with over 800 staff being trained.
- The lack of opportunity for staff to 'play' on a training domain was a major deficit; this should be a main objective before future rollouts. A suggested win for future sites would be to provide time to learn workflow changes in advance of application training and to allow sufficient time to robustly test integration.
- Additional preparation of the health system is required to take on the complex Electronic Health Record implantation.
- An improved understanding of the project needs within the IT architecture nationally is needed.
- Allowing sufficient time for hardware procurement is a challenge not to be underestimated.
- The need for a Systems Management Team is now apparent to ensure on-going compliance, quality and optimisation.

Gains and requirements after implementation of MN-CMS

- Access to information is a key gain of this project and a huge benefit to the delivery of a truly integrated maternity service. Front users have access to patient information from any location, in one central location, without having to locate or queue for a chart. This information is also legible and easily retrieved.
- Easily accessible and accurate national patient data is very valuable. The ability to understand and generate a national view of maternity care, treatments, and outcomes, with the capacity to pull data together on a scale never before possible, will help to drive up overall national standards of care.
- The patient will have the ability to walk into any Maternity Hospital in the country and have current records available to them to ensure they receive immediate and appropriate care and attention.
- Alerts and protections built in to the system are already enhancing care with the potential to identify errors, especially drug errors, even in these early days.
- Other gains include the beginnings of standardization in documentation, the potential of reports to assess documentation and help improve it within hours, immediacy of feedback.



University Hospital Kerry

Ospidéal na hOllscoile, Ciarraí
University Hospital Kerry



Challenges & Gains

Digital Challenge:

University Hospital Kerry would like 2 Un-interrupted Power Supply Sockets for the 724 Downtime Viewer

"The challenge of managing expectations during training exists, as staff can expect a lot of themselves, the use of the term 'Super User' can exert pressure."

Fiona Lawlor
MN-CMS Project Manager,
CNMIII

"There will be a larger user base, a greater number of digital savvy staff. It is great to see the site progressing, another digital solution implemented. The team here are fantastic."

Pat O'Driscoll
ICT Manager



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Perceived Challenges before implementation of MN-CMS

- There were challenges during the procurement process. The initial premise that the same equipment would suit all (e.g. carts) proved infeasible due to the vast differences between hospital sizes and layouts.
- The challenge of PC skills is perceived and actual, in particular changing mind-sets in relation to the legitimate use of logins and protecting passwords is challenging.
- The challenge of overcoming fear was real, particularly in relation to system downtime, as it will prove challenging initially for staff delivering care and using a PC or laptop at the point of care. It is important to ensure that a robust downtime policy is in place.
- Resourcing the project has proved very challenging. A key method of overcoming this to ensure a project team, and key people, are allocated as early as possible in the implementation process.
- Training challenges arose in the area of getting staff released; the site became very creative, taking measures such as curtailing leave during training. Post go Live Training needs and challenges will continue after implementation. There is a need for a national training approach.
- The challenge of space and of storing equipment prior to go live arose because assembly and storage of carts requires space.
- The need for additional data points in clinical rooms and wards.
- Challenges in the areas of integration testing, labs, meds and system testing cannot be underestimated.
- Challenges of determining responsibilities may arise, as solutions increase in complexity, this solution involves National and Local ICT, Cerner, Biomed, Local Back Office, National Back Office, clear roles and responsibilities are required. Challenges in the area of support may arise.

Gains and requirements after implementation of MN-CMS

Expected gains for staff include:

- Increase in staff IT proficiency
- Benefits from the reporting and auditing capabilities
- Ease of access to information because mother and baby records are connected and related

Expected gains for patients include:

- Assisted decision making
- Increased medication safety
- Access to information.





Digital Challenge:

Tablets for staff to get more used to the technology



"It is exciting to have something fully comprehensive, user friendly, that will unite the whole maternity service Ireland wide, saving time to use in patient care."

Maureen Hanlon
Clinical Midwifery Manager

"Basic keyboard skills are still an obstacle, small aspects can bring resistance to change"

Diane Brady
Clinical Midwife Manager

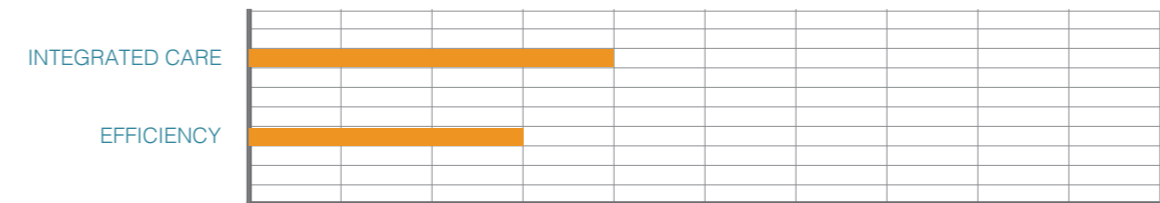

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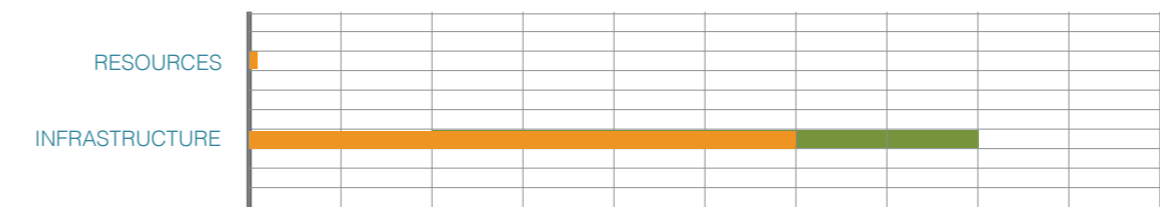
Challenges & Needs Identified

- Fear of the unknown is still the main concern, however everyone in the maternity unit has a little insight into IT systems from previous experiences.
- There is a system in place but it's very old. There are concerns about how to migrate this data and cleanse. There are also concerns about whether to keep a history of data separate in the older system? Basic training required now so that people are more ready for the IT side of working.
- Who is going to be the super user and Clinical Lead?- these are decisions the hospital needs to consider.
- Concerns around how much training is needed, as in how to free resources to attend training.
- General concerns about what the system looks like? Concerns around relationships and existing processes and how they translate, for e.g. What happens with GP's? or transfers to other hospitals?
- Concerns about data protection, consent to share & workflows.



Gains & Requirements

- Upgrade Patient Admin System, and give staff access to WIFI
- The system in place is old, the info is only as good as what goes into it. Retrieving data is difficult. New system will increase access to information, be able to run reports, and will give staff an increased confidence in the technology from training. There will be dedicated superusers who can guide others.
- Benefits include, accessibility, clarity, chronological, no missing notes, security, always having the information at hand.
- No more repetition of information, quicker admin, enabling more direct fact to face interaction with patients.



