

1. NEW ZEALAND COLLEGE OF MIDWIVES: MATERNITY NOTES AND MATERNITY PRACTICE MANAGEMENT SYSTEM

1.1. PURPOSE AND APPROACH

This case has been developed by Synergia under contract to the Primary Healthcare Strategy - Key Directions for the Information Environment¹ Programme, managed jointly by the Ministry of Health and District Health Boards. The purpose is to enable a better understanding of existing primary health information capability so that this informs a more coherent developmental approach for the sector as a whole.

To achieve this a survey was undertaken in late 2006 from which eight initiatives were identified for their potential to illuminate five capabilities previously identified as components of the future shape of primary health; population health, targeting care to individuals, self management of health, coordinating care across services and evidenced based performance improvement.

The New Zealand College of Midwives Maternity Notes and Maternity Practice Management initiative is one of eight for which a more detailed case analysis has been prepared.

In writing this case we are seeking to:

- Describe the multiple levels on which any real world, organically emerging initiative operates; the daily practical components through to the longer term outcomes and aspirations of those involved
- Articulate the experience contained within each initiative to highlight the five functional areas described above; what has been learned and where is the initiative heading
- Tease out the dynamics which have lead to the initiatives formation and issues involved in sustaining and developing its capabilities into the future
- Suggest elements of this experience that could have value to the sector as a whole – the small seeds of the future composite success model for the sector as a whole

This case should not be read as an authoritative description of each initiative, for this purpose please use the contact details provided at the end of the case.

¹ Information Environment: The collective information capability (people, processes and technologies) used by all people engaged in the health system to make decisions and act effectively to support the health and well being of themselves, others and communities.

1.2. KEY COMPONENTS (MULTI-LEVEL STATE DESCRIPTION)

The New Zealand College of Midwives, through its subsidiary, the Midwifery and Maternity Provider Organisation, operates a standardised and comprehensive maternity notes system, held by both the mother and her midwife, linked to an electronic Maternity Practice Management System.

Taken together, the two components provide:

- a shared set of clinical notes agreed by provider and recipient of care
- a streamlined system for claims payment
- a quality assurance mechanism for review of practice
- a database for individual, practice and professional-level outcomes monitoring.

1.3. CASE DESCRIPTION

Overview

The New Zealand College of Midwives (NZCOM) established the Midwifery and Maternity Provider Organisation (MMPO) in 1997 to assist midwives' case loading with an efficient practice management system. To achieve this, a set of midwifery notes were married with an electronic Maternity Practice Management System (MPMS), which supports adherence to section 88 and NZCOM quality frameworks. These notes create three information capabilities: (1) clinical records and care plan for the midwife and woman in care; (2) payment claims management; and (3) midwifery outcomes data used for annual standards review at an individual midwife level, and professional practice at an aggregate level.

The system is surprisingly simple. A bound set of paper-based notes, with perforated pages, are held by the expectant or new mother, covering the course of the pregnancy, labour and birth. Pages are in triplicate and removed at particular points through the care:

- One copy is held by the midwife or doctor
- A second copy is forwarded to MMPO for entry of specific indicators into the database. These are then used for claiming and incorporation into the midwives' annual standards review. The midwife retains this for ten years.
- The third copy remains in the book of notes as the woman's record, providing a history of the details of each woman's birth experiences for the woman and her lead maternity carer to reflect on.

The notes are based on an accumulation of evidence around best practice in maternity care, and provide both signposts and records of the care of each woman using the notes.

At the time of interview, approximately 700 midwives were using the notes and MPMS, covering approximately 20,000 of the 57,000 births that take place in New Zealand annually.

Each set of notes costs a midwife \$10, which covers the administrative costs of claims review and payments, and standards review documentation. Some midwives can

enter the claims data directly into the database, but retain a set of paper notes to share with the woman.

Midwives have ownership of their own data, and no other person can look at their standards review report without their permission.

