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Final Report and Evaluation

Improving Nursing and Midwifery Utilisation of Evidence to Inform Clinical Practice.

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(on behalf of the Strategic Management Group and Midland DHB Directors of Nursing)

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Executive summary.

1 Introduction

1.1 It is acknowledged access to and utilisation of evidence to inform practice varies widely across the nursing sector jn New Zealand. To address this wide variation the Ministry of Health called for Expressions of Interest in 2010.

1.2 Waikato District Health Board on behalf of the Midland District Health Boards, submitted a proposal, “Improving Nursing Utilisation of Evidence to Inform Clinical Practice” (The Project). The focus of the project was to strengthen the connection between evidence and nursing practice using electronic based approaches.

1.3 The electronic approaches designed and deployed had to acknowledge the unique requirements of nurses and midwives operating within the District Health Board’s (DHB) in the Midland region. How and where evidence was accessed had to be tailored to the specific needs of nurses and midwives in different hospital and community, urban and rural settings across the Midland region.

1.4 Specifically the project sought to improve the Midland DHB registered nurses and midwives utilisation of internationally recognised electronic evidence based procedures to inform their clinical practice.

1.5 The project commenced on 25 June 2010 and was completed by 30 June 2011 and ultimately captures 8,500 registered nurses and midwives working within a broad range of clinical and community settings across the Midland DHBs.

2 Management

2.1 A project team (strategic management group – SMG) was developed to oversee. The operational aspects of the project. The SMG included two clinical nurses’ directors, lead librarian and information technology staff based in a tertiary education provider.

2.2 The SMG was led by Michael Bland (Clinical nurse director-Waikato DHB) who reported directly to a strategic reference committee comprising the five directors of nursing of Midland DHB's.

3 Selection of Best-Evidence resources

3.1 The Lippincott Manual is a licensed product of Wolters Kluwer and Lippincott, Williams and Wilkins and before the manual could be released to the pilot group intellectual property and copyright issues had to be addressed.

3.2 Staff at the WDHB has had a long history of dealing with digital publishers and the complexities of adhering rigidly licenses issued. This group negotiated with the Lippincott Manual license holders for controlled access to the manual.

3.3 The initial phase of the project began with a gap analysis that examined the policy portfolio held by Waikato District Health Board and compared this portfolio alongside two international peer assessed on-line procedure manuals, The Royal Marsden Manual of Clinical Nursing Procedures and the Lippincott's Nursing Procedures and Skills Manual.

3.4 The gap analysis and evidence review highlighted a number of the procedures in the Lippincott Manual did not conform to a New Zealand practice arena. This was particularly evident in firstly, Mental Health and Addictions, where legislation cited in the procedures differed from New Zealand and secondly, in Midwifery care, where the procedures indicated the assessment and reporting lines fitted a less autonomous practice that experiences by midwives in New Zealand. The SMG recognised this and on discussion with the SRC, removed over seventy procedures from the formal evaluation and public view.

3.5 To meet licence requirements, to selectively release procedures and to track changes and modifications access to the "back-end" of the Lippincott manual was restricted to three members of the SMG.

3.6 The Gap analysis indicated the Lippincott's Nursing Procedures and Skills Manual, with over 80% of this product portfolio correlating with the Waikato DHB policy portfolio, was the most appropriate manual to pilot. This review of evidence

also indicated the Lippincott's Nursing Procedures and Skills Manual utilised the most contemporary evidence based materials to justify the proceedures and had clearly visible schedule of revision. This preference was endorsed by the strategic governance group.

4 The e-Environment

4.1 A key stakeholder group identified within the project where the "hard-to-reach" population. This hard to reach population are regarded as those nurses who work in organisations outside of the regional DHBs. This group has limited access to contemporary resources and the funding DHBs had limited proof they were adopting and applying consistent nursing procedures in their practice.

4.2 To meet Lippincott Manual Licence requirements and provide seamless access to all within the pilot group the SMG created a controlled e-environment based on minor modifications to the learning management system Moodle.

4.3 Additional modifications were also undertaken within this environment to permit access to an on-line reference resources designed specifically for Registered Nurses (Nursing Reference Centre) to compliment the nursing procedure manual.

4.4 To be successful the SMG recognised participants needed to feel competent, confident and capable within the e-environment created. To provide on-going support and increase participant confidence knowledge facilitators, drawn from the libraries of participating DHBs, were appointed.