- Catherine Donohue - General Manager
- Jarlath Mongan - IT Service Management
- Mary Casey - IT Support
- Andrea McGrill
- Diane Brady - Clinical Midwife Manager
- Maureen Hanlon - Clinical Midwifery Manager
- Dr. Hilary Ikele – Consultant Obstetrician
- Dr Kamal El-Mahi Consultant Obstetrician
- Michael O'Neill – Associate Clinical Director



Letterkenny General Hospital



Challenges & Gains

Digital Challenge:

Upgraded patient admin system and staff access to wifi.

“Standardised documentation, only having to ask the patient their information once, wow”

Anthony Campbell
ICT Systems

“There is a degree of familiarity with existing systems, but there is also the appetite to innovate and move forward”

Sean Murphy
General Hospital Manager

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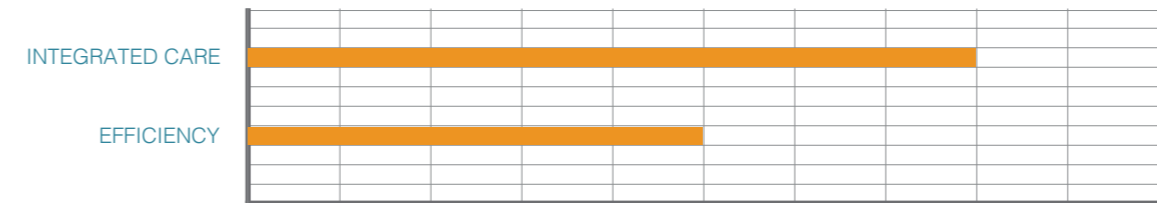
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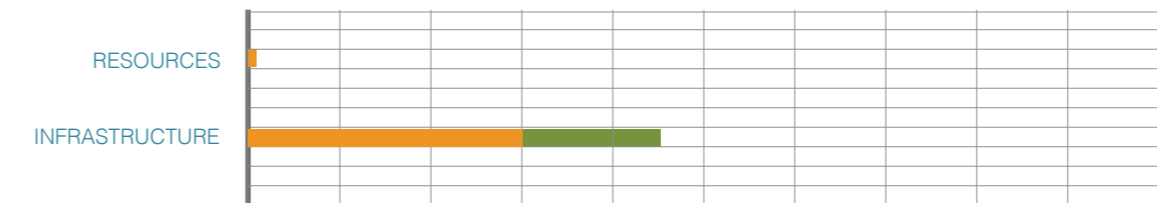
Challenges & Needs Identified

- Concerns around clinical governance - highlighted that caution needs to be warranted towards any potential clinical risks when integrating different systems together – “it needs to be a smooth movement”. Furthermore, the staff at Letterkenny want to ensure that their adoption of MN-CMS is aligned with preferences of overall Saolta group.
- Data retrieval: highlighted that it needs to be clear what information will be available electronically and what information will continue to be accessed from paper-based files. Confusion raised surrounding the method of data storage, i.e. cloud-based system. Hospital staff enquired about process for obtaining patient files generated in other hospitals.
- Challenges also include resources, clinical governance, system integration, change management, data retrieval, data input & patient access.



Gains & Requirements

- MN-CNMS system will provide clinicians with valuable learning opportunities, facilitating review and discussion of methods of patient care more effectively. The opportunity to develop related apps from the digitalised information will also be useful for parents who wish to have access to the monitoring of their babies. Furthermore, the capacity of systems to alert clinicians as appropriate based on patient status will also enhance patient care.
- Data collection and analysis: the information afforded by the MN-CMS system will enhance the process through which clinicians can communicate or handover patient information to one another.
- Information standardisation: adoption of the MN-CMS system will facilitate the standardisation of information being collected throughout Ireland’s maternity hospitals.
- Customisation: in addition to the above, individual hospitals will have the capability to design templates for reports and information for local use



- Sean Murphy - General Hospital Manager
- Evelyn Smith - Director of Midwifery
- Matthew Thomson - Paediatric Consultant
- Mary Lynch - Clinical Midwife Manager
- Henry McKinney - Lab Manager
- Anna McHugh - Lead NCHD
- Colm Devine - Chief Pharmacist
- Laurence Moore - ICT
- Trevor Carlin ICT – Systems
- Anthony Campbell - ICT – Systems





Digital Challenge:

A number of COWs and mobile computing devices to facilitate staff in becoming familiar with newer technology.



“From a paediatrician point of view, we feel that the communication improvements brought about by this system will ensure that any issues or problems with the maternity process can be managed as quickly and effectively as possible”

Dr Tummaluru
Consultant Paediatrician

“We have went through the process of implementation with NIMIS and are aware of the challenges but also the benefits of having these systems available for our staff and patients. We are a hospital that embraces ICT.”

Barry McKenna
SUH IT Manager

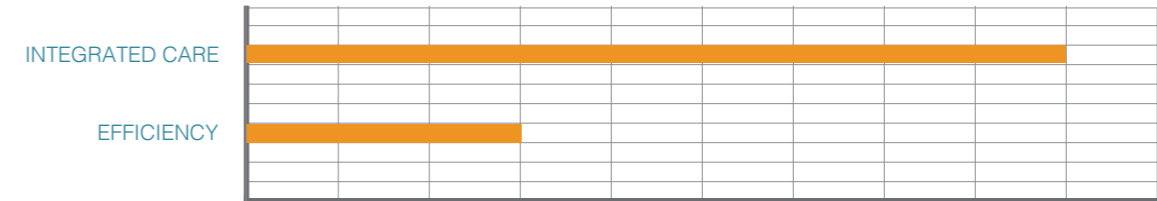

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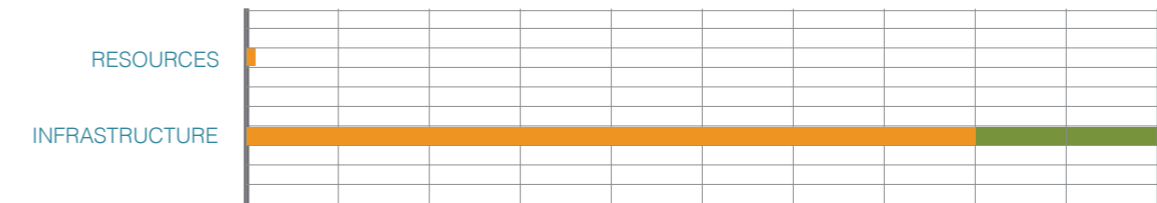
Challenges & Needs Identified

- Staffing: The service has a nurse in place with responsibility for the QA aspect of the data generated by the existing MIR but this person is not an MIR system manager. The service will need 2 WTEs additional person from the service to assist the IT quality manager during the new system implementation. And staff required to assist with infrastructure rollout, integration and data migration and project management.
- Funding: to make existing MIRs ECAM compliant and investment in mobile computing technology. This would include COWs, bedside devices and tablets etc. Hospital will be guided by the supplier, the national MN-CMS team and the experiences of other hospitals in this regard.
- Engagement: Need to have engagement from across the entire hospital and from GPs.
- A dedicated system manager in maternity as we feel this is a big gap that needs to get addressed going forward and preparing for the MN-CMS implementation.