Each set of notes comes with three identifiers: the notes book number (which records a single pregnancy); the woman's NHI; and the woman's name and DOB.

MPMS software was developed by Solutions Plus Ltd, an Auckland-based company specialising in obstetrics and gynaecology. Prior work in system development with other companies was unsuccessful before linking with the current vendor. The maternity notes are now well-established, but the data entry system for the MPMS is being constantly refined and improved.

The system has gained support of many obstetricians, but a key barrier reported by NZCOM staff was the resistance of DHBs to adopt the notes or to create interfaces with hospital systems. In NZCOM's view, these primary care-based notes provide the record of the predominant amount of care for a woman from early pregnancy, yet they perceive that DHBs regard the information collected through secondary systems to be more valuable. Anna (a consumer interviewed for this case study) found that when she was admitted to hospital, the hospital staff would frequently refer to the MMPO notes, yet would not record any information in them. When she received copies of her hospital records, some details were incorrect (such as the amount of sleep she received one night), which she felt would not have happened through the shared recording that occurs through the MMPO notes.

Clinical records and care plan

The first information capability is a set of clinical records that are held by midwife and the woman in her care, and where key clinical data is also stored separately on the MMPO database. With notes held jointly by woman and midwife, a shared understanding of the pregnancy and birth process is created. Karen Guilliland, the CEO, said "the purpose of the notes was to influence and guide what should be written down. The notes act as flags for what to do and ask." She argued "what we've managed to do is partner with the IT sector bringing the knowledge of the business of primary health care. Most practitioners have an ethic of primary care, what this has done is incorporate an ethic of midwifery care."

A care plan checklist within the notes records the decisions made between the two parties (woman and LMC) about the preferred methods of care, and documents that such discussions took place. As MMPO's Executive Director, Chris Hendry, explained:

"You can take shortcuts around what you explain to women. But there's no way you could take shortcuts using these notes, because it's utterly evident, because the woman gets a copy at the time of the visit, and you retain a copy, so you can't retrospectively write things that you've never said or done.

Anna, a woman with a young daughter, spoke positively of her experience with the notes, particularly that she could refer to anything the midwife had written, and could supplement the midwife's records with her own experiences. The glossary contained in the notes gave her an understanding of the terminology used.

Jacqui Anderson, a practising midwife, encourages women to write some things in the notes, particularly issues they wish to find out more about, but also noted a tension between the concepts of shared record and personal diary. Because the notes inform the midwife's review processes, some recorded information, which could be considered personal to the mother and baby, could be viewed by more people than the mother would wish to.

Anna said she felt the records "were mine", and that with them "I was in control and the midwife was helping me." "[The notes] gave me just a huge feeling of safety in terms of, if my midwife was away, that if anything went wrong, I knew that I had all the information." Anna noted that some friends were upset that they didn't have their own set of notes:

"I referred to them the whole way through my pregnancy and friends that were pregnant at about the same time that didn't have these notes, were upset that they didn't have them too. Because, talking to them, they actually didn't have any written record at home at all, other than what their midwife had kept themselves, for the pregnancy."

In terms of promoting self-management of health, NZCOM staff, along with others interviewed, suggested that the consumer-held notes are good way of promoting this concept. Norma Campbell argued that women have knowledge of their space and the midwives have knowledge of their profession; professional knowledge isn't superior to knowledge of one's self, rather the two are complementary. Anna said the use of the notes promoted self-responsibility, by documenting the care she needed to take throughout the course of the pregnancy.

The recent extension of the system to allow remote electronic entry of data has meant that some midwives enter data twice: once electronically and once on paper for the woman's own set of notes. Most who are doing electronic data entry also do a paper version for the women in their care, which Karen Guilliland says is in line with the professional expectation of midwives in terms of their partnership with women.

The NZCOM staff and Jacqui Anderson thought that practitioners were more careful about what they wrote, given that the notes are also held by women. As one interviewee said, people don't necessarily write things to be cruel or judgemental in health records, but more care is taken with the MMPO notes.