4.5 Knowledge facilitators had both the technical and project knowledge to quickly respond to queries presented by pilot participants. This support was a key factor in participant satisfaction with the e-environment created.

5 The Pilot

5.1 The SMG identified an initial pilot group that included 135 registered nurses and midwives from across the 5 Midland DHBs, including tertiary, secondary, primary care and independent providers' nurses and midwives, as well as tertiary tutors and senior nurses engaged in management and recruitment.

5.2 The 135 registered nurses and midwives were asked to critically review a minimum of (3) three of the procedures within the manual. The selection of the procedures was designated by Michael Bland project leader and the review included at least one “non specialist” procedure.

5.3 Senior nurses and tertiary tutors invited to complete the electronic evaluation self selected the procedures to review.

6 The Evaluation

6.1 Within the e-environment the SMG developed two evaluation instruments to seek participant perceptions of both ease of access to the electronic resources and their evaluation and critique of the actual procedures reviewed. Both these instruments were delivered through Moodle and were tested prior to being open to the pilot group.

6.2 The review of the procedures and the completion of the evaluation took place at the end of March 2011and lasted for 14 days.

6.3 At the conclusion of the pilot 155 respondents had completed both instruments.

6.4 In total 434 procedural evaluations were completed, some procedures were evaluated by more than one nurse/midwife with 302 actual procedures being examined out of a total of 920 (32.8%).

7 Results

Overview of Results: Ease of Access

7.1 The analysis of the data from the ease of access instrument was undertaken by Dr John Clayton of the Waikato Institute of Technology.

7.2 The data indicated a significant majority of respondents:

- are confident and competent using their computers and searching, retrieving, storing and manipulating information from the Internet,

- were competent and confident in using web-based technologies to access point of care procedures,
- found the web-space created visually appealing,
- were able to clearly read all materials and the media used was appropriate to the information presented,
- felt the procedures reviewed were presented in a logical manner, were current and appropriate to their current level of skill,
- could access the appropriate software applications to complete activities assigned and
- had robust and reliable connections

7.3 It was notable the greatest support for access to these procedures was from those nurses who were either independent of the main provider hospital facilities or those nurses that were rurally located.

Overview of Results: Procedures Evaluation

7.4 The analysis of the data from the procedure evaluation instrument was undertaken by Michael Bland project leader.

7.5 The results of the from evaluation instrument the procedure indicated

- A significant number of nurses recognised the value of a centralised procedure manual and the supporting resources, particularly the images and videos in improving their practice.
- Nurses and midwives found it particularly valuable to be able to quickly and efficiently access appropriate procedures. Critical to the success was access ‘close’ to where care was being undertaken.
- Although the procedures reviewed were clinically relevant and current the language style (Americanism) within the product was viewed negatively by some evaluators.
- The context in which the procedures were written to service an American model of nursing and midwifery care and sometimes did not always match practice undertaken in New Zealand.

7.6 In general the evaluation showed an overwhelmingly positive response to accessing on-line procedure; the 'fitness for purpose' of the procedure and the procedures had a good technical fit with New Zealand nursing practice.

7.7 Again it was notable the greatest support for access to centralised procedures was from those nurses who were as part of the "hard-to-reach" stakeholder group.

8 Summary

8.1 Key points learnt from the pilot phase were;

- an electronic on-line procedure manual is recognised as having great value to nurses,
- The e-environment created was easy to navigate for nurses and provided seamless access to the procedure manual and
- The procedures themselves were generally received well with very little criticism of the technical aspects of the procedure detail.

8.2 However, some nurses found

- that the cultural safety elements were not well dealt with and
- in a number of critiques, nurses and midwives displayed some frustration around the "Americanization' of the language used in the procedure (the product is an USA product).

9 Future Directions and Recommendations

9.1 Roll Out

- Having a procedure manual that was adopted across the region had huge value to ensuring consistent application of best practice, evidence based procedures.
- Given the resource cost of individual DHBs maintaining their own procedure manuals the purchase of a comprehensive on-line procedure manual will result in cost benefits to each DHB in staff time and process.
- The next phase of the pilot is to provide staged access to the on-line procedure manual and resources for all registered nurses throughout the Midland region (8500). Initial access will be granted to provider arm hospitals,

this will be followed by primary healthcare organisations and conclude with aged care, Iwi providers.