Gains & Requirements

- Would like increased funding and support in 2017 to: make existing MIR server Microsoft compliant, extract data from MIR servers to inform the Robson classification of Caesarean Sections, review the readiness of existing infrastructure to meet MN-CMS requirements and upgrade their current PC network.
- Improved communication and access to information, enhanced efficiency, improved record management and outcome measurement, reduction in quantities of paper-based documents, reduction in administrative burden and filing and increased continuity of care for subsequent and follow-up appointments.



- Grainne McCann - General Manager
- Dr Tummaluru – Consultant Paediatrician
- Julianna Henry - Director of Midwifery
- Barry McKenna - SUH IT Manager
- Mike McCrohan - Ops and Infrastructure
- Phelim O'Rourke - Data Centre Manager
- Madeiline Munnely - IT/Quality Assurance
- Dara Gallagher - Paediatric Consultant
- Hillary Greaney - Paediatric Consultant
- Orla Neylon - Paediatric Consultant
- Justin Lane - Anaesthetic Consultant.
- Marie Kennedy - NICU Clinical Nurse Manager.
- Patricia Dolan - Clinical Admin Manager
- Heather Langan - Obs and Gynae Consultant .
- Nirmala Kondavetti - Obs and Gynae Consultant
- John Williams - Head Of Pathology
- Brian Rattigan - Head of Pharmacy





Digital Challenge:

Delivery of 5 wireless COWS.

"This will be a huge culture change for staff to embrace the technology and move from a paper process to a technology process. People will need support as they adapt to this new environment"

Dr Ethal Ryan
Clinical Director

"At the heart of what we do is to deliver services ensuring patient safety. The roll out of MN CNMS will provide access to the electronic record no matter where they are within the Saolta group"

Margaret Coohill
Practice Development Coordinator

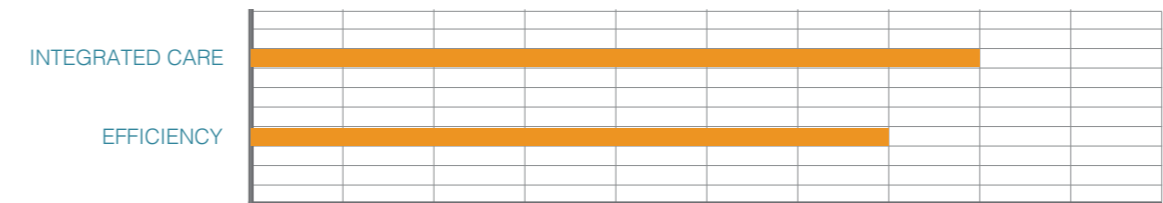

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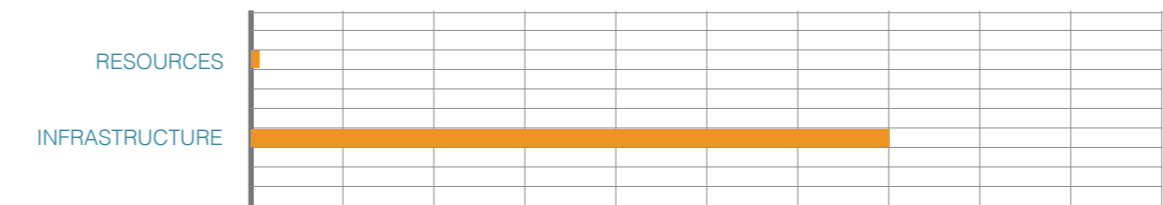
Challenges & Needs Identified

- More clinical and ICT staff for implementation.
- Improved wifi coverage across the department.
- People to manage the roll out of the MN-CMS and the ICT and support staff considering the significant demands on implementation of other systems and technology. Need project team and will need trainers. Staffing resources are limited as are IT hardware resources.
- UHG has not no interface between PACS (Agfa and NIMIS).
- Data Quality – GPs and Hospitals difficult to establish patient ID within the existing process of combined care. How will GP's access records? How do Community Midwives interact with the system?
- New system may initially lead to longer waiting times in clinics as staff get used to inputting.



Gains & Requirements

- Delivery of wider wifi capabilities through additional access points for the department and the hospital to implement new systems.
- Provide greater access to patient information that will allow more efficient service to patients. This will provide reduced risk to error. The early use of COWs will begin to change the culture of how people work in delivering services to patients in a digital environment.



- Martin Molloy – Information Services Manager.
- Marie Hession – IT Maternity.
- Anne Marie Grealish - ADoM.
- Dr Kathryn Aspery – Consultant Obstetrician.
- Dr Ethal Ryan – Clinical Director
- Margaret Coohill – Practice Development Coordinator.



The Rotunda Hospital Dublin



Challenges & Gains

Digital Challenge:

Implementation of project plan and all the activities within.



“Our main challenge will be enabling approx. 800 staff to be released for end user training over a seven week time frame. While this will be very challenging but will be essential in order to minimise clinical risk post go-live.”

Rhona Drummond
MN-CMS Meds Lead

“We have a really enthusiastic team who have been working on the project for a number of years and are excited to move forward.”

Pauline Treanor
Secretary/Group
General Manager



198



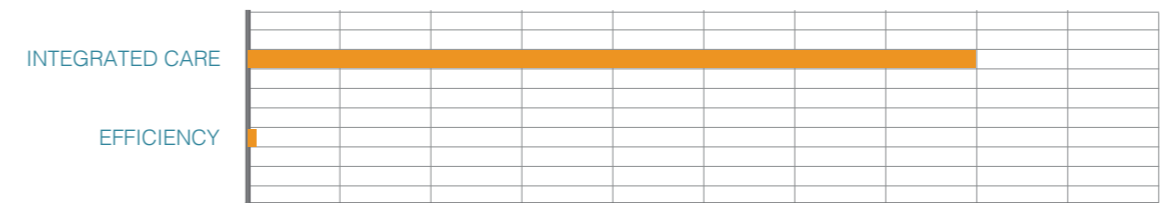
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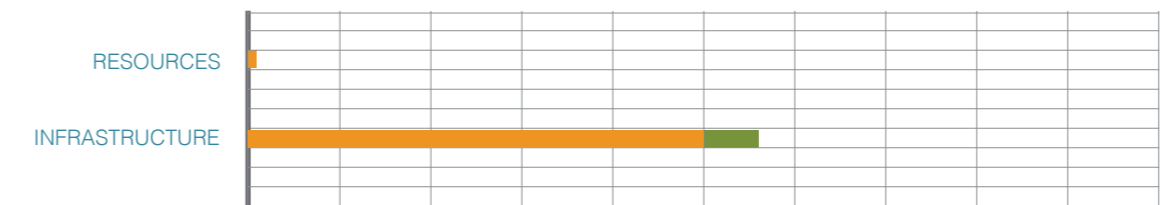
Challenges & Needs Identified

- Resourcing to help with the change management/ communication work. Support from other National Systems/ HSE to ensure interfaces are scoped and tested early.
- Clear lines of support post go-live (voluntary versus HSE hospitals).
- Inclusion of Gynaecology in the scope of MN-CMS as this affects multiple areas of the hospital where dual documentation will continue.
- A clear domain strategy to ensure Rotunda can provide ongoing training and enable end users to practice when required. Resourcing for release of trainers/ super users and end user.
- Need single sign on ability and eventually integration with all existing systems with MN-CMS.