Payment claims management

The entry of claims data by MMPO creates the second capability of same-day claiming for LMC activities, with as much as \$1 million paid out each week through HealthPAC. Chris Hendry estimated that 85% of any claim rejections can be cleared by MMPO staff, without recourse to the midwife because each claim contains more data than required by HealthPac and also brings up the complete record of the woman's care, which can be used to ensure data sent to HealthPac is in alignment. Only 0.2% of claims submitted to HealthPAC are rejected.

Student midwives now use a smaller set of the notes in training, which costs the schools \$1 each and have access to a 'blind' database which they use to individually store data on their activities and experience. These also assist as teaching tools and also in the transition of the students to practising independent midwives.

Jacqui Anderson said that the ability to combine client management, claiming and standards review in the one process was invaluable. The notes and MPMS made it possible for midwives to meet the needs of operating independently, alongside the responsibility to provide care. She said integrating the notes within the MPMS worked because "we can do it once and everything is done while seeing the woman."

Jacqui estimated that it saved her 6 hours of work per client she was managing, including claim forms, documentation post-birth, register completion and other compliance requirements. NZCOM staff thought that the MMPO notes have helped retain many midwives within the profession, by allowing them to maintain caseloading without an intensive business management workload.

Chris Hendry argued that the MPMS underpins the financial viability of many midwives' business:

"And that's critical from a workforce perspective, because we need those people to be solvent. We need them to be making a living, we need them to actually be, you know, happy to remain in the practice. They love being midwives, but actually their families need to be fed."

This was echoed by Norma Campbell of NZCOM, who said the system was helping retain midwives in the profession:

"It's sustaining them to stay there, to offer that care to women which is continuity of care in the community, otherwise that community might not have any midwives available who are willing to do that. So taking care of the business stuff means that those midwives are happy to remain caseloading, which for women is huge around continuity of care."

Loss of notes appeared to be quite rare. Occasionally a woman would lose them, but not often, and on days where women forgot to bring them into an appointment, a replacement sheet could be provided. MMPO staff felt the system was more reliable than other medical records:

"People say you'll lose them. Honestly go in and ask the staff how many times we've been asked to provide a copy of the stuff. Because actually the midwife has already got a copy. She only needs to buy another set of notes and continue on where it got left off. Even a laptop has been damaged and we've got back-up data. Every time a midwife sends a claim to us, we've got a complete back-up of her system. "

Annual standards review

The third information capability is the capture of all data needed for a midwife's annual standards review. In so doing, this process captures more data than is collected through the more cumbersome HealthPAC claim forms. These data include:

- Antenatal statistics
- Labour and birth statistics
- Babies and birth statistics
- Postnatal statistics.

The MMPO provides the information in a spreadsheet for midwives, in time for annual review or at earlier intervals where required. Those using the system remotely can obtain standards review spreadsheets whenever required.

Norma Campbell, who coordinates the standards review process for NZCOM, said that the electronic data recording has made huge differences to midwives' understanding of and reflection on the care they are providing to women:

"To be part of the MMPO means you must be a member of the College of Midwives, and you must be reviewed which was a requirement before it became Standards Review became compulsory. That's about quality assurance. So the women also contribute into that process which ultimately affects the care that they then receive.

Because a midwife looks at their Standards Review Report and thinks goodness, you know, I'm not so flash on that. She will improve her care as a result. Now what midwives can have the electronic version of it now, they can, on a monthly basis, pull up a report on their outcomes. They can run their own reports. They can also ask for a report if they're not on the remote. They can ask the MMPO to just send a copy through. If you're in a practice of 4 or 5 midwives, 6 midwives, then the MMPO have devised a request form. If everyone signs it, you can then get a copy sent to you so that your colleagues, and you can sit together and look at your data outcomes for the month, either 6 months or for the year as a practice.

So when midwives are preparing for review, it actively encourages them to look at their practice, and their practice outcomes. Consumer feedback forms also get sent out to women on a regular basis, so that they're getting feedback from the women as well."