- There is value in having best practice procedures adopted across the region(s), so that nursing and midwifery practices are more aligned to partner DHBs. This was particularly relevant where patients receive care in neighbouring DHBs'.
- The SMG identified a critical component for success was the support provided by knowledge facilitators

Recommendation A

1. *With the full support of the SRC continue to roll out the manual in a controlled manner*
2. *Maintain within each DHB, and any subsequent collaborative partners, a knowledge facilitator who will be a key contact person for both the technical and product knowledge support.*
3. *Investigate the potential, with the Ministry of Health, of an extended roll out at a national level*

9.2 Procedure Release

- There is general agreement the centralised distribution of procedures will improve the nursing practice and patient care across the region
- It was evident that the nurses and midwives who found this manual the most valuable where those nurse and midwives who normally had limited or no access to resources currently.
- The project group recognises the Lippincott Manual, whilst reflecting contemporary evidence based procedures; there are procedures with limited or no application to the New Zealand health context.
- Uncontrolled release of inappropriate procedures to a general nursing/midwifery audience creates the risk those nurses/midwifes will dismiss the whole procedure manual and jeopardise the concept of a centrally distributed procedure and policy manual.

Recommendation B

1. *A core group of nursing/midwifery specialists is created to review the release of procedures and modify to meet New Zealand's needs*
2. *Primary manual storage of the digital database and modified manual occurs within New Zealand (with a mirror back-up copy stored nationally and internationally)*

9.3 Evaluation

- A central tenant of the project team was to enable access to those nurses that either a) had poor access to resources normally, or b) because of remote locality created difficulties getting access 'in the field'.
- The development of a controlled entry point, through the Moodle platform, is one of the key factors for success.
- There are indications a number of nurses' do not have ready access to hardware, software applications and connectivity to access the Lippincott Manual.

Recommendation C

1. *With the full support of the SRC continue to evaluate participant access and ease of use*

10 Conclusions

10.1 The primary piece of work of this project has been the development of electronic resources to enable nurses' access to evidenced based material to support their practice, ultimately improving patient care.

10.2 Within the project scope it was quickly identified that access to procedures alone was not sufficient to enable safe practice and that further support mechanisms would enhance the utility of the procedure.

10.3 Centralised distribution means DONs are assured the primary source of information is regulated reducing the risk of nurses access non-peer assessed, inappropriate material through unattributed open sourced materials or through search engines such as Google.

10.4 Contributions from recognised "expert groups" to complete modifications to the manual is critical. However, it is acknowledged coordinating the critique of a large number of procedures will be difficult.

10.5 The use of emerging mobile technologies by nurses, particularly those in remote locations, could improve nursing practice and patient care in these areas.

10.6 Central to the success of this project in the pilot phase was the knowledge facilitators. In the first instance because of the understanding of the product and how to access electronic resources but also because they provided an independent and objective approach to the procedure manual.

10.7 In taking a national approach of adoption examining a model such has been used with the national medication chart development may be the best approach, recognising that there are over 1200 procedures in the portfolio and these are constantly being added too. In the initial establishment phase this has been hugely people and time intensive, but the long term benefit will ultimately be realised both in safe practice and reduced time of health professionals developing procedures by individual DHBs.

10.8 The work when completed by the Midland group in providing a comprehensive review of the Lippincott's Nursing Procedures and Skills Manual will ensure that the procedures have more relevance to a New Zealand nursing and midwifery audience.

Report to service objectives.

It was agree that this project would seek to attain the following five objectives agreed with the Ministry of Health and Project Manager (Michael Bland):

- Promote nursing access to and utilisation of evidence informed research to inform clinical practice
- Ensure that nursing services and treatment people receive is based on the best evidence of what does work and what provides best value for money
- Enable nurses to access evidence as close as possible at point of care
- Work towards a standardised use of evidence in the development of nursing protocols and manuals to reduce duplication and increase efficiency in clinical settings
- Explore innovative methods of translating knowledge into practice.

The following examines in details three critical elements against these project objectives. In each of the service objectives the first section will report directly to the service objectives, the next section will report on ‘lessons learnt’ during the project and conclude with the final section that explores options moving forward to long-term sustainability called ‘thinking ahead’

Promote nursing access to and utilisation of evidence informed research to inform clinical practice

Report against the service objectives.

