

CURRICULUM MAPPING OF CHILD HEALTH ACROSS THE BACHELOR OF NURSING

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INTRODUCTION

In New Zealand, the Ministry of Health recognises that child health is important and this is evidenced through various government initiatives, such as the Well Child Framework (Ministry of Health, 2016). As child health is a priority for our public health system, the health workforce, including nurses, must be prepared to work with this diverse and vulnerable population. There are no clear guidelines, frameworks to follow or standards which much be met within the nursing curriculum in New Zealand, to ensure all nurses graduate competent to work with children. Child health nursing appears to have no clear or defined place or pathway. Curriculum mapping is a tool that can be used to provide transparency to all or part of a curriculum. This article discusses the process of applying a curriculum mapping approach to the teaching of the child health content in a Bachelor of Nursing programme. The delivery of child health skills and knowledge should be transparent across the programme so that staff and students are confident that the material is being delivered. This involved shaping an appropriate curriculum mapping process, and determining the content of child health nursing necessary for an undergraduate degree. A number of recommendations were made once the curriculum mapping was completed including some changes to curriculum delivery. As a result of this curriculum mapping, students can be confident that they have had the opportunity to gain the foundational knowledge and skills required of a novice practitioner in child health nursing.

RATIONALE / ISSUE

All Bachelor of Nursing programmes in New Zealand have varying curriculum content. In the Bachelor of Nursing degree reviewed for this study, child health was taught in a number of papers, across a number of years. No single staff member seemed to have 'ownership' of the child health content. The author felt that the child health content needed to be streamlined, clarified and aligned so that all staff and students are confident that child health nursing content is covered, and covered appropriately. Once it has been determined what content needs to be covered, and where, academic staff can then focus on how they are to deliver the content in a manner that best suits the needs of the learners.

One of the key concerns identified was that there were no clear guidelines as to what needed to be taught in relation to child health. It needed to be defined further as to what content needs to be taught, as it is impossible to teach everything there is to know about child health nursing, in an undergraduate degree. Also, child health is considered to be a speciality area, and therefore many nurses go on to postgraduate study to learn more about the topic. So therefore what needs to be taught, if anything, at undergraduate level?

LITERATURE REVIEW

Curriculum Mapping

Curriculum mapping is concerned with what is taught, how it is taught, when it is taught, and the measures used to determine whether or not the student has achieved the expected learning outcomes (Harden, 2001). Harden (2001) continues on to state that curriculum mapping provides a broad picture of a particular aspect of the curriculum, and allows for greater transparency for staff and students. This is supported by MacNeil and Hand (2014) who state that curriculum mapping can improve the transparency of the curriculum and assist the faculty in examining program alignment, pedagogy, and assessment. Teachers and students should be able to look at the curriculum and know what skills and knowledge are taught, including when and where. In the Bachelor of Nursing programme studied, it was unclear if the students had a clear outline of the teaching of child health throughout the course, and many staff also seem to be unaware as to what child health content is taught. Curriculum mapping 'represents spatially, the different components of the curriculum' (Harden, 2001), and should therefore provide transparency and clarity as to where these skills and knowledge are taught. After the curriculum mapping has occurred, instructional alignment could then be completed to define further the specific content to be taught within each year.

The solution to streamlining and structuring the child health nursing skills and knowledge within the Bachelor of Nursing programme is through curriculum mapping. This is similar to the work completed by Landry, et al. (2011) who used curriculum mapping in nurse education to identify redundant course content and identify gaps in the curriculum.

Curriculum mapping is a technique where the aspects of a curriculum are pulled apart, examined, and mapped out to decide whether or not the content is covered, where it is covered and whether or not it is taught in the appropriate time and place. It is an ongoing process that can offer collaboration and collegiality (Uchiyama & Radin, 2009). For the purposes of this exercise, the curriculum mapping is focused on the taught curriculum (Harden, 2001; Spencer, Riddle & Knewstubb, 2011), that is, the actual content that is being transmitted to the students across the Bachelor of Nursing programme. Uchiyama and Radin (2009) state that curriculum mapping helps to answer three critical questions. The first of these is 'who is doing what', which was identified as a key question to be answered. The next critical question, adapted for this project, is 'How does the work align with the program goals and standards'. How the content aligns with what needs to be taught in child health nursing will be discussed further on. The third question is 'are we working efficiently and effectively', which was beyond the scope of this particular project.

