

P.A.M. App

(Programmed **A**ssistant; willing to help with **M**aternity care)

1. An App program is now being developed which consists of the flow-patterned series of the Questions which any pregnant woman is normally asked by a midwife or doctor at the time of her Initial Pregnancy Assessment .
2. In time it is intended to make this App available, cost-free in any language, on any mobile phone, tablet or computer for use by any pregnant woman worldwide who is happy to use this facility.
3. On completion, the answers to be printed out either on a full page sheet (or on large sticky labels - 8 per A4 sheet) these to become part of her hand held record.
4. Then to be used by the woman and her midwife at the initial booking appointment to save time for both of them, and to provide more time for individual maternity care.
5. Corrections to the printout to be added in pen at any time by either the mother or her midwife or doctor.
6. The answers only to be stored, with personal back-up, on that woman's own mobile phone. No other electronic connections whatsoever at any time.
7. This PAM App will allow women to take as long as they wish to answer questions; and to do this at a time and place that is most inconvenient to them.
8. This is however not considered to be of sufficient advantage for women to be willing to pay for such a facility.
9. But its greatest advantage is a) its potential to reduce the workload of midwives, b) the potential to ask precise questions down to a level of detail not possible in any paper record c) the potential, in time, to encourage the standardisation of the questions and all the answer options.
10. Although the PAM program should be cost-free, at the end of the program there could be an opportunity for those who wish to pay for some associated Apps which could then provide, for no more that 59p (\$1), supplementary Apps which could then, in time, provide a great deal more material which is of relevance to any expectant mother, while feeding funds back, using the free PAM App as a "loss leader"

Further Detail

The aim is to create a universally applicable “App” which will, in time, allow any expectant mother (eventually worldwide in any language or culture) who wishes to use her own mobile phone (iPhone, Android, Windows-Nokia) or “tablet” (iPad etc) or computer (PC, Apple or Linux) to enter her Initial Pregnancy Assessment (“booking”) information “whenever”, “wherever” and “at whatever speed” is convenient for her. [For a similar initiative regarding general medicine click [here](#), and [here](#)]

It is then intended to make it possible to print out the result, on paper or sticky labels, either by a local printer (e.g. any copy shop), or by sending an encrypted version by e-mail to a single U.K. (or local by country) address, the result being in a format which:

- a) encourages the expectant mother to discuss with her midwife or doctor of any areas which need clarification (every question to include the answer option. “Wish to discuss this later”)
- b) can then, with hand-written corrections/additions if required, become an integral part of her hand-held record,
- c) the output being tailored to fit each local or national paper record (e.g. the Scottish Pregnancy Record, the Welsh Pregnancy Record, the Birmingham Perinatal Institute Pregnancy Notes, the St.Thomas or Lewisham or Brighton or Leicester Pregnancy Records etc, local versions; or even, in time, New Zealand Pregnancy Record, the Latin American Center for Perinatology Perinatal Clinical Record etc)

Additional potential advantages

1. It is hoped that, in time, this will encourage the international standardisation of a series of logically and chronologically arranged, flow-patterned questions and all allowable answers in a way which promotes bedrock standardisation. This is essential if we are to avoid duplicate electronic data entry (remembering that “Every EXTRA keystroke costs” See Bewley et al BMJ 2010; 341:c5637 and Fawdry et al Obstetrics & Gynecology 2011 Feb; 117(2 part 1):405-406).
2. Such standardisation, while clearly required, is highly unlikely to succeed through the traditional method of setting up independent expert advisory committees, however widely they consult, due to the lack of consensus so far as to the criteria used for the limited incompatible datasets such expert groups propose, other than in the final analysis, the personal opinions of those experts who happen to be members of each advisory committee.
3. This will, at last, allow us to start the process of documenting internationally standardised “Trigger Data Items” as a basis for “Risk/Prognosis Assessments” and “Action Suggestions” This, in turn will help us to avoid human errors [DoctorsError.pdf](#) in our maternity care.

Although much of computing seems magic, its cost effectiveness depends on the number of customers; and the market for maternity software will always remain very small compared with computer games, word-processing systems etc., especially when divided between the many currently competing maternity IT companies.

4. If, with appropriate backers, the PAM App does manage to facilitate international standards for a gradually increasing number of questions and allowable answer options, it should become cost effective down to a level of detailed questioning, regarding for example family/genetic histories and their implications for probable prognosis and possible treatment options, that is impossible with the present fragmentary IT market.
5. In particular, it provides a possible route to encouraging the standardisation of data regarding the electronic summary data for each separate Pregnancy both at the Initial Assessment, but using the same standardised set of “Past Obstetric History” data for electronic transmission not only from hospital to primary care at the end of any pregnancy; but also from a primary care system to the hospital at the start of any gynaecological episode, including infertility referrals.
6. In time, primary health centres would be encouraged (by the women themselves) to print out, in the same sequence as the PAM App questions, any relevant information held in their computer system - thus allowing each expectant mother, at the start of her pregnancy to know and to correct any mistakes in the primary health centre electronic record.
7. In time, not only will it facilitate a standard set of data from hospital to and from primary health centres; but each woman would, after each pregnancy, in time might insist on the right to ask for an electronic version of the birth event summary for each of her pregnancies, to be given to her, to store confidentially on her own equipment.