At the commencement of the project there was an extensive gap analysis that was undertaken. It was recognised within the expression of interest and the request for funding proposal (see appendix) that there may be potential to adapt an internationally recognised procedure manual. Indeed, two member DHB's in the Midland region had previous experience of using an international nursing procedure manual (The Royal Marsden Manual of Clinical Nursing Procedures) in the form of hard copy and CD-ROM (compact disc-read only memory).

Following an extensive search of products available internationally the decision by the SMG was to critique the merits of two of these products: The Royal Marsden Manual of Clinical Nursing Procedures and the Lippincott's Nursing Procedures and Skills Manual.

The gap analysis exercise involved the current administrator who managed the procedure portfolio within Waikato DHB to complete a comparative exercise, matching procedures in the extensive Waikato DHB electronic manual with those in the two selected products. This coincided with a separate piece of work completed by Michael Bland that examined the evidence used to support the procedures.

The gap analysis concluded that the Lippincott's Nursing Procedures and Skills Manual had the broadest range of procedures and utilised the most contemporary evidence base materials to justify the procedures. Lippincott also had a clear and visible process for updating their procedures which the reader could easily see and identify when the procedure was next due to be revised.

On presenting this material to the SRG, it was noted that the Lippincott's Nursing Procedures and Skills Manual provided the most comprehensive portfolio of procedures across the broadest range of services, disciples and care environments.

The evaluation was an exercise that engaged all the Midland DHB and critical to the success of this element were the knowledge facilitators (librarians). The Knowledge

facilitators represented an impartial workforce (being librarians, as opposed to nurses or midwives) and provided the face of the evolution in terms of supporting and assisting those completing the exercise. It was essential to this success that these staff were located centrally in their respective DHB's. This exercise could not have been completed successfully remotely.

Engaging consumers (nurses and midwives) in the product evaluation was an essential piece of work. Whilst the cohort of evaluators was only of moderate size (n = 135) they did examine over a third of the Lippincott portfolio and provided substantial evidence about their value of the product. In general the evaluators reflected on 'softer issues' relating to the product rather than critiquing the procedure in a more critical and evidential way. The questions presented did seek this but individual commentary provided by the evaluators tended to be softer – discussing style, design, resources (images/video) and language style.

In selecting an overseas product it became immediately evident that a substantial number of procedures did not conform to a New Zealand practice arena. This was particularly evident in Mental Health and Addictions, where legislation cited in the procedures differed from New Zealand. Again, in Midwifery care, where the procedures indicated the assessment and reporting lines fitted a less autonomous practice that experiences by midwives in New Zealand. The project group recognised this and on discussion with the SRG, removed a substantial (70+) procedures from visibility

Lessons learnt

Completing the gap analysis was a significant exercise but commenced from an assumed starting point that Waikato DHB had the most appropriate and broadest repository for nursing and midwifery procedures. This was clearly not the case when the gap analysis was presented to the SRG. This resulted in a further piece exercise of undertaking a gap analysis against a smaller DHB's nursing and midwifery procedure portfolio. This comparative exercise was completed against Taranaki DHB's portfolio. Whilst there was merit in this exercise, illustrating a different approach to their procedure portfolio it did not add any value to the decision for selecting the product to be evaluated.

The gap analysis completed against the two products originally selected proved to be a extensive piece of work and took over 160 hours to complete in the initial phase and then a further 40 hours to then provide a critique of the evidence base within the products. This piece of work required the commissioning of the administrator to complete this exercise and was cost was not included in the initial project scope.

Once the Lippincott product had been selected to move to an evaluation phase it was critical to engage Lippincott in the full project specification so that it was agreed that the product provider was able to deliver on the requirements of the project team.

Having a key anchor Library staff member (knowledge facilitator) in each DHB was instrumental in the success of the evaluation. Library staff were, generally, available Monday – Friday (0800-1600) and easily accessible for face-to-face, telephone or e-mail conversations.

The project team had not anticipated the response relating to the language style (Americanism) within the product, but this was evidently viewed negatively by the evaluators. Whilst these comments were noted the project team did not believe these distracted from the clinical relevance and currency of the procedure.

The context in which the procedures were written to service an American model of nursing and midwifery care did not always match practice undertaken in New Zealand. Early recognition and mitigation of this risk before undertaking the evaluation was essential. Continuing to retain a number of potentially controversial procedures provided

those nurses/midwives with a clear example of the procedures so that they could make honest critiques of how they believed they applied to (or not) a New Zealand context.