A distinct process for conducting a curriculum map is unclear in the literature. There are however some authors who discuss the process that they used in a mapping exercise. Harden (2001) discusses 10 windows through which the curriculum can be viewed (Table 1).

The expected learning outcomes
Curriculum content or areas of expertise covered
Student assessment
Learning opportunities
Learning location
Learning resources
Timetable
Staff
Curriculum management
Students

Table 1
10 windows for curriculum mapping (Harden, 2001)

Once these elements have been viewed then these different perspectives allow the curriculum to be aligned and transparent. Uchiyama and Radin (2009) state that curriculum mapping is a cyclical process consisting of 5 stages, which when followed, will result in a more streamlined and integrated programme (Table 2).

develop individual maps for each course
review and aggregate maps (horizontally) by course
aggregate the maps (horizontally) by course
identification of strengths, gaps, overlaps, revise course and implement revisions
repeat the process

Table 2
5 stages of curriculum mapping (Uchiyama and Radin, 2009)

Sumsion and Goodfellow (2007) developed their own process after review of current literature to a matrix that included one axis with skills and attributes (literacy, numeracy, IT, self-awareness, communication, cultural understanding, critical analysis, problem solving, creativity, organisational skills, ethics), and another axis with indicators - assumed, encouraged, modelled, explicitly taught, required and evaluated.

Spencer, Riddle and Knewstubb (2011) mapped their curriculum according to what was explicitly taught, what was encouraged and what was modelled (and a combination of these). They also looked at what content was assessed and what content was assumed. These maps were visually easy to look at and determine what content was covered and what was not.

There also appears to be a growing body of literature that discusses the use of technology to complete a curriculum mapping, such as that discussed by Komenda, Vita, Vaitis, et al. (2015). In this paper the authors discuss a framework for mapping using data mining using a specifically developed computer programme.

It is through the review of these models for curriculum mapping, that a process for this particular project, has been developed.

PROCESS

The process for undertaking this curriculum mapping project, determined by the above literature searches, was as follows:

1. **Decide on the content that needs to be covered.** Deciding on the content is an integral aspect of the curriculum mapping process (Harden, 2001).
2. **Determine the learning outcomes for the content.** A list of learning outcomes that need to be achieved have been determined from the key document used (RNZPS & NCYPA, 2014).
3. **Determine where the learning outcomes are best placed in the programme.** An attempt has been made to map the learning outcomes to what existing papers best suit the learning outcomes
4. **Determine what is currently being taught.** Once the learning outcomes have been determined, the next part of the process is to determine whether or not those learning outcomes are currently being achieved in the course or not. This is essentially mapping the current teaching and learning in the programme and involves engaging with staff teaching in the programme.
5. **Identify the gaps in the learning outcomes.**
6. **Make recommendations to what needs to be included or adapted into the taught curriculum.**

Determining the content that needs to be covered

One of the most significant questions at the commencement of this project asked what child health content we should be teaching. Like most speciality areas, in any discipline, child health nursing has a vast array of content. Majority of this content is taught at post-graduate level once the student becomes a registered nurse (RN) and is working in paediatric nursing. What *specifically* do we need to teach to our undergraduate nursing students?

A literature search was conducted utilising a number of different key words and combinations to determine whether or not there was any literature on this specific topic, which produced no useful findings. There were no results which specifically stated what specific content in relation to child health nursing should be taught at undergraduate level. There was one potential result (Gibson, Fletcher; & Casey, 2003). It referred to formulating a set of competencies that specialist children nurses should possess. It identified a number of knowledge, skills, abilities, values and qualities. This article was interesting reading but unable to be translated directly to the New Zealand environment due to the differences in nursing registration between New Zealand and the UK, where the study took place. As no other peer-reviewed referenced journal search resulted in any useful results, I then turned to any other sources of literature that could be found.

The Nursing Council of New Zealand authorises all nursing schools in New Zealand and gives direction for curriculum delivery and content (NCNZ, 2014). In this handbook, there is no specific information in regards to what child health nursing content should be delivered. The handbook does state however that the curriculum needs to be based on the national health priorities and contemporary health care and practice trends, of which child health features considerably.