Gains & Requirements

- Completion of anaesthetic Module and begin process of procurement for Gynae module.
- Patients will no longer carry notes so no direct access to maternity outpatient record – Shared Care with GP record impact.
- Fit of digital into a building built in 1757, challenges in terms of wifi & space.



- Pauline Treanor - Secretary/Group General Manager
- Rhona Drummond - MN-CMS Local Project Manager
- Brian Cleary - Chief Pharmacist, MN-CMS Meds Lead
- Niamh Hegarty - MN-CMS Testing Lead
- Paula Scully - MN-CMS Training Lead
- Sam C Smith - Consultant Obstetrician/ Gynaecologist
- David Corcoran - Consultant Neonatologist
- Anne Doherty - Consultant Anaesthetist
- Maeve Eogan - Consultant Obstetrician/ Gynaecologist
- Fiona Hanrahan - Assistant Director Nursing/ Midwifery
- Sheila Breen - Quality & Patient Safety



Wexford General Hospital



Challenges & Gains

Digital Challenge:

Public WiFi – in particular for the library.

“Releasing staff is a challenge – one person released from a smaller hospital has a significant impact on service delivery, however one person from a larger hospital may be more easily absorbed.”

Con Murphy
Obstetric Lead

“At the moment everyone is writing everywhere. This system will be safer, easier to maintain. There isn't the finding charts and missing pieces.”

Lily Byrnes
General Manager

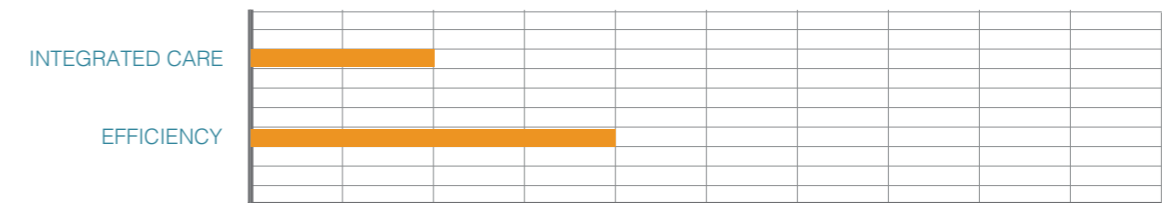
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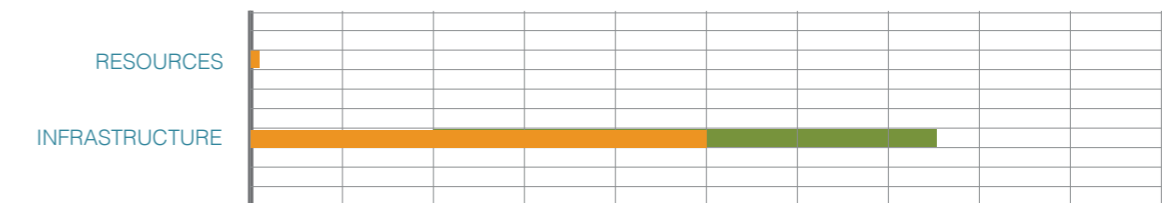
Challenges & Needs Identified

- Identified need for significant resources to be released to become super users, to become trainers and to become implementers of the system.
- Would likely need additional laptops on wheels, tablets and static PCs. Reluctance to have more until proper training available.
- Also concerned about how MN-CMS would integrate with other interfaces in the general hospital's system.
- IPMS and NIMIS in place. Successfully implemented both so feel have a good grasp of the skills required to make change and feel confident that they can. Capacity to support the implementation of MN-CMS from past experiences.



Gains & Requirements

- Workstations for key staff who will be involved in implementing the system so that they can be trained early and get used to working on the workstations.
- Safer, easier to maintain, accessible information.
- Leading to better quality healthcare and safer outcomes for patient.



- Lily Byrnes, General Manager
- Eleanor Carpenter, Assistant Director of Nursing
- Dr. Asish Das, Consultant Obstetrician/Gynaecologist
- Ms. Helen McLoughlin, CMM3/Women's & Children's Services
- Con Murphy, Obstetric Lead



South Tipperary General Hospital



Challenges & Gains

Digital Challenge:

Access the global address book to contact other members of the South-West Hospital Group.



"This system will enable clinicians to work more efficiently and effectively with all information at our fingertips - digitisation makes information a lot easier to find."

Dr Vijayashree Hiremath
Consultant Obstetrician /
Gynaecologist

"The implementation will be a significant hit to the likes of us, we understand that we need to do it, but it will be difficult, especially when it comes to staff and resources."

Maria Barry, General
Manager



28



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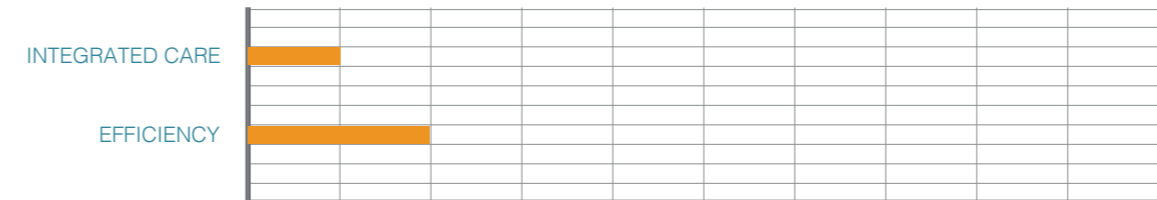
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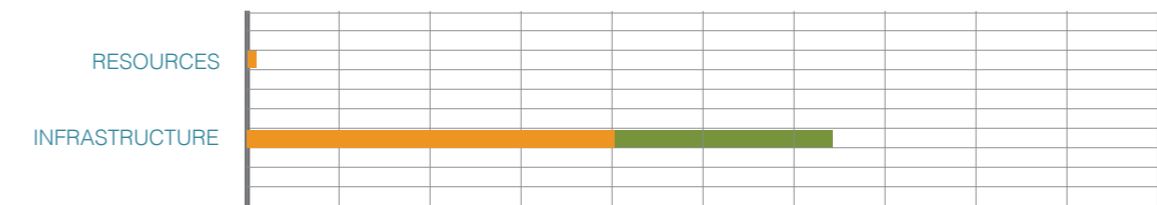
Challenges & Needs Identified

- Staffing – setting up a local implementation team especially in a small hospital where staff already have a huge workload is a challenge, especially releasing midwives and super users.
- Paper elimination – the hospital is currently purely manual.
- Physical space – the hospital layout is quite antiquated. There is a lack of physical space for computers on the ward. Also, concerns around space for training. The education room is already occupied.
- Training and education – concerns around releasing staff and training super users. The implementation of such a large system will be a significant hit to staff in such a small hospital.