Thinking ahead

Clear understanding of each DHB's procedure portfolio is necessary to provide the project team with a direct understanding of the current style, format, design and extent of the procedure manuals. This provides the project team with a clear understanding of the scale of change that may arise with the adoption of a comprehensive procedure manual such as Lippincott.

Completing the gap analysis was a useful exercise in its comprehensive form. This exercise completed it would not be necessary to undertake this exercise again as it became evident that once a product had been selected the real critical analysis occurred within the evaluation.

In establishing the project parameters these need to be managed carefully with a clear understanding of when these parameters are breeched there is likely to be an additional cost incurred and the potential to push deadlines beyond the original stated dates.

Early engagement with the product supplier is critical to establish a business relationship and provide clear indications of where the project is headed. Project of this nature ultimately will shift in specifications whilst being constant to the overall aims. A product provider needs to be capable of accommodating these shifts in demands and needs. The sooner the provider is engaged in these potential shifts the sooner action occurs to move on redesigns.

Establish within each DHB a key contact that had both the technical and project knowledge to respond to queries presented by nurses and midwives. Failure to answer questions in a timely way could have compromised evaluators' potential to engage.

Clear communication plans to promote the product, in particular the style, design and language used is essential to develop 'early adopters'. Nurse and midwives did express some anxiety that these procedures being adopted in DHB's without stylist

changes to the Americanism. Such re-editing of the procedures to write in a more familiar New Zealand style is unrealistic and unnecessary.

Recognition that whilst the product reflects a contemporary evidence based procedure manual there could be procedures that have little or no application to a New Zealand health context. Management of these procedures before they are released to a general nursing/midwifery is essential to prevent the potential for those nurses/midwifes to dismiss the whole procedure manual.

Ensure that nursing services and treatment people receive is based on the best evidence of what does work and what provides best value for money.

Report against the service objectives

Having a procedure manual that was adopted across the region had huge value to ensuring consistent application of best practice, evidence based procedures.
It was evident that the nurses and midwives who found this manual the most valuable were those nurses and midwives who currently had limited or no access to resources currently.

In relation to those nurses whose organisations, sitting outside of the provider arm of the DHBs, but still predominantly funded by the DHBs had limited access to contemporary resources and by providing this service through the DON's office ensured adoption and application of consistent nursing practice. This was reliant on the clinical governance mechanisms of those organisations adopting and applying the manual to their practice areas.

Understanding the product and in particular the scheduled Lippincott review system was key to developing a system for critiquing the reviews and determining a mechanism for accepting/declining the review.

Developing a central team to work through contractual relationships was significant in applying a single line of communication between the DON;s and the product

providers. Equally important, was limiting the team with access to the 'back-end' function. Currently, only three people within the region have this capability. This limits the number of people and DHB's who are able to make changes without those changes being recorded through a central office. Waikato DHBs established this role as the contract holder with both the Ministry of Health and then the product provider.

There needs to be a clear agreement amongst the DON's as to how procedures within the manual are selected and then become visible to the whole nursing and midwifery workforce. This needs to be applied consistently across all of the DHB's. Developing modifications of this process is disruptive and potentially undermines the principles and integrity of having a "common" procedure manual across a region.

There needs to be a clear mechanism as to how procedures will be critiqued when they are reviewed by Lippincott. Where there have been editorial changes within the Midland region these editions will not be reflected in the central reviews completed by Lippincott. A clear process for changes applied in the Lippincott revisions needs to be critiqued and then recommendations made to the DON's to accept or decline the changes. Independent of the Lippincott scheduled reviews there is the potential at any time to make editorial changes to any procedure through the designated administrators based at Waikato DHBs.

Lessons learnt

Following the gap analysis and the evaluation is what evident that the evidence base on which the Lippincott's Nursing Procedures and Skills Manual has a substantial and contemporary evidence base. Additionally, the manual had a clearly visible schedule of revision.

In the formal evaluation many nurses recognised the value of the procedure manual and the supporting resources, particularly the images and videos. This provided a strong product that, generally, nurses easily navigated and found useful to their clinical practice.

Predominately the evidence which underpinned the procedures was drawn from literature sourced in the USA. However, this is not unfamiliar to many nursing reference sources which are largely drawn from either the USA or UK.

