A Clinician-led User Group Model to Enhance Development of an Electronic Maternity Record System

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Abstract

After spending 6 years trialling 3 different electronic practice management systems for community midwives, in 2004, the Midwifery and Maternity Provider Organisation (MMPO) settled on an 'off the shelf' maternity PMS product. Midwives soon learned the value of a maternity specific PMS and worked with the vendor to enhance the product more. In 2008, the first of 2 District Health Boards also introduced the same software into their maternity service. In order to reduce the risk of system being hybridisation, the MMPO, DHBs and other users of the same software formed a national user group to guide future development of the product.

The user group works in partnership with the software designer and owner and is heavily represented by practicing clinicians, midwives and obstetricians which has enable the clinical application of the software to be developed more in keeping with day to day needs of the service.

This presentation will track progress of the development over time and identify key achievements such as being able to transfer the electronic record from the midwife's PMS to the hospital when the woman is admitted, the development of a soft copy of the maternity record for women and the development of standardised reports for use in benchmarking between provider groups both in the community and hospital.

1. Introduction

The Midwifery and Maternity Providers Organisation (MMPO) has worked in partnership with a maternity PMS software vendor to shape an electronic maternity record to:

- collect and retain information on womens' care from early pregnancy to 6 weeks following the birth
- guide midwives to meet all the requirements of the service specifications and payment schedule Section 88,
- generate booking forms, birth notification forms etc.
- import diagnostic tests and file then in the woman's electronic record,
- enable claiming electronically
- build up a maternity care activities and outcomes database
- produce midwifery standards review (MSR) reports that meet the requirements for the midwives recertification programme with Midwifery Council.

In total, the system collects 450 fields of data on the mother and baby during the care interactions between the woman and midwife. Women can also have access to an electronic copy of their record.

Basically the MMPO functions to co-ordinates the flow of information between LMC midwives and HealthPac (who pay the midwives through the MMPO) to ensure the data received is as accurate and complete as possible, reducing the need for double entry. The MMPO has a back up copy of all midwives 'cases' which has proved valuable, particularly in the case of the recent CHCH earthquake. In the year 2010, the MMPO collected data from 30,000 separate electronic maternity records contributed to by 876 LMC midwives from throughout New Zealand.

As a result of the data captured the MMPO has been able to achieve the following:

- produce a standardised set of reports on activities and outcomes by midwife, by practice, by DHB region and nationally,
- contribute to MOH funded research projects on smoking and postnatal hospital stay,
- contribute to a WHO investigation into postnatal blood loss (we have the largest single collection of data collected in a standardised way in the world),
- manage data collection for projects on outcomes by place of birth through Otago and Sydney Universities.
- Contribute to the Waikato University "Growing up in NZ" study.

2. Interest in the software by DHBs

Midwives in New Zealand provide care to women in the community from early pregnancy then continue providing midwifery care when the woman in admitted to the hospital to birth. Midwives in Northland and Otago DHB regions, frustrated by the lack of data captured when the woman was in hospital, encouraged the maternity services in their areas to introduce the same software they were using into the DHB. From this point on, both midwives and obstetricians became active participants in further development of the software.

3. Principles of sharing the software

Because of the MMPO's previous experience in the use of other software that had become hybridised through the lobbying of the software provider by different users, the MMPO was keen on the formation of a user group. With the agenda set by the users, the group is facilitated by the software designer/owner and consists of MMPO midwives, medical users, DHB clinical directors, midwife users and DHB IT staff.

The meeting format consists of a full day meeting where an agreed agenda of 'issues' and innovations to arrive at consensus over further development of the system including prioritisation. This is followed by email discussions on progress including the timing of potential and planned changes to the system. Clinicians are committed to having an electronic maternity record that can be used at point of care, is responsive to the clinical need for timely information to guide practice and has the secondary use to measure performance.

4. Shared primary and secondary/tertiary development activities

Since the DHBs and a number of birthing centres have been using the same software as the midwives, the following and many other features have been developed including:

- Increase in maternity variables for data capture to handle secondary/tertiary care requirements.
- Development of secondary/tertiary care functionality including a NICU/SCBU module, CS operating notes, ADT and ward management, fetal monitoring, allied heath referrals and consultations, intra-facility (DHB) transfers, HL7 PAS interfacing technology, Data warehouse extract functionality, Robson category reporting.
- All major DHB interfaces have been developed including NIR, DIA(Birth Notices), BFA (Baby Friendly Hospital Initiative), NZHIS data collection and WFA Benchmarking,
- Extension of maternity care and activities outcome reporting to include secondary and tertiary care indicators.
- Agreement over data fields for submission of admission data from the LMC to the maternity facility.
- Development of electronic booking forms, prescriptions, referral letters that pre-populate and can be sent electronically.
- Transfer electronically from the LMC midwife's record to Otago DHB's electronic record, booking, admission and referral information. We plan to investigate how information entered by the LMC into the hospital software can be transferred back to the LMC's system.
- Integration of the "Grow Chart" decision support tool into the software.
- The introduction of a women held electronic maternity record.
- The development of community data capture options via smart phones and MCAs

- Concerto integration

Even though the system now accommodates the needs of a tertiary maternity service, the screens used by the LMC midwife in the community and those used by the obstetrician in the hospital re identical. This has greatly enhanced the clarity of communication between clinicians.

5. Challenges in primary/tertiary sharing the same electronic record

One of the key challenges in sharing the same electronic record in both primary and tertiary settings, relate to the amount of information each 'sector' wants and the value placed on collecting the 'extra' information. The tertiary service have built up the fields of data captured around the caesarean sections, while the primary providers are keen to further develop up decision points in pregnancy 'triggers' that remind the provider to discuss and record information as the pregnancy progresses. Priorities placed on these activities do challenge the group.

6. Resourcing for software development activities

Both the DHBs and the MMPO midwives pay a software licence in the expectation that the software will undergo enhancement. The vendor costs are covered by the license fee and a group of electronically enthusiastic MMPO midwives and DHB users offer to trial changes to the system as they can see the advantages. The DHB clinicians and midwives can see the value in being able to enter information at the point of care for multiple purposes and have a familiar 'system' both within and out of the hospital setting.

7. Future activities

This process provides a model which could be used by the Health IT Board's Shared Maternity Record Project. This project which is set to pilot early in 2012, will require community based midwives and GPs to work in with hospital based clinicians to both identify the indicators/information that should be included within the Shared Record and to trial use of such a concept. Most debate will likely centre upon the amount of data needing to be shared, however using a group process directly involving the clinicians face to face will enable agreements to be reached.

8. Summary

The software has been developed and supported by clinicians and the designer for the unique New Zealand maternity service setting over 12 years. It has now become sufficiently integrated to addresses the specific needs of all maternity care organisations from a single self-employed midwife through to a DHB Region. The unique integration philosophy between the primary care and DHB systems already provides many of answers for the next generation of specialist health solutions in New Zealand.