Building a Culture of Quality at the Centre of Our Service:
A Unique Approach to Implementing Quality Improvement in Decontamination Practice.

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Background

In 1999 the Institute of Medicine (IOM) published a ground breaking seminal report "To Err is Human: Building a Safer Health System". The report recognised that complex systems or processes, similar to the decontamination life cycle, are more likely to result in error, as a failure in one part of the process will impact on other parts of the system. The IOM also cited a number of risk factors for patient safety including, equipment failures and delays in patient treatment, all daily challenges for the CDU, highlighting the importance of reporting errors (defects however small), learning from failure and developing reliable systems to prevent further patient harm (Mitchell et al., 2015).

In his seminal paper on Controlling Variation in Healthcare (1991), Professor Don Berwick lists the "what if's" of an episode of care that will impact on a safe outcome for Kim; a 3 year old girl waiting for heart surgery. The "what ifs" in Berwick's list include; if the sterilizer temperature gauge is calibrated so that the instruments are in fact sterile; if the pharmacy does not mix up two labels; and if when the surgeon says urgently, "clamp, right now," there is a clamp on the instrument tray". Berwick powerfully sums up the critical role the Central Decontamination Unit (CDU) plays in delivering safe care and whilst, there is no direct patient contact with staff working in the CDU, the patient requiring surgery relies on the safety, reliability, effectiveness and efficiency of the decontamination process.

The concept of process reliability traditionally has been focused on standardising systems (Hannan & Freeman, 1984) minimising waste and defects in the system, and reducing error and harm (The Health Foundation 2013). In the modern CDU, which is rigidly controlled by International, European and national standards and supported by local procedures and instructions; this concept fits well.

However, Weick et al., (1999,) suggest that the common approach to reliability excludes the ability of a system, process or people to perform under variable unpredictable complex conditions. These unpredictable conditions are regularly experienced in the day to day operational management of a CDU, manifested in emergency procedures, reaction to priority equipment needs and in response to increasingly complex surgical interventions. Weick et al., (1999) further recognise that even in the most efficient organisations people are rushed, distracted and prone to human error when events are continuously changing.

Our services are currently under considerable strain and the frontline environment is extremely busy and stretched. It is exactly in this stressed environment where a focus on improvement is critical to orientate the planning and delivery of healthcare away from crisis management to proactive service improvement (HSE,2016).

A Unique Approach to Quality Improvement

Quality improvement (QI) is the combined and unceasing efforts of everyone - healthcare professionals, patients and their families, researchers, commissioners, providers and educators - to make the changes that will lead to better patient outcomes, and continued development and support of staff in delivering quality care(Swenson et al., 2013).

In 2017 the Quality Improvement Division took a unique approach to improving the quality of decontamination services by developing a Foundation Programme with the aim of building capacity and capability in Quality Improvement methodologies among decontamination practitioners. This programme is based on the learning from International organisations which provide insight into what can be achieved when quality is placed at the core of all business. Intermountain Healthcare (Utah), Jonkoping County Council Healthcare system (Sweden) and Salford Royal Foundation Trust (UK) have steered their services to prioritise quality above all else over the last number of decades and have achieved improved clinical outcomes, improved safety, reduced costs and reported improved patient experience (HSE,2016).

What is unique about the QID Foundation Programme is that, in Ireland, we have applied the methodologies of Quality Improvement Science, which have been traditionally focused on clinical care pathways, to improving decontamination practice. By embedding a culture of quality improvement across all CDU's in Ireland , there is recognition of the complementary and valuable role decontamination plays in supporting and driving improvements in safe clinical care . A team focused learning approach is just part of our strategies to build a national learning network of decontamination professionals supported by web and other social media infrastructures.

What Did We Do?

The Foundation Programme works directly with hospital CDU teams providing coaching on the science, methods, knowledge and skills for Quality Improvement. Nine hospitals to date have participated in the programme with each decontamination unit providing a team comprising of one frontline decontamination technician, one supervisor and one manager.

In 2008 the Irish Health Service Executive initiated a project to provide a single National Surgical Instrument and Endoscope Electronic Track and Trace system across all decontamination facilities, theatres, outpatients departments and day surgeries in publically funded hospitals in Ireland. Each team must look at their validated Track and Trace system's data, including activity and non-conformances and identify an area that they would like to improve. The programme is delivered over 4 months with one full day contact each month and supported by project surgery conference calls every two weeks.

What is the content of the Quality Improvement Decontamination Programme?

The Foundation programme curriculum is based on 4 key concepts:

Concept 1-Framework for Quality Improvement: The Health Service Executive Framework for Quality Improvement identifies 6 drivers to implement sustainable improvement. For frontline teams the Framework acts as a reminder and sense check of the key areas that consistently require focus to ensure successful and sustainable improvement in the quality of service delivery even in the busiest environments (HSE, 2016). The 6 drivers focus on:

Leadership for Quality: Leaders shape culture, create the conditions and model the behaviour necessary for quality to flourish.