Additional to the procedure manual, this project provided a complimentary on-line reference resource to provide further opportunities to explore materials relevant to nursing and midwifery. Many of the references cited in the Lippincott's Nursing Procedures and Skills Manual were able to be sourced as full-text journal articles from the Nursing Reference Centre.

In developing this project, the project author, working with the Waikato DHBs estimated that each individual procedure developed within this DHBs required approximately 80 hours of staff time, to develop from the start to being signed off by the Director of Nursing & Midwifery. If a notional (conservative) value of $25 per hour is attached to this development, which values each procedure at $2,000. Procedure development was simultaneous in each of the participating DHB's. In order to maintain standards, each DHBs is required to have a mechanism to review and revise its procedures.

In purchasing a comprehensive on-line procedure manual it was evident that the cost benefits to each DHB in staff time and process was a significant saving.

Additionally, there was a value in having best practice procedures adopted across the region, so that nursing and midwifery practices were more aligned to partner DHBs. This was particularly relevant where patients receive care in neighbouring DHBs'.

Thinking ahead

A comprehensive review of the Lippincott's Nursing Procedures have more relevance to a New Zealand nursing and midwifery audience. Acknowledging that, fundamentally, the procedures are safe for practice globally, there are elements that need revision to present a closer correlation to New Zealand practice. This work

extends from making changes to weights and measurements at a logistical level through to fundamental changes in philosophy of practice around direction and delegation of the procedures.

Over the course of the past six months Waikato DHB have lead and coordinated the teams that have undertaken the critical review and editing. The significant portfolios that have been reviewed are:

IV Medicines management
Maternity Services
Wound Care
Infection Control, and
Mental health and Addictions.

It is expected that the bulk of this work will be been completed by February 2012, but leadership around how these procedures are to be implemented across services in Maternity care and within Mental Health and Addiction services remains unknown. These challenges are currently being reviewed by the Strategic Reference Group (DONs).

In the event there was any activity to consider the potential to introduce the Lippincott's Nursing Procedures and Skills Manual at a national level it would be practical to take a phased approach to introducing the manual. Commencing with general medical/surgical nursing procedures, wound care and IV Medicines Management. These procedures have been comprehensively reviewed and signed off by the Strategic Reference Group and present no significant risk to replacing internal local procedures. In introducing these procedures the DON or equivalent role would not find themselves in a position of defending the product or mitigating risk at an operational or board level.

Care and careful attention needs to be taken in how other aspects of the procedure manual would be need to introduced. A national project lead could still take a nation-wide approach to this, but there needs to be a clear pathway in how these procedures would be introduced whilst recognising and mitigating against non-adoption or mitigation against health professionals who may not have confidence in the product.

Taking a collegial approach to the application of the procedures is critical to its success at implementation. The project team has recognised a fragmented approach to implementation that has seen one DHB introducing the manual from the 1st October carte blanch, to another DHB that have taken a restrictive access approach to introducing procedures in a slow but systematic way. This approach as been hampered by a shared communication plan and common approach application. This was then further compromised by clinical nurses and midwives becoming concerned that the procedure manual was 'undoing' their valued work and might not meet the expectations of medical colleagues. The project team has constantly been revising its approach to accommodate these challenges.

In taking a national approach of adoption examining a model such has been used with the national medication chart development may be the best approach, recognising that there are over 1200 procedures in the portfolio and these are constantly being added too. In the initial establishment phase this has been hugely people and time intensive, but the long term benefit will ultimately be realised both in safe practice and reduced time of health professionals developing procedures by individual DHBs.

Enable nurses to access evidence as close as possible at point of care

Report against the service objectives

The development of the Moodle platform to provide nurse and midwives a portal to access and also evaluate the product was one of the project's greatest successes. In the evaluation nurses and midwives emphasised the value to them of being able to quickly and efficiently access the product. Critical to its success was access 'close' to where care was being undertaken.

A central tenet of the project team was to enable access to those nurses who either a) had poor access to resources normally, or b) because of remote locality created difficulties getting access 'in the field'.

In terms of those nurses with poor access to evidence based resources the Moodle platform provide a sound vehicle or platform for them to access to the product. There was over-whelming evidence in the evaluation that nurses found this application easy to access, use and enter the product. The product too was found to be easy to navigate through.