Feedback from midwives has indicated some were surprised at how many or how few caesareans or induced births were undertaken over a full year. Others have spoken of changes in practice, such as investigating how they spoke with women and prepared for the birth.

The ability to access standards review data has created conversations about performance at a practice level, according to Norma Campbell. The reports provide a point of reference around each midwives' work within a practice allowing them to identify patterns of care, and gives them information that they can place in a context.

Karen Guilliland said the MPMS quantifies midwifery practice in terms of outcomes, and brings home how they are practising, allowing reflection on the actual facts of their caseload.

The electronic recoding of maternity data collected through the notes resolves potential tensions between clinical needs and business needs. Because submission of maternity notes is required to enable HealthPAC payments, all clinical data is collected concurrently with collection of claims data. Therefore, when standards reviews are undertaken, all maternity outcomes data are available for examination. As Chris Hendry explained, the MPMS maintains both "the expectations of the profession and of women", while at the same time ensuring an efficient claiming process.

The standards review process also raises issues at a professional level, rather than just an individual level. Karen Guilliland gave an example of feedback on post-natal care informing professional practice:

“The other factor of Midwifery Standards Review... is that all the women are invited to give feedback on their care. And one of them was that maybe in post-natal care, it was rumoured there were not enough visits being done in some regions. Using the regional MMPO outcomes reports which obtain data on actual and average postnatal midwifery visits, we could investigate the reality and the reasons behind concern over reduce visits. Then you might find, that these were isolated cases, because there appeared to be a high average postnatal visit rate, or actually that the average rate was low and there were just not enough midwives to do the job. In some regions we found that actually the midwives had de-valued post-natal care and they had all their energies put into antenatal and labour cares. So in response, we added post-natal examination and discharge into our College education portfolio, particularly for those regions. We then advised the Midwifery Council, that they should include postnatal examination in their mandatory 3 year education cycle.

Role of national and district strategies

Staff at NZCOM said that they received no assistance from the Ministry of Health or DHBs in developing the system. They thought that the Ministry’s primary care focus was restricted mainly to the rollout and development of PHOs, and less towards other parts of the primary sector. DHBs they felt were primarily concerned with secondary and tertiary care.

They noted however that the lack of DHB and national support for the initiative allowed NZCOM to develop the system in a way that was more closely attuned to the needs of midwives and women. Chris Hendry argued that “because we haven’t been funded it’s allowed us to develop in the direction that we believe and we have been informed by others, as being the right way to go. We haven’t been hamstrung by bureaucratic red tape. And we are constantly in touch with the coalface.”

Karen Guilliland was keen to see greater support for the notes and MPMS system from district and national funders, but at the same time was nervous about “giving it over” to DHBs and PHOs before they understood their potential. She argued that what was key to their adoption by external agencies is an understanding of how the maternity notes and supporting systems work, then to understand how the principle could be applied to other areas of primary health care – rather than to adapt the notes to apply them generically across primary health care, including maternity.

