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POLICY OPTIONS

The use of an electronic health record (EHR) in a maternity shared-care environment

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Policy context

This report describes the study which determined best quality care in two cohorts of women and health care providers participating in a general practice (GP) maternity shared-care arrangement. The two cohorts were compared as those who used a paper hand-held record (PHR), in Phase 1 and those who used an electronic health record (EHR), in Phase 2. The shared-care arrangement was developed as a model to care for women away from the tertiary setting. The model utilises the GP as the link between the woman and the hospital. Incorporating the PHR into GP shared-care has provided a means for health care providers to access maternity information, improving communication and giving women confidence to be involved their own care. Continued improvements in maternity shared-care communications will enable well, low-risk women to be cared for safely in a secondary setting. This has positive flow-on effects to the health care budget.

BACKGROUND

The PHR has been a successful and integral tool used in maternity shared-care for many years. A woman carries the PHR with her and the care given is documented at each visit to either the GP or the hospital health care provider. Increasingly, patient electronic health records (EHR) have been implemented around the world. These records are often driven by government regulations or financial institutions predominantly in the USA, the UK and Denmark. EHRs have been designed to enhance integration and have access to information in a digital format that can be used by both patients and health care providers, from anywhere, at any time. In 2012 and in alignment of the Australian national Personally Controlled EHR (PCEHR) in the GP setting, a maternity EHR was developed and implemented at the Mater Mothers' Hospital (MMH) in conjunction with general practitioners (GPs) in a shared care setting. Prior to the introduction of the EHR, maternity information was documented in a PHR. The woman visits the hospital at the 12-16 week 'booking-in' visit and again at week 36 to 41. The antenatal visits between these times are with the GP. The EHR in a maternity shared-care setting aims to integrate clinical care between GPs and health care providers (midwives, allied health, hospital based doctors) and the woman herself.

This report describes the study which determined best quality care in the two cohorts of women and their health care providers, answering three questions: 1. Completeness of recorded specific evidence based best practice variables, 2. Experiences of women and health providers when using an EHR and a PHR for perception, satisfaction and usability, 3. Integration of care for teamwork, clinical input and process deliverables.

STUDY DESIGN

A comparative cohort, multi-method design was chosen using:

1. Quantitative extraction of evidenced based best practice variables:
    > To identify and compare the PHR (manual paper audit) and the EHR (retrieved from the Matrix hospital database) for completeness of the specific evidence based best practice variables.
2. Qualitative interview data collection:
    > To explore and compare women's, hospital and community (GP) health care provider's experiences when using PHR and an EHR.
    > To determine how the integration of care differs between the PHR and EHR in a GP shared-care setting.

Quantitative Approach

Specific evidence-based, best-practice variables were chosen for comparison in the PHR and EHR, after examining the National Clinical Practice Guidelines for antenatal care and guidelines used by the MMH. Descriptive data analysis was undertaken using frequencies summarised using numbers and percentages. Chi-squared analyses (or Fishers Exact tests for cell sizes less than 5) were used to compare differences between the PHR and EHR frequencies. An alpha level of 0.05 was used to detect statistical significance.

Qualitative Approach

The three groups of interest in the GP shared model that were interviewed to determine their experiences were:

1. Low risk pregnant women participating in maternity shared-care (between GP and MMH), were interviewed face to face.
2. Hospital health care providers (doctors, midwives, allied health, and midwifery managers) who provide maternity services at the MMH, participated in focus groups.
3. Community health care providers (GPs) who provide maternity care to women participating in the GP model of shared-care were interviewed face to face or in small groups.

RESULTS

Completeness of best practice variables

While neither the PHR nor the EHR completely captured of all required best practice variables, use of an EHR demonstrated improved access to antenatal clinical information and greater adherence and completeness of the collection of these variables. While the PHR recorded best practice variables, many of these were difficult to locate in a free text form and only retrospectively found by an audit process. The EHR has the capacity to further improve data capture by ensuring there are specific fields in which to enter the best practice variables. The variables not captured well on the EHR were due to absence of data entry fields.

Experiences of users (PHR and EHR)

Women unanimously talked about 'liking' the PHR and carried it with them. They considered it a tool for storing and sharing information, but many did not look through the whole document or in any detail and so did not realise the full potential of the record. Most of the responses from women described the EHR favourably and most did complete the sign up process to gain a log-in. Women reported a willingness to use the EHR but did not do so, due to lack of instruction or support. There

were women who did not get their log-in to work but still considered the EHR to be an advantageous option over using the PHR and the “way of the future”.

Allied health did not use either the PHR or the EHR, but instead wrote their notes in a hospital chart. They did however consider both the PHR and EHR would be useful tools to use to alert other care providers of a referral that had been made. Midwives and doctors were familiar with manually documenting maternity information on the PHR and thought it to be a good ‘journal’ or ‘diary’ of the women’s pregnancy. Subsequently when using the EHR, midwives and doctors talked about the duopoly of having to enter data into one database system screen view but open another system screen to view output. They also talked about data entry fields changing when modifications were made to the database, resulting in discrepancies with output. All of the hospital health providers were not aware of the EHR from a woman’s perspective.

GPs had a similar perspective to the PHR as did the hospital care providers. They liked the PHR, were familiar with the document and considered the main purpose of the PHR was record antenatal visit information captured at each visit to the GP. When GPs were asked about using the maternity EHR, most comments were around disillusionment with getting access to the record. There were issues with obtaining or forgetting their access key to log-in and also the EHR was reported to have too many steps to open or be very slow to open.

KEY FINDINGS

The findings of the study demonstrated that the EHR captures a more complete set of evidenced based best practice clinical data than the PHR. The EHR data are immediately available once entered into the record and can be viewed and shared by women, health care providers and GPs. Additionally, interviews from women and health care providers have highlighted the benefits and limitations of the EHR and PHR. It is recommended that education be given to women and ongoing education to health care providers, in order to support women using the EHR. The EHR has many available tabs and links to information which are not being utilised because of lack of education around functionality of the system.

In order to move the MMH EHR system forward, local changes in collaboration with hospital managers and health care providers can be implemented:

- Use the EHR to provide a more complete set of maternity best practice variables (greater than the PHR can record manually).
- Modify the current PHR to address issues of redundant or superfluous information.
- Continue education and support programs for health care providers in terms of understanding the functionality of the shared-care EHR and data entry requirements and recruitment process of women.
- Develop pathways to demonstrate and educate women and health care providers on shared viewing of EHR information from a woman’s perspective.

To address the larger challenges of software compatibility and capability:

- Liaise with creators of the EHR software systems to modify the maternity EHR to enable improved access to and reliability with current GP systems. These co-creators include NEHTA and business representatives, MMH Information Technology, Medicare Locals representatives, Indigenous and consumer advocates.

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