For those nurses based in remote localities, the moodle application enabling access to the product worked well, when based in a centre with access to good internet provision. When out of the practice centres the full utility of moodle was not exploited using remote mobile technologies. Critical to this was nurses' lack of up to date hardware to access the technology. This was not part of the project scope. On review with our technical colleagues based at Wintec, we know that the software technology to access PDF procedures is relatively easy through mobile technologies but this would be limited in respect of video streaming. It was also acknowledged that sound and reliable mobile communications were fragmented through the Midland region.

Lessons learnt

From the outset of the project once we had 'signed up' nurses who were operating outside of the conventional provider arm hospital based facilities we had a fully engaged audience. This group represented the most enthusiastic body of nurses who fully engaged in the project with a willingness that exceeded the project team's expectations.

Access to the materials had value where this was not apparent previously or only in application of fragmented services. The engagement of those nurses in this project had the added value of immersing them in other opportunities to engage in evidence through developing relationships with the knowledge facilitators based in each of the DHB library services.

The knowledge facilitators were central to the success of this project in the pilot phase. In the first instance because of their understanding of the product and how to access electronic resources but also because they provided an independent and objective approach to the procedure manual. As a workforce of non-nursing personnel they were able to expose the nurses to all the materials without become engaged in the critical

review of the materials. This impartiality supported the facilitation of access and focussed the nurse on the materials once they were able to access them fully, with the added benefit of the knowledge facilitator using the opportunity to expose them to further materials which might support their practice. An unexpected benefit which was realised to also be very valuable was the engagement of the knowledge facilitators feeling more accessible and supportive of nursing colleagues because of access to this project. This added to their sense of worth in their practices.

Thinking ahead

Two critical elements must be considered should the project move to the next phase within the Midland region, and similarly, should it be scaled up to become a national initiative, These critical elements are the role of the knowledge facilitator and the role of emerging mobile technologies.

The knowledge facilitators proved to be the greatest asset uncovered by this project. Their accessibility to respondents and understanding of such applications was instrumental to the success of the project thus far. By advancing this initiative across Midland DHB wide area they were central to registering nurses' access to the resources and supporting their needs in navigating through the product. Their role being either undertaken through 'face-to-face' contact or through telephone/on-line contacts. The accessibility and availability of the knowledge facilitators cannot be under estimated.

In considering taking a national approach to the procedure manual the role and function of library services within DHB's must be acknowledged, not just as providers of a service but the talent pool of knowledge facilitators had in this pilot in supporting the development and implementation of plans which ensured success of the project objectives. Access to knowledge resources at the point of care is the "raison d'etre" of the knowledge facilitators and they have the skill sets to establish how this can be successfully completed in the Midland region and beyond.

Emerging mobile technologies was not part of the original project scope. Although the potential for nurses, remotely located, to use mobile technology to access the product cannot be dismissed. The future of nurses accessing mobile technologies for

a range of resources and materials is fluid. There needs to be recognition of the real potential for nurses to access material resources such as procedure manuals through mobile technologies and greater investment in these technologies needs to be considered.

Work towards a standardised use of evidence in the development of nursing protocols and manuals to reduce duplication and increase efficiency in clinical settings

Report against the service objectives

As indicated in the first two objectives the project has managed to attain a standardised approach to nursing procedures. Application has been variable across the Midland region as the roll-out has taken place, however the common goal of the manual has remained authentic to the project goals. Ultimately the five DHBs will align their procedure manuals through the electronic platform once all the DONs are satisfied that all potential risks have been mitigated.

Lessons learnt

The central message learnt throughout the project has been centralised co-ordination of the on-line manual. The initial gap analysis provided sufficient evidence to move to a pilot phase to critique Lippincott's Nursing Procedures and Skills Manual. The gap analysis was a critical element that has added to the value of the end point.

Formalising the expert group to complete the critiques has been problematic, whilst this has centred at Waikato DHB this has run relatively smoothly for the IV Medicine Management and wound care portfolios. This has been more troublesome an exercise in terms of Maternity care and the Mental health and Addictions portfolios. Here the need for a Midland wide approach has been necessary and co-ordinating the critique of a large number of procedures has been difficult. Acknowledging that a single reference point within one DHB lacks a collaborative and collegial approach.

The time necessary to undertake this work within the general 'business as usual' arena has been problematic. This has required significant amounts of time from

clinical experts reviewing the procedures and then a similar amount of time for those key knowledge facilitators to upload agreed editorial changes. The value of this exercise is the greater confidence that the clinical procedures have a more contemporary context in terms of New Zealand practice. Where changes have been made the editorial team have ensured that these changes are generic and not specific to an identifiable DHB.