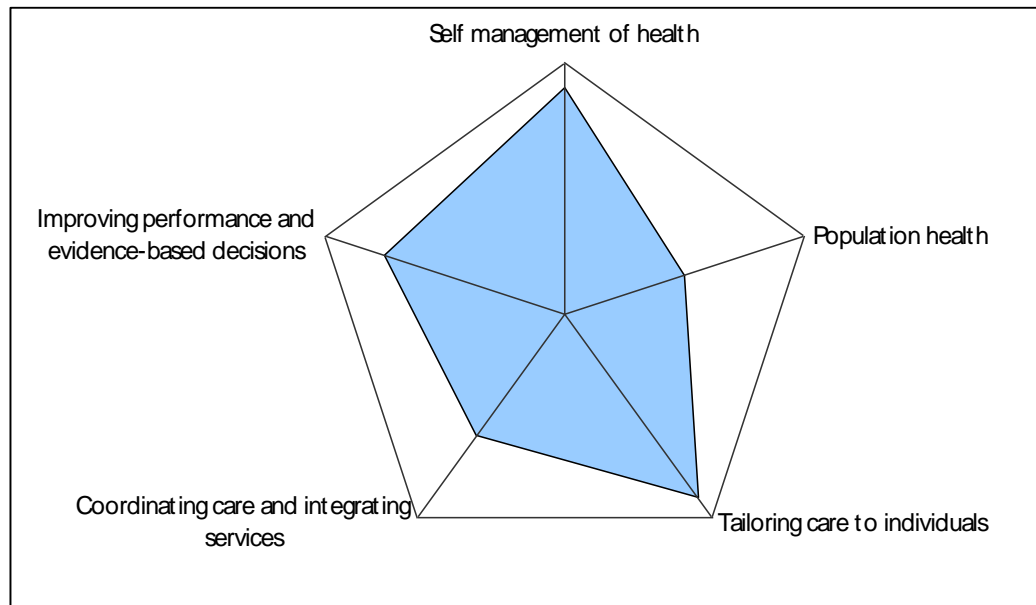
1.4. FUNCTIONAL DESCRIPTION

Through sector consultation the Key Directions programme has identified five clusters of related information capability that form the core for future development. The diagrams in this section graphically represent the profile or footprint of this initiative in terms of its contribution to those capabilities:

 Current state

The diagram below shows strong alignment of the system in its current form with evidence-based performance management, targeting care to individuals and self-management of health.

Figure 1: Current state functional profile



Self-management: There is strong alignment with the self-management theme, evidence by developing collaborative understanding of each woman’s health, and care plans that are tailored to individual circumstances.

Population health: Population health outcomes are currently more limited, although as is discussed below, steps are being taken to address this domain

Tailoring care to individuals: The notes system allows for care to be developed that engages with each individual on the basis of their health needs, identify the appropriate interventions and assess effectiveness.

Coordinating care and integrating services: In terms of coordinating care across services, the notes are primarily a record between the midwife and each woman in her care, but there is also the capacity for the notes to be shared with other health providers, particularly hospital maternity care (as evidenced by the mother who was interviewed for this case study).

Evidence-based performance improvement: The standards review process, which the notes interface with strongly, supports improvements in the practice of individual midwives, and will in the future allow for reflection on practice at a national or regional professional level.