Gains & Requirements

- WiFi is available in the hospital, however it is not clear what the support mechanisms and procedures are around the delivery. Hope to get this resolved.
- Secure mechanism for communicating to staff – e.g. if a manager needs to secure cover at short notice they have to call around to all staff until they find someone available. This is very time consuming.
- Digital solutions which will enable staff to work more efficiently and effectively and make information a lot easier to find.



- Ms Maria Barry - General Manager
- Ms Sinead Heaney - Director of Midwifery
- Dr Vijayashree Hiremath - Consultant Obstetrician / Gynaecologist
- Lilian Medley - Access and Performance Manager
- Tim Murray - Technical Support, IT Department



St. Luke's General Hospital Carlow/Kilkenny



Challenges & Gains

Digital Challenge:

Investigation in to a messaging issue between IPMS and NIMIS.

"The MN-CMS will improve efficiency and interfacing, especially with relevant people"

Connie McDonagh
CNM3 Maternity

"MN- CMS will allow for better quality information at all levels"

Anne Slattery
Hospital Manager



30



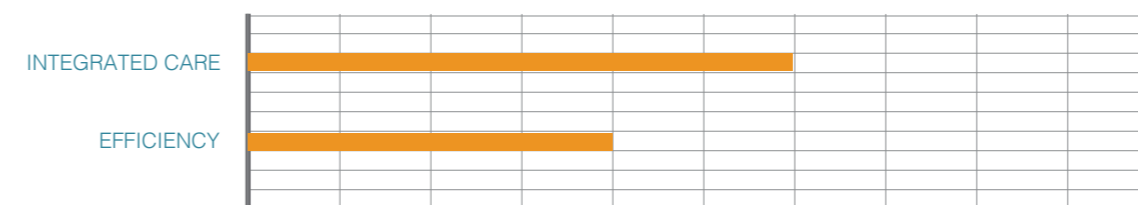
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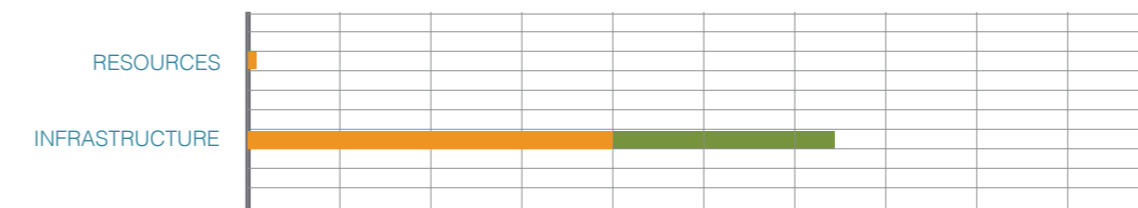
Challenges & Needs Identified

- To know how to release staff to become super users and continue to deliver high quality service. General concerns about the release of subject matter experts and midwifery staff to become trainers.
- To resolve the challenge of building and maintaining an implementation team when resources are already tight.
- Access to information for patients – currently maternity patients have access to their own charts, will this still be possible when MN-CMS is rolled out?
- There are concerns over bringing in another system - currently, using a standalone pharmacy system, which doesn't talk to NIMIS or accounts payable.



Gains & Requirements

- Mobile devices – currently have fixed stations and PC which takes up a lot of space.
- COW or two with dummy applications for staff to start using the system.
- Patient Wifi.
- All of which leads to safer, easier to maintain, accessible information and better quality healthcare.



- Ciara Purcell - A/CPCM
- Deirdre Powell - Shift Leader Maternity
- Connie McDough - CNM3 Maternity
- Gaosielle Power - Admissions Department
- Carnie Doorley - Radiography Services Manager
- Joau Byrne - Radiology Clerical
- Mary Ryan - Obs/ Gynaecologist
- Eleanor Moore - Business Manager
- Pat Shorthall - Deputy GM
- Olive Flynn - Haemouigilance CNS
- Elaine Martin - Admissions
- Nadia Shugulam - A/ Medical Records Officer



Digital Challenge:

Overnight back-up and further assistance required around extraction reporting.

“An efficient, user-friendly system like this will be invaluable to patient care if it could start as soon as possible.”

Maureen Reviles
Director of Midwifery

“Information silos are still a major obstacle for us.”

Ita Kinsells
CNM3

29

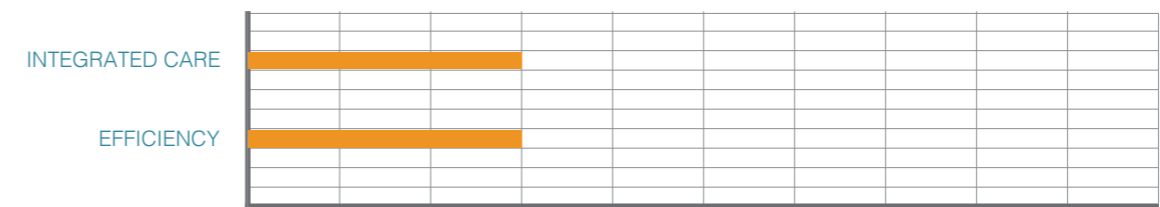
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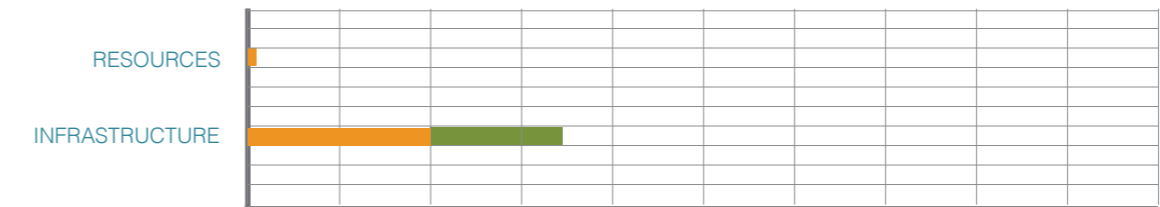
Challenges & Needs Identified

- Electronic records, Infrastructure, especially hardware, IT Support incl. 24 hour support, Training of staff on how to use the system, WiFi.
- Managing the change, especially staff who may not be computer literate. There are concerns around the number of staff required for training – training of staff necessary but not always possible.
- No mobile equipment or WiFi.



Gains & Requirements

- Integrated systems will be invaluable to patient care.
- It will build the confidence and boost morale of staff.
- WIFI



- Michael Knowles - General Manager
- Matt Corcoran - Operations manager
- Dr John Connaughton – Medical Director
- Mr Hosam Elkininy – Obstetrician/ Gynaecologist Consultant
- Maureen Reviles - Director of Midwifery
- Ita Kinsells – CNM3
- Susan O Callaghan – Clinical Skills Facilitator Maternity



Coombe Women & Infants University Hospital




Challenges & Gains

Digital Challenge:

Cabling infrastructure.