Governance for Quality: having the necessary structures, processes, standards and oversight in place to ensure that safe and effective services are delivered

Measurement for Quality: Information and measurement are central to improving quality of care.

Staff Engagement: Positive staff engagement is critical to achieving high quality care

Patient Engagement: Focusing and delivering on the outcomes that matter to patients

Methods for Improvement: Applying scientific methods to the process of improvement is well accepted internationally.

Concept 2- Using Data for Measurement: The teams use local data generated by the National Tracking System to identify variation in practice and errors or defects in the decontamination process. Each team receives coaching to develop measurement skills, including data analysis, and how to use run charts and Pareto charts to illustrate challenges and improvement over time. Other key skills include root cause analysis and process mapping to identify each step of the process associated with non-conformance, helping to identify where waste and error can be minimised.

Concept 3- Using the IHI Model for Improvement: The students are taught the principles of the IHI (Institute of Healthcare Improvement) Model for Improvement. This model has been used very successfully by hundreds of health care organizations in many countries to improve many different health care processes and outcomes (IHI, 2018).The model has two parts:

Model for Improvement Part 1: The teams must answer three fundamental questions, which can be addressed in any order:

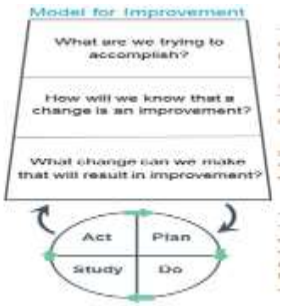
What am I trying to accomplish or improve?

How will I know it is an improvement?

What ideas do I have that will bring about an improvement?

Model for Improvement Part 2: The teams use a Plan-Do-Study-Act (PDSA) cycle to test changes in their real work settings.

The PDSA cycle (Deming, 1981) is shorthand for testing a change by developing a plan to test the change (Plan), carrying out the test (Do), observing and learning from the consequences (Study), and determining what modifications should be made to the test (Act) to achieve the improvement.



Concept 4- Engaging Colleagues in the Improvement Process: In Ireland the HSE Service Plan (2018) identifies the vital role staff at all levels, play in addressing the many challenges in delivering a dynamic services and the need to develop frontline ownership to improve the safety of services. Arguably the most important concept of the programme is to coach the teams to develop skills that will help them influence and engage their colleagues in the improvement process. The programme provides tools that help the teams identify all the stakeholders involved in the improvement process(stakeholder mapping) , recognise their concerns " what matters to me" and put strategies(develop a stakeholder influencing plan) in place to address these concerns.

A key focus of the programme is building knowledge within the teams on how to "win both the hearts and minds" of all stakeholders in the change process, using innovative engagement techniques such as TRIZ (IHI, 2016), which is commonly used in the engineering field. TRIZ is a communication and improvement tool which gives all staff working in the CDU the opportunity, in a protected friendly environment, to identify common everyday practices they need to change in order to improve the service. In addition, the team quickly learn throughout their journey, that paying close attention to their stakeholder mind-set can make the difference between achieving quick wins that fade over time versus capturing the long-term value of continuous improvement (McKinsey, 2011).

We have learnt that where attendees come from different organisations, but who operate the same process e,g, decontamination, they gain as much learning from each other as they do from the course content itself. For this reason nearly a third of each session is focused on an "all teach all learn" project coaching method. These sessions also help to bond the team and contribute to the building of a community of decontamination professionals with a shared interest in learning and QI with the additional benefit of enhancing staff morale.

Benefits and Outcomes

The implementation of a dedicated Quality Improvement Foundation Programme for Decontamination has realised significant improvements at local level including for example, increasing capacity for endoscope decontamination by 20%, reducing torn wraps by 100%, increasing compliance to tracking systems by 60% and reducing overstocking of instruments by 50%.

One of the key outcomes of the training programme is to spread and share the learning and build a Quality Improvement culture across all decontamination facilities in Ireland enabling hospitals to adapt the improvement projects into their own local context. To support this process the Decontamination Safety Programme held a 2 day Network Event to share the learning from each of the hospital teams who participated on the programme. The benefit of the Network event was summed up by one decontamination manager who said "we all share the same systems, processes and problems in decontamination here in Ireland, Europe and internationally; it is a great way to learn from each other".

The QID Foundation Programme is now working with 4 new HSE hospitals and 1 Private hospital to spread, QI Knowledge and Skills to other hospitals in Ireland. Internationally, the HSE Decontamination Safety Foundation Programme in Quality Improvement is ground-breaking in that it is the first Quality Improvement Programme to be delivered in healthcare which looks outside of the direct clinical environment and focuses on supporting the critical contribution the CDU plays in delivering safe, effective quality services, essential to optimising patient outcomes.

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If you would like to find out more about this programme and how it can work for you please contact:
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