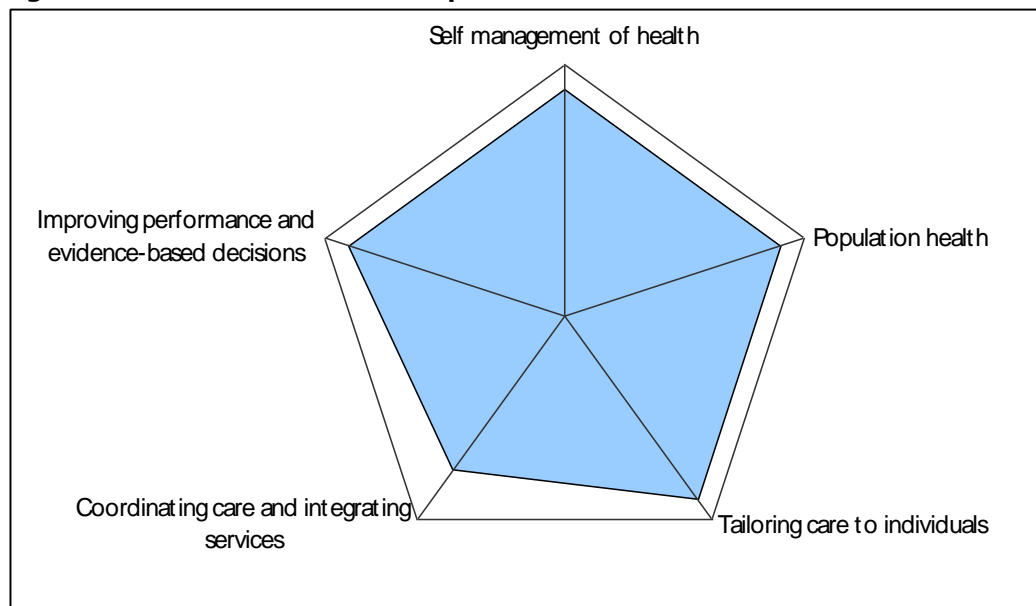
Future state

The key information capability extension of current activities using the notes and the MPMS is the aggregation of data to regional and national level analyses, from current individual and practice-based analyses. This extension into the population health domain will allow measurement against regional and national benchmarks across a range of areas, including maternal smoking, caesarean rates and birth outcomes.

Currently the reporting fields are being agreed with Canterbury University who will undertake the analysis and development of an annual report on Midwifery Outcomes and Care Activities. Because of the speed of data entry using the MPMS, NZCOM staff estimate that a report for one calendar year could be ready by the following March – compared to HealthPAC’s last maternity report which was could only report data as recently as 2003.

A further extension will be the planned incorporation of obstetrician data into the MPMS for claiming purposes. This will increase the depth of information collected through the MPMS and extend the information capability to a further professional group. This data will not be amalgamated within the midwifery database, but retained in a stand alone system for obstetricians to have access to as they request.