“The benefits are enormous and there is huge potential in terms of patient safety, but it is a big change management project”

Dr Sharon Sheehan
Master/ CEO



150



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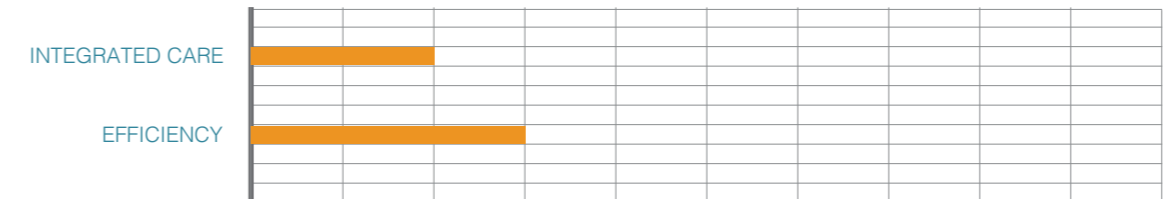
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- Ann Bowers - RM, Acting Practice Development Manager
- Ann MacIntyre - Acting Director of Midwifery & Nursing
- Ann Fergus - CMN3, Delivery Suite
- Anne Jesudason - CMM3
- Ann Shannon - Patient Services Manager
- Emma McNamee - IT
- Frances Richardson - Assistant Director of Midwifery
- Ita Burke - ADOM/N
- John Kelleher - Consultant Neonatologist & Director of Paediatrics & Newborn Medicine
- Karl Bergin -Clinical Engineering
- Mairead McGuire - Chief Pharmacist
- Martina Ring -Lab Manager
- Patrick Donohue - Secretary & General Manager

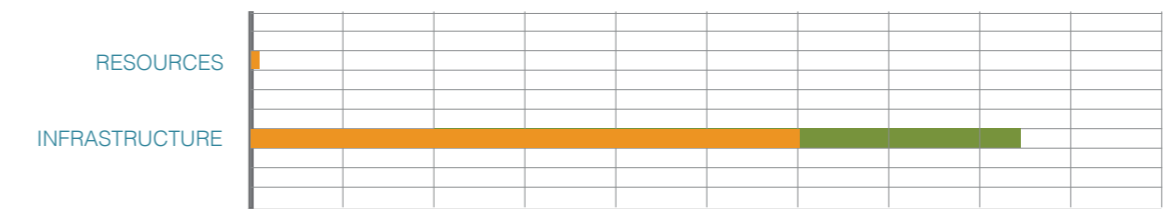
Challenges & Needs Identified

- Better infrastructure – challenges exist in particular around physical space.
- Staff – staff are not used to working in real time in IT, so implementation will be a big change. Concerns about the release of subject matter experts and midwifery staff to become trainers. Also concerns around change management.
- Mandatory fields within system to be completed in input to reduce the QA issues the day later which takes midwives away from care.



Gains & Requirements

- Maintaining the GP catalogue, updating existing systems.
- Paper trail gone, access to information at any point.
- Capability to audit projects.
- Improved quality of care & safer care.



University Maternity Hospital Limerick



Challenges & Gains

Digital Challenge:

Wifi across site. Cardio Topography - permanent recording system.

"It's a much nicer experience for the mother – in every other aspect of their lives they use electronics. They are all surprised we are on paper – if we had the system we could reduce the frustration of our very old systems."

Bernadette Murphy
Clinical Pharmacist

"We've seen it, we're very impressed with it – right from the time the mother is referred it maps the whole journey. It won't let you move care on until everything gets completed. Those prompts ensure the system is very safe – safety is our focus."

Margaret Quigley
Director of Midwifery

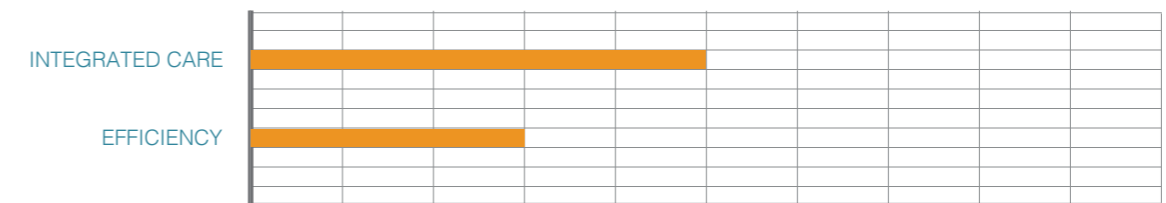
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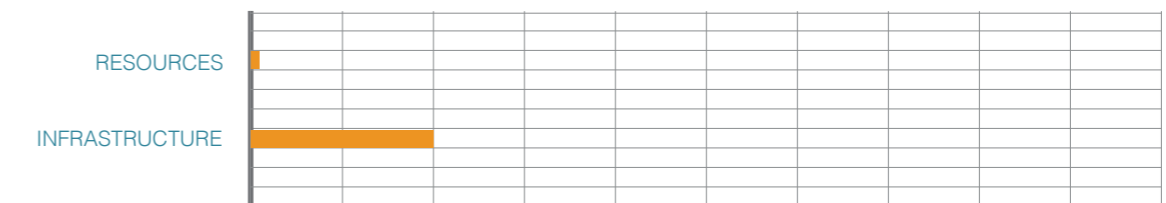
Challenges & Needs Identified

- Hospital has very limited capability to collect data (e.g. clinical data on labour ward...). It's a major gap at the moment. Would like to be prioritised (for MN-CMS) or get an interim solution if hospital is not being prioritised.
- It'll be a challenge introducing it to the clinical team – daunting the size of the change for staff. Releasing staff for training is a massive undertaking.
- Other challenges include: Core IT competencies need a lot of updating – internal IT team could do with some more help on this.
- Infrastructure is very dated. Local site down recently for 10hrs due to single NHN connection.



Gains & Requirements

- Hoping to fix IPMS talking to Viewpoint.
- Redundancy on NHN link fixed/ Video conferencing link.
- Risk management as there is no clinical data management system. Can't audit / can't produce reports / can't benchmark, everything is manual.
- Key gains for hospital will be the ability to manage risk / minimise risks for patients.



- Dr Menindinaro Imcha - Consultant Obstetrics & Gynaecologist
- Bernadette Murphy – Clinical Pharmacist
- Louise Reid - Quality Facilitator
- Bernadette Nolan - Safety Coordinator
- Brian McKeon - Director of Informatics
- Eamon Leahy - Business Manager
- Mary O'Brien - General Manager, MCH Director
- Margaret Quigley - Director of Midwifery
- Suzanne Jackman - Clinical Skills Facilitator
- John Slevin - Consultant Obstetrics & Gynaecologist



Midland Regional Hospital Mullingar



Challenges & Gains

Digital Challenge:

Help team get access to WiFi.

"We'll be able to access the information we need, we won't have to ask the patient to repeat everything."

Anne McGuire
CNM 2

"We've been looking for this for 15 years – it will help everyone"

Dr Sam Thomas
Clinical Lead, Women & Children



42

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Challenges & Needs Identified

- Resources: Currently multiple vacant positions. Unable to appoint, not just funding. Struggling to get people to cover shifts – let alone identify project roles / release for training.
- To build up a local team – real concerns about the resources. Releasing of midwives will be very challenging even though that is necessary for the group.
- To build up local IT capability – local clinical staff have variable computer ability. Will need significant support to manage these transitions.
- Infrastructure – need more terminals, very limited computers on units also need overhaul of CTG machine.