Rival Initiatives

Although there are many competing maternity computing systems (>20 incompatible maternity programs in the U.K.); and although there are many Pregnancy related Apps already available, the PAM App suggestion seems so far to be unusual, if not unique; and, if endorsed by such bodies as the RCOG, the RCM, and FIGO it has a real chance of success.

This is especially so in view of its close relationship to the “Electronic Encyclopaedia of Perinatal Data” (EPPD) (www.eepd.info) and the associated talk forum “EPPDtalk” (www.eepd.org.uk) since associated with every question there will be an opportunity for users both to see what exists on the EPPD; and to feed back via EPPDtalk any comments, suggestions, clarifications etc. (See below)

If the concept succeeds, this, by its cross-over association with the EPPD & EPPDtalk, would allow Assistance / Action suggestions and even draft referral letters down to a level of detail that would be impractical and unaffordable with currently available, commercially secret, competitive commercial systems.

Legal Liability & Confidentiality

This proposal has the advantage that at every stage there will be reminders that the legal liability remains with the relationship between expectant mother and her doctor or midwife and the PAM only exists to facilitate communication not to replace normal professional responsibilities.

Confidentiality should also not be a problem for this proposal since it is not intended that the answers given will exist anywhere except on paper or electronically only on the expectant mother’s own phone or tablet, with her own personal back-up arrangements.

Funding

Up until now all the preliminary work on this project has been done by the voluntary efforts (both IT work and financial) of a small group of benefactors.

In future funding could either be:

- A) By providing the App cost-free but with a request for those who can afford it to make a donation to the further development of the concept. (But things that are totally free are rarely appreciated)
- B) By charging, as with many existing Apps, the minimum (as set by Apple) of 59p (\$1) per App.
- C) By a charitable organisation such as the Bill Gates foundation.
- D) By becoming linked to a set of related Apps which use the “universal” PAM App as a free “loss leader”, for additional Apps which then have to be paid for and which then feed funding back to the further development of the free PAM App. (I will be discussing this concept with Harlow Press who do the Child Health Record)

Or a combination of these; that may change with time, depending on the progress of the project.

Further Comments on Patient Acceptability and Workload Implications.

If it saves only half an hour of midwifery time per expectant mother willing to use the system, and even if only used by 5% of women, the PAM App initiative has the potential to reduce the midwifery workload by more than one midwife per district. Past evidence suggests that in time well over 50% of expectant mothers may be willing to use this kind of facility. (See papers Simple Direct Input by Mothers at Booking (http://www.fawdry.info/eepd/b_inp/12_pam/MotherInput.pdf), Electronic Questionnaires at Booking (http://www.fawdry.info/eepd/b_inp/12_pam/ElectronicQs.pdf) especially i) if a significant number of women realise that using the PAM App will free midwives to spend more time helping with difficult pregnancy problems, or being with women in labour, or ii) if a busy working mother has several children and likes the idea of getting most of her booking data recorded at a time, place and pace that is convenient to her.

For more detailed comments and a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis see www.fawdry.info/eepd/b_inp/12_pam/PAMApp.pdf

Conclusion

With appropriate support, this initiative has, 20 years after the initial introduction of electronic maternity records, the potential to tame IT to reduce the ever increasing burden of work and stress faced by midwives and obstetricians; and contribute significantly to the worldwide goal of “Safer Motherhood”

Rupert Fawdry, FRCS (ED), FRCOG. Saturday, 19 March 2011

Worldwide internet based help essential

If PAM App is to achieve its full potential, the flow pattern and the wording of every question and every answers (especially when in other languages) will require feedback from all interested parties. This can only be achieved through an internet forum with each question (and each pick-list of for example Family History items) separately discussed. To get the best wording more than 400 questions will need individual debate e.g. Q. Have you had fertility problems? As. “No”/“Yes (free text)”; If “Yes” Q. “Have you had any fertility investigations?” As. “No”/“Yes (free text)” and many Pick Lists e.g. PMH set of questions, Pregnancy Complications, Family/Genetic History, Medications taken recently,- what to include in such lists and what to leave under “Other (free text), need to be separately discussed)

Work towards this essential foundation is massive but is well under way.

See www.eepd.info to see how you can help. (*Discussion forum for 1,000 Mat questions available shortly*)

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