Figure 2: Future state functional profile

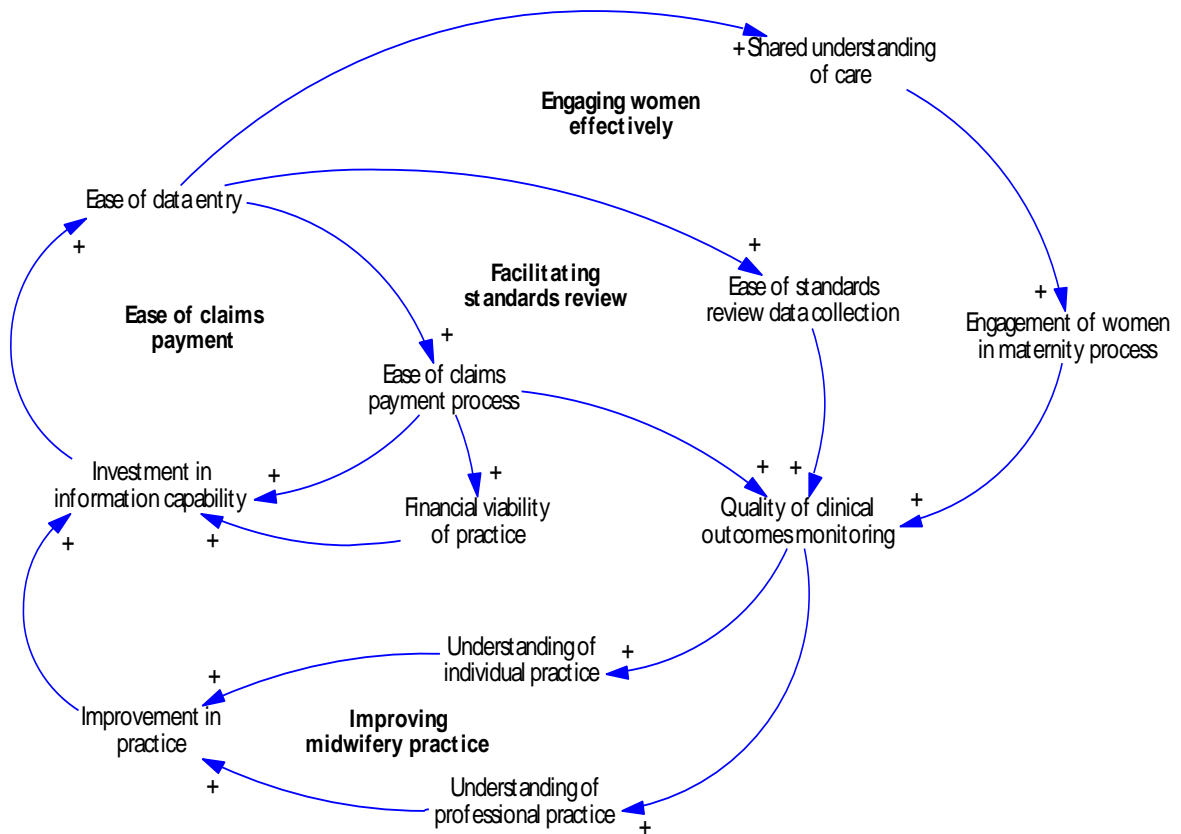


1.5. CRITICAL DYNAMICS

Within each initiative there are some critical dynamics which have led to the initiatives formation and are involved in sustaining and developing its capabilities into the future. Because these are almost always driven by interrelated self reinforcing and balancing processes they are represented using causal loop diagrams that show the relationships and influence effects over time.

The figure below details the key dynamics taking place in this case study.

Figure 3: The dynamics of the initiative



In the first instance, the use of the maternity notes simplifies the means of data entry, streamlining claims payment and standards review processes. By explicitly linking women in the process, a shared understanding of care is developed and women’s engagement in the process of maternity care is enhanced. The three platforms of streamlined claims payment, standards review data collection, and engagement of women all support effective (and accurate) clinical outcomes monitoring.

The streamlined claims payment process supports the financial sustainability of maternity care practice, which in turn supports further investment in information capability. Likewise, the improvements in clinical outcomes monitoring improves practice at individual and professional levels, which in turn supports investment in information capability.

1.6. LESSONS

A key lesson of this initiative is the resolution between the information needs of consumers, clinicians and business. NZCOM have developed a system that provides a shared understanding of a woman’s care during a focused period of a woman’s life and that of her family; it provides the clinical and practice information needed for the record of care to share between practitioners and for monitoring outcomes; and finally it resolves the business needs of midwives in an extremely cost-effective manner. As with many of the case studies in this review, the strength of information capability investments often lie in their alignment with the business needs of primary health

care, by creating a clear linkage between the clinical basis of their work and their managerial and financial operations.

This case study of the maternity notes also reveals that information in primary care need not be high-tech. Indeed, it is the paper-based nature of the notes that facilitates their shared use by midwives and women, and ensures their portability between different venues and providers of care.

A question that arose from discussion of the notes and the systems supporting them was their applicability to other settings. The notes were developed for maternity care, yet the principle of consumer or patient-held notes was seen by NZCOM staff as having applicability to other settings. Anna, the mother who had used the notes, herself worked in aged care and felt that the principle could be applied to aged care. In many aged care settings, it can take up to a month for GP notes to arrive, and complete nursing notes are often not transferred at all. It would be not unrealistic to have a set of notes that moves with the patient, and by quickly ascertaining the history of the patient, could avoid common mix-ups and time wastage. Jacqui Anderson suggested that although not as much might be written in other professions, the notes would still have applicability in situations where a continuity of care is needed.

Karen Guilliland felt that with extra resource support the system could have been more intensively promoted, particularly in its early stages. Without extensive promotion of the initiative, people are slow to adopt or to understand the utility of the initiative. It has taken until now for a significant groundswell of understanding to build.

NZCOM staff were keen to see the notes and the MPMS adopted nationally and funded by the Ministry of Health. This they felt would increase the uptake of the system, improve the quality HealthPAC claiming overall, and would improve the quality, range and speed of data available nationally (particularly the maternity and newborn information system). NZCOM and MMPO are keen to explore increasing the connectivity of the system further. However, they lack the critical mass to link with HealthLink. If the system was supplied free to midwives, they argue they could have all midwives and other lead maternity carers signed up to the system, and all claims proceeding electronically to DHBs.

1.7. CONTACT INFORMATION

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