INTEGRATED CARE															
EFFICIENCY															

Gains & Requirements

- Longer term – WiFi across the whole hospital.
- Starting to setup own team to actually assess what's required for these major projects.
- Better patient experience – chart is available regardless of location (Mullingar, Satellite sites, Dublin)

RESOURCES															
INFRASTRUCTURE															



- Anne McGuire, CNM 2
- Danny Connaughton - Business Manager, Women & Children
- Dr Sam Thomas - Clinical Lead, Women & Children
- Angela Daly - CNM 2
- Caroline Fox - RM/RGN
- Gemma Gannon - CMM 2
- Caroline Carey - CMM 2



Digital Challenge:

Get access to a COW / WOW to see how it works in clinical environment.



“The system will enable us to really provide continuity of care. All aspects of the patient journey will be accessible.”

Cavan General Hospital

“We won’t be wasting our time on documentation anymore, no more writing out envelopes / letters by hand, and we’ll have more time to spend with patients”

**Emer Woods
Midwife**



33



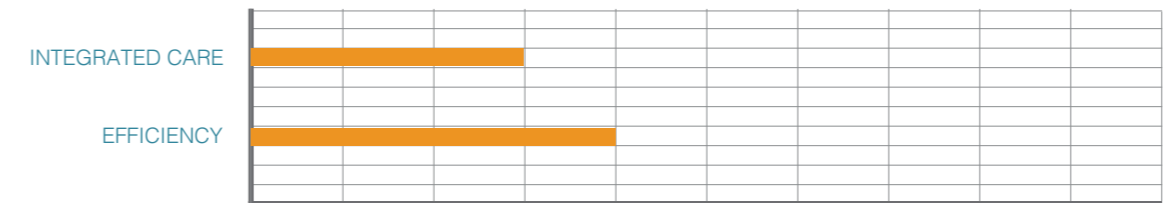
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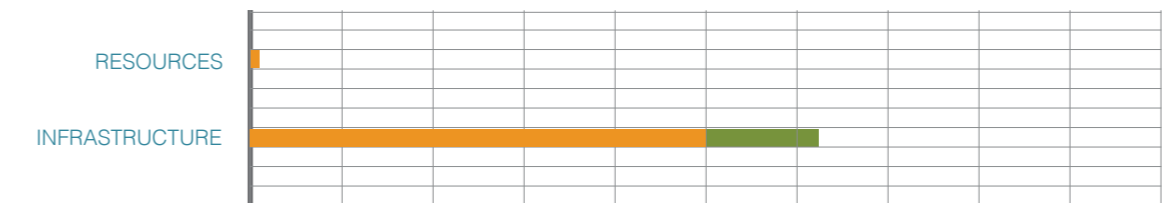
Challenges & Needs Identified

- Need to assess and fill hardware gaps.
- Whole time equivalent staff person will be critical – backfill for resource – both for training and project team roles.
- Definitely people feeling comfortable with EHR as there is an iSoft Maternity Information system (on top of IPMS).
- Believe that staff are actually in a relatively good place, due to use of existing maternity system. IT Basics are good. Main issue is no local IT support (not dedicated).



Gains & Requirements

- Major focus is setting up WiFi, plan to rollout in Mar/Apr. Also have an onsite issue with mobile phone coverage – no availability on site. Don’t have a plan to resolve this, but is a major issue. May require a public WiFi option.
- Help build digital foundations.



- Emer Woods, Midwife
- Sinead Lynch - Midwife
- Breege Lavin - CMM2
- Asad Rahman - Consultant Paediatrician
- Catherine Hughes - Healthcare Records Manager
- Caroline Moore - IPMS
- Fionnuala McElvaney - Midwife
- Michelle Rose - CMM2
- Rosaleen Clarke - CMM2
- Ciara McCaffrey - Midwife
- Lane Galvin - Student Midwife
- M. Kiernan - Director of Nursing
- Karen Malocca - Maternity
- Saeeda Wazix - Obstetrics/Gynaecology Registrar
- Damian O’Reilly - Maintenance Dept
- Ray Bonar - General Manager
- Eveyln McAdam - CNM2
- Orla Fox - OoCIO
- Alan Finan - Associate Clinical Director for Women and Children




Our Lady of Lourdes Drogheda




Challenges & Gains

Digital Challenge:


Raise awareness about the system amongst staff.



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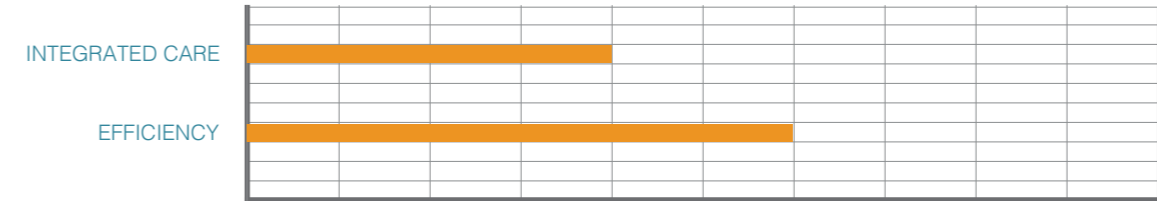
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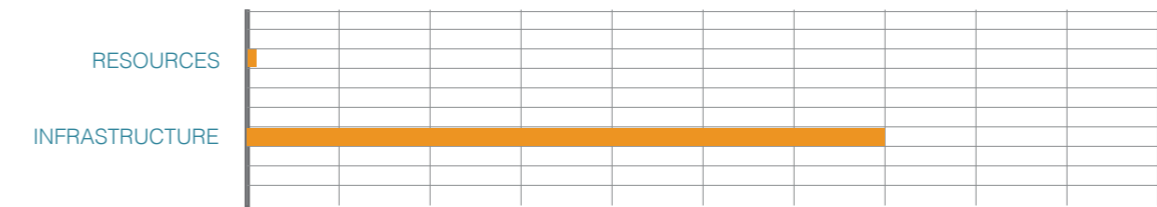
Challenges & Needs Identified

- Don't have interfaces between machines, viewpoint and NIMIS at the moment.
- Wifi as there is none on site.
- 24/7 cover is not available
- Starting from a good digital point – iSoft used extensively, but interfacing not good between the systems.



Gains & Requirements

- Full wifi network is a priority.
- Smart technology pumps.