Thinking ahead

In terms of moving the project into full implementation phase engaging 8500 nurses the phased approach to enlist this entire workforce is expected to take a further three months on completion of the critique. Many nurses are currently accessing the product through their respective DHB sites, where the hyperlink is citied. Those nurses operating outside of the boundaries of DHB intranet facilities are able to access the product by registering through Moodle. A number of external providers have undertaken this exercise with their individual nurses.

In considering roll out to a national group, a clear systematic approach to enabling access needs to be developed for potential future users. Once authorised by the DON in terms of a DHB adopting a procedure manual permitting access to through the DHB intranet site is relatively simple a process to enable. External providers and remote users will need to be managed through Moodle and this is potentially time consuming to establish, but only needs to be completed once. The most time consuming element is the need to verify the legitimacy of the user in terms of the licence agreement with the product provider.

Two further consideration requiring extensive planning to adopt this initiative nationally would be; 1) management of procedural changes and 2) server management.

Lippincott has a process of updating all procedures on a two yearly calendar. Centrally, there needs to be clear governance that any changes proposed by Lippincott are reviewed and ‘signed-off’ by a relevant body before becoming ‘live’ to users accessing the product in New Zealand. In terms of this project all users access a specific element on the Lippincott site that is uniquely identified as Midland DHB.

In the event that further consideration is given to developing a national procedure manual there needs to be consideration as to how the Lippincott server would be accessed. Tentative conversations have taken place with Lippincott to consider developing a server base in New Zealand as opposed to using the current Trans-Pacific internet link, that is always potentially compromised by band-width utilising the link. Were a server to be developed and maintained in New Zealand the most logical place would be with a state services provider, currently providing large capacity server facilities. As part of this exercise, we know that capacity for Wintec to undertake this work of managing and maintain the server is a possibility. The immediate benefit to DHBs being that we are not dependant on line security through the Trans-Pacific link and secondly we have security that this sits within a New Zealand base, state owned and secure in terms of server capacity and capability.

Explore innovative methods of translating knowledge into practice

Report against the service objectives

The primary deliverable of this objective has been the development of electronic resources to enable nurses' access to evidenced based material to support their practice.

Within the project scope it was quickly identified that access to procedures alone was not sufficient to enable safe practice and that further support mechanisms would enhance the utility of the procedure. Waikato DHB had at commencement of the project had a two year experience of working with another on-line product "Nursing Reference Centre" which had been available to all nurses who had intranet access.

As part of the project the group was able to expand access to this resource for the whole nursing workforce in the Midland region. The rationale for this was that the project group and the DON group in particular were confident that access to contemporary evidence based resources such as Nursing Reference Center enhanced the knowledge base for nurses engaging in everyday practice. With the added reassurance that this product ensured this as a primary source of information that was regulated by the DHBs. Reducing the risk of nurses accessing non-peer assessed material through open sourced materials through search engines such as Google. The group, lead by the lead knowledge facilitator' acknowledged that access

to free resources based on internet sites were not in the best interest of patient safety or best practice. The purchase of an internationally recognised resource (like Nursing Reference Centre) was the best possible outcome.

As with the Lippincott's Nursing Procedures and Skills Manual, access to the Nursing Reference Centre was met with over-whelming approval from those nurse who did not generally have access to intranet resources provided by DHBs. By managing access through the Moodle platform safe and regulated access to these resources.

Thinking ahead

In the event that there is as has been shown through this project , potential to develop a national Lippincott's Nursing Procedures and Skills Manual platform it is also practical and valuable, to enable nurses to access this reference resource. (NRC)

Waikato DHB has a long history of working with providers to enable nurses to access these services and monitoring of activity of the Nursing Reference Centre in terms if 'internet hits' illustrates nurses value of the product.

Clearly adding a resource such as the Nursing Reference Centre compliments and enhances the Lippincott's Nursing Procedures and Skills Manual and provides safe and reliable access to materials to its nursing workforce. DHBs or the Ministry of Health would be ill-advised to promote access to free resources and materials available on-line as there is no regulation of this material and may present patient risk and compromise a nurse's practice.

In conclusion, we would like to thank the Ministry of Health for the opportunity to explore the complexities of sharing resources across the Midland region and to demonstrate the benefits of working collaboratively to provide reputable resources to all nurses in our region no matter where they work.