There are a number of Paediatric Nursing text books on the market, and all generally have similar information regarding the care of children. Two such text books were reviewed for the purposes of this project – Hockenberry and Wilson, 2013; and Haley, (Ed), 2013. There obviously is a vast amount of information included in these texts, and neither text book differentiated between content that should be delivered at undergraduate level, and the remainder at postgraduate level.

Along with an extensive literature search, a number of other resources were reviewed (WHO, 2003; NZNO, 2013). None of these resources were able to clearly state what content in regards to child health, should be delivered to undergraduate nursing students.

There was one document, however, that does determine what the essential skills that all nurses should understand in regards to working with children. This is the New Zealand Child Health Nursing Knowledge and Skills Framework (2014) and has been developed by the Royal New Zealand Plunket Society (RNZPS) and the NZNO Nurses for Child and Young People Aotearoa (NCYPA). This document acknowledges the responsibility that society has to ensuring the care and protection of our children, their place in our society, and the nurses' responsibilities to the Nursing Council of New Zealand. It also identifies that there are a number of levels of practice involved in child health nursing, from a newly registered nurse to a nurse practitioner. The core part of this document is that it identifies a number of aspects of care, and then, what in regards to this aspect of care, is essential for all nurses to know, extended knowledge for speciality nurses, and extended further for those practitioners in advanced practice. This document clearly states that when someone becomes a registered nurse (RN), they should have been taught the essential aspects of care for child health knowledge and skills. Therefore, for the purposes of this report, I will be using what this document states as 'essential' knowledge and skills as the basis for what should be covered in the Bachelor of Nursing curriculum.

Determining the learning outcomes

The learning outcomes were adapted from *New Zealand Child Health Nursing Knowledge and Skills Framework* (RNZPS & NCYPA, 2014). There were 34 learning outcomes in total. In some cases, knowledge and skills from the framework have been merged to make one learning outcome. Some knowledge and skills have also been omitted as they are not appropriate for the undergraduate nurse.

The essential skills from the framework were adapted into learning outcomes using the term 'Gained foundational knowledge (or skills)...'. For example, the essential skill "*Functions in accordance with legislation to safeguard the best interests of children*" was changed to "*Gains foundational knowledge in legislation specific to children*". Foundational knowledge is defined as "the basic building blocks needed for the sequential and cumulative development of understandings and skills in a specific discipline" (McInnis, 2002, p34). The author goes on to state that in the higher education realm, foundational knowledge encompasses this but also refers "to the learning required for lifelong learning in particular fields" (McInnis, 2002, P34). In this context, foundational knowledge therefore means that the student has gained the necessary building blocks of child health nursing so that they are able to enter into this field of nursing at a novice level. When a student graduates they are a novice practitioner with little understanding of the contextual meaning of the recently learned theory (Benner, 1984). Benner (1984) goes on to state that their behaviour is rule governed, limited and inflexible.

The student's experience of learning about child health can potentially progress from gaining this foundational knowledge, through to understanding, and application. The experience may begin by being taught the content, or the knowledge and skills in a dedicated learning situation. They will then have the *knowledge* that they need in this initial stage. The *understanding* of this knowledge may be when they are able to explain the topic themselves, in their own words. This is often not formally assessed and we can only assume that the student can translate that knowledge into understanding. A deeper understanding of the content will occur when the student is able to *apply* that knowledge and understanding. This could be in a simulated experience, or on a clinical placement.

For some learning outcomes, the foundational knowledge stops at understanding. For other learning outcomes, the foundational knowledge includes application, as this is necessary for the learning to become deeper. For example, learning outcome 1 – *gained foundational knowledge of child health determinants and their distribution in the population group*. Students are delivered content regarding this topic in a lecture situation. It is then the student's role to think about this content, and gain understanding from it. There is no apparent need, as an undergraduate, to have to apply this knowledge in a simulated or clinical situation. Therefore the foundational knowledge for this particular learning outcome stops at understanding. Learning outcome 7 however, is different. This learning outcome – *gained foundational knowledge regarding effective communication with child and family/whanau*, may also be taught in a lecture situation. It is in the simulated or clinical experiences, that the student is able to *apply* this knowledge and learning when they talk to children and their families. Application is a crucial aspect of foundational knowledge, in this particular learning outcome. In the mapping process, it is stated whether or not a learning outcome needs to have just knowledge and understanding, or whether application is required as well for foundational knowledge.