- Mary Gorman - CMM2 (Clinical Midwife Manager 2)
- Helen Weldon - CMM3 (Clinical Midwife Manager 3)
- Siobhain Hackett - ANP Neonates (Advanced Nurse Practitioner)
- Michelle Scanlon - CMM2
- Lynn Brown - Staff Midwife
- Leonie Baillie - CMM2
- Shineen Mallon - Staff Midwife
- Lorraine Crinion - CMM2

- Fiona Mulligan - Bereavement Support Midwife
- Laura Muckian - CMM2
- Karen Coyle - Deputy Health Care Records Manager
- Matthew Varghese - Consultant Paediatrician
- Shelly Biddulph - Health Care Records Manager
- Irene Mc Donald - Laboratory Manager
- Vineta Cipriki - Consultant Obstetrician
- Dr Babu Paturi - Consultant Paediatrician
- Dr Etop Akpan - Consultant Obstetrician
- Elaine Conyard - Chief Pharmacist
- Colette Mc Cann - Director of Midwifery
- Claire Shannon - MIS Administrator
- Carmen O'Sullivan - MIS Administrator
- Grainne Milne - Clinical Midwife Manager 3
- Bridget Russell - IPMS Manager
- Robert Lawrence - IT Manager
- Shelly Biddilup - Medical Records Officer
- Sally Byrne - Laboratory Manager

The National Maternity Hospital Holles Street



Challenges & Gains

Digital Challenge:

Resourcing the necessary system changes, these are hardware, infrastructure and staff release for training.

"We have chosen to implement an Electronic Patient Record for maternity and the neonate and do the other things (medications, laboratory tests, anaesthesia, administration, economics...) not because we think it will be easy, but because this goal will serve to organize and measure the best of our energies and skills in order to improve care for mother and baby and because this challenge is one that we are willing to accept, one we are unwilling to postpone, and one we intend to win"

NMH Holles St



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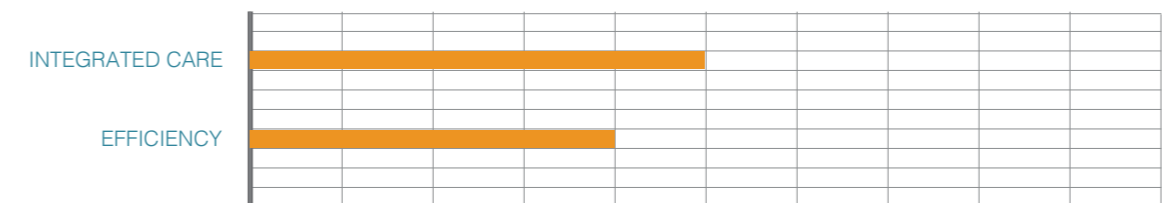
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- Dr Rhona Mahony - Master
- Ronan Gavin - Secretary / Manager
- Dr Michael Robson - National Clinical Director and local Project Sponsor
- Tina Murphy - Project Manager
- Martin Keane - IT Manager

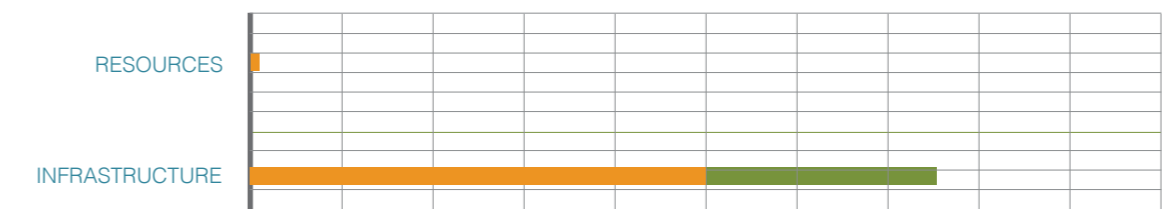
Challenges & Needs Identified

- Excited by anaesthetic module – require funding to support hardware in theatre and recovery. Intellibridges to monitors? Not in initial hardware budget as anaesthetic module not included. NMH quantifying what will be needed.
- A lot of satellite clinics – require ongoing funding to support these areas. WiFis, maintaining connectivity.
- Funding to support training of staff. 578 nursing and midwifery staff (3 days). Additional 100 clerical/lab (2 days). 70 medical staff to train.
- Concerns over logistics – where are the training will be facilitated. There needs to be a flexible training approach including mobile devices
- 7/24 solution – 5 PCs allocated for NMH. Suggest that with infrastructure they require more. These require UPS support and printing.



Gains & Requirements

- Training space - some solution to be found to the absence of training rooms on site.
- K2 Archive maintenance solution.
- Full Wi-Fi network.
- A solution to the clinic patient management system, for example who is next in the outpatient queue?



Conclusion

The digital challenge taught us a huge amount and quickly, exactly what we hoped for.

Professor Richard Greene, the Obstetric Lead for the maternity EHR implementation described the go live in Cork University Maternity Hospital as a pathfinder project, but it goes further than that. Each hospital paves the way for the next, finding lessons, signposting the project for each additional site, making it a smoother transition for all the digital challenges we set ourselves. The maternity digital challenge started this journey for every part of maternity services in Ireland.

A major advantage for University Hospital Kerry is the experience and knowledge they have gained from Cork going live before them. We are also seeing that the implementation of the maternity system in hospitals is providing learning which will be applicable to other projects such as the Laboratory Information System and its impending programme of work.

All these foundation elements being built are providing great levels of digital skills and knowledge which will increase as each building block is added. This has been highlighted as a gain in many of the hospitals visited, the fact that staff will learn and continue to develop skills, digital experiences and relationships. And as each system is put in place this will grow confidence and allay fears.

From the engagement and enthusiasm seen from staff at every single hospital touched by the digital maternity project it was clear the MN-CMS system will not only technically unite the whole maternity service nationwide but has the potential to do this at a cultural level also. Staff feel that this system would provide Ireland with a single maternity service, not just as an information system but as a cultural change to the way they work.

The digital challenge demonstrated that delivering change will require huge effort with regards to learning, resources and infrastructure. Whilst it can be seen that every hospital is at a different level for the delivery of Integrated Care and efficiency it was also abundantly clear that staff are enthused by the opportunity to embrace this solution. Also regardless of resources needed or increase in infrastructure required to successfully implement the project the hard working teams within the hospitals visited today were enthusiastic and welcoming of this transformational project and in particular, welcoming of how it will benefit the patients, mothers and babies by streamlining the processes, breaking down information silos and enabling true integrated care to provide a safer and more effective health service, truly building a better health service.



Richard Corbridge
HSE CIO, eHealth Ireland CEO

A handwritten signature in black ink, appearing to be 'R. Corbridge'.

A Day In Numbers

- **17 Hospitals**
- **24 hours**
- **14 Counties**
- **3 cars**
- **11 people**
- **24 hours**
- **4670 Maternity Staff**
- **42 IT Staff**
- **Actually met: 163 people**
- **18 hospitals would like to go live in the next 36 months**

#DIGICHALLENGE

@GemmaGarvan1: Great meeting with Mullingar Maternity Unit @eHealthIreland #digichallenge #maternity



@ceistamhain: Well done to all involved in #digichallenge looking forward to hearing the exciting results.
@DeloitteIreland @eHealthIreland

@A_Work_Thing: Enjoying tracking progress of the #digichallenge teams as they traverse the country. Incredible effort & energy. #ehealth4all #maternity



@maternalandbaby: Thanks to a fantastic team in OLOL Drogheda. Really looking forward to working with you #maternity #digichallenge



@Ash_ling: Great support and enthusiasm from the team in St Luke's General hospital in Kilkenny #digichallenge