Many of the learning outcomes are not specifically assessed. Therefore staff will not know whether or not the student actually does have this foundational knowledge when they graduate. We can say, however, that the student has received instruction in these learning outcomes, and had the opportunity to learn about the topic. They have been given specific information that, if completed, will give them this foundational knowledge in child health nursing.

It is through gaining this foundational knowledge in child health nursing and achieving these learning outcomes that the student will be able to graduate as a novice practitioner, prepared to begin to work with children and their families.

Determining where the learning outcomes are best placed in the programme, determine what is currently being taught, identify gaps, and make recommendations.

A curriculum mapping process was determined which best suited the needs of the current curriculum delivery model. This process was determined from the above mentioned literature review. In the first instance, each individual learning outcome was reviewed. For each of these, current curriculum content that related to this learning outcome was determined. To do this, course outlines were accessed along with online course content, and discussions with course coordinators. Learning opportunities within the courses were then explored. This included more specific details such as lecture and tutorial topics. The learning location was then reviewed, ie, where this learning should take place, whether this learning outcome is best suited to the classroom environment, simulation, lab, online learning tool or clinical placement. Notes were made on what is already being delivered and what may need to be adapted for this specific learning outcome.

Table 3 gives three examples of the outcome from this mapping process. The current learning opportunities were clearly identified which led to a number of recommendations being made.

MODIFIED LEARNING OUTCOME	CURRENT LEARNING OPPORTUNITIES	RECOMMENDATIONS
Gains foundational knowledge of nutrition and hydration needs including breast/infant formula feeding/weaning, food preparation and storage	Some limited information in Pregnancy and Childbirth workbook. Generic nutrition knowledge in relevant module	Increase the content of breastfeeding and infant feeding. Include content into online interactive paediatric workbook. Introduce a child nutrition tutorial.
Gains foundational knowledge of hazards for children and injury prevention strategies	Home safety assessments year 1 Discussion of home safety in child health module	Increase the content of home safety in the online Paediatric workbook including interactive activities
Gains foundational knowledge in oral health and dental care for children	Lecture on the social and political impact of poor oral health in Professional Nursing Lecture and tutorial in Pathophysiology	Keep current content. Include more interactive content on the topic in the online Paediatric workbook

Table 3
Examples of outcomes from mapping process

RESULTS

The primary outcome of this process of curriculum mapping is that it has provided *transparency* to the teaching of child health nursing across the Bachelor of Nursing programme. There were a number of conclusions that were determined from this mapping process. The most considerable outcome was that most of what was considered essential skills and knowledge for nurses beginning to work with children, was already being covered. This was a surprising finding. As there was little transparency in what was being taught, it was assumed that there were many gaps in the teaching and learning of child health. This was not the case.

There were some learning outcomes that appeared not to be covered at all within the programme. These needed to be addressed as soon as possible, as they are significant knowledge and skill gaps for the students. Many learning outcomes were being taught but were not aligned well. A curriculum alignment of some of the content would enhance the learning experience for the student.

There was a significant overall recommendation that came out of this mapping process. It was recommended that the teaching of child health be stair-cased in the following manner: Year 1 – Introduction to nursing children; Year 2 – Well child nursing; Year 3 – Sick child nursing. This came about as a significant amount of the teaching and learning was structured in this manner anyway. It just wasn't identified clearly as such. By doing this, further transparency to curriculum content was provided, and a clear path for the teaching staff and students was laid. The learning outcomes are then able to be allocated to an appropriate year, which assists in the curriculum design, alignment, and planning of course content.

CONCLUSION

In summary, the process of undertaking a curriculum map of child health nursing in the Bachelor of Nursing programme was considerable. This curriculum mapping exercise was the initial step in providing well organised and appropriate child health nursing content within the Bachelor of Nursing and therefore determine the place of this essential component. The mapping process identified was able to produce results that determined a clear set of learning outcomes, identified gaps in curriculum content, and therefore provided direction and transparency for future teaching. As a result of this mapping and gaps being rectified, students can be confident that they have enough knowledge to be able to be a novice practitioner in child health nursing, and hence be a work ready graduate.

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