

“In the world of informatics, authority is impotent. Bring as much pressure as you like to bear on a flawed software system, and what you get will be a worse-flawed system. (That is one reason why we insist that computing students learn to program. Many of them will go into jobs where they never write a line of code; but anyone working in our industry needs a feeling for the intractable nature of the industry’s basic resource, and only personal experience can create that awareness.)” GR Sampson. Whistleblowing for Health. Last updated 20 March 2010 <http://www.grsampson.net/CWhist4Health.html> [Accessed on 29 September 2010]

B08. Difficult areas in designing perinatal software; with some proposed solutions.

(Work still in progress, Help needed)

With hyperlinks to the documentation of existing paper or electronic datasets or discussion documents relevant to each topic;
together with several draft flow-patterned question and answer solutions

by

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**Any Comments, Criticisms, Corrections
or Suggestions for Improvement very welcome**

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Introduction

Paper is so flexible that it is easy to be unaware of just how difficult it is to design IT software which consists of single set of cost-effective, flow-patterned electronic questions and answers.

Ever since the Korner Report and recommendations of 1985, the following areas have become more and more chaotic, year after year after year.

The problems mainly stem from the chasm between the “world of medicine” and the “world of IT” and the mutual incomprehension between the two as illustrated by a presentation I give in 2004 at the request of Susan Bewley, Clinical Director, Maternity Department, Guy’s and St.Thomas’ Hospitals (www.fawdry.info/eeepd/00_ima/poster/07_Chasm.pdf)

Even after 30 years of medical computing far too many decision-makers on the medical and management side were, and remain, convinced that computers are magic, while the majority of those employed on the IT side repeatedly assume that as long as they take intermittent advice from a few representatives of the various official maternity care organisations, they will be told the definitive “true” answers to all of the problem areas set out below. The best alternative analogy is that an attempt were, and continue, to be made by full time printers, to create a novel of the stature of “War and Peace”, using the only the decisions made on a monthly basis by an advisory committee of, usually unpaid, representatives of several educational bodies with little or no experience writing great literature.

As quickly becomes apparent to anyone who writes computer programs such an approach is naive in the extreme, requiring expensive software development; and frequently the

result is that the front-line midwife has to answer the same question e.g. “Method of Birth” two or more times using different answer options.

The size of the problem may be seen from comparing the difficulties identified in this article with the comment made to me, by one of the consultant obstetricians involved in extremely expensive purchasing decision, that “Maternity computing is easy. You just have to enter the Birth Weight and things like that” and “Oh I didn’t like the IT company because it had that question which I personally don’t like, and didn’t have the other one that I liked?”

As if buying a multi-million pound car on the basis of the comfort of the seats, or the colour of the bodywork, and taking no interest at all in any of the technical specifications!

For a more rational approach to purchasing maternal and neonatal computer systems see www.fawdry.info/eeepd/d_spc/Principles.pdf

Basic Principles

- A. Entering electronic data takes time. Re-entering duplicate data takes even more time. Every time duplicate data is re-recorded the resources available for direct patient care are reduced.
- B. Pick list which are too long slow down data entry and are more prone to human error. As shown in the “Method of Birth” below it is more accurate and efficient to break such lists into shorter sections by asking a preliminary question such as “Route of Birth”
- C. As far as possible there must not be any overlap between identical electronic data items when used in different contexts e.g. The Neonatal Care set of Questions and Answers must not include the baby’s “Method of Birth” or “Birth Weight” since these data items are part of the dataset

for Every Baby. The subsections required in any serious attempt to create Perinatal computer system can be seen both in the EEPD Volume 4. (Resource Document) and this volume.

- D. Complex questions are separated into their component parts e.g. Pain relief options involving the Anaesthetic department need to be separate from those only involving the midwives. Too often traditional coding has involved separate problems in one code e.g. Premature Twins
- E. Flow-patterned. When does each question need to be asked. Time of Start of First Stage only if “Was there a labour?” has had the answer “Yes”
- F. Openly Accessible on the web for worldwide viewing and feed-back
- G. as a result, with the Potential for International Standardisation.

This being the essential foundation for further progress in maternity computing
- H. Complex enough to be useful in all maternity and neonatal electronic records.
- I. yet the Minimum which facilitates a functioning Individual Patient-care Orientated perinatal computer system
- J. suggests full lists of All Allowable Answer Options,
- K. with “Other (free text)” always allowing free text option whenever appropriate.
- L. with “Unknown (free text)” always available if appropriate.

Not one of these essential principles have so far been addressed in any of the expensive NHS-IT Perinatal Data initiatives so far. See <http://fawdry.info/index.php?&id=46>

I. The three main areas of confusion resulting from the 1985 “Korner Maternity” initiative

A. “The Place of Birth”

The following hyperlink jumps to documentation of several current incompatible paper-based requirements; and then provides suggestions for a flow-patterned set of questions which minimises the work of data entry while meeting the needs of all documented stakeholders.

www.fawdry.info/eepd/01_ess/b_eprs/B08/Place.pdf

B. “Pain Relief and Anaesthesia in Labour and Birth”

The National Maternity Services Dataset Initiative gives the following as a single “Data Item” under the heading “Pain Relief?” [Global Number: 17205230]

*TENS,
Inhalational Analgesia,
Narcotics,
Perineal Infiltration
Regional - spinal
Regional - epidural
Regional - combined spinal/epidural
Regional - pudendal
Regional - spinal catheter
Paracetamol
Water
Complementary Therapies
Other
None
Not known*

This is clearly not a single question, since a woman in labour could easily have had several of the above during her labour and birth. Thus, if management really needs this information to be recorded electronically, most of the above will need separate “Yes/No/Don’t Know” answers.

Of even more importance is the fact that, to allow for urgent future inter-connectivity, there

needs to be a clear separation between those items which require the help of the Anaesthetic department such as “Regional - spinal”, “Regional - epidural”, “Regional - combined spinal/epidural”, “Regional - pudendal”, “Regional - spinal catheter” (and also a General Anaesthetic for a Caesarean) and those which only involve the midwife such as ‘Water’. In future, if there is not to be duplication of data entry, then information that a woman has had regional or general anaesthesia, for labour and/or for birth will need to be entered onto an Anaesthetic Computer system with automatic electronic transfer to the maternity system.

It also seems likely that, except possibly for a 1 in n audit sample, there is absolutely no need to waste midwifery time on answering electronically the question “Was Water used for Pain Relief?” which will always entail entering “Yes/No/Don’t Know” for every single birth in Britain. The paper record of such information is almost always quite sufficient.

There are other several other complex areas (e.g. How a computer system can be designed to cope with Multiple Births by Caesarean but only one Caesarean for the Mother; or, how to enter the correct data when there is an Epidural for first twin and a General Anaesthetic for the second) These are further discussed in the following paper: www.fawdry.info/eepd/01_ess/b_eprs/B08/PainRelief.pdf

C. “Method of Birth”

The current commonest paper-based answer options for the question “Method of Birth?” , based on the 1985 “Korner” report are:

0. *Spontaneous Vertex*
1. *Spontaneous, Other cephalic*
2. *Low Forceps, not Breech*
3. *Other Forceps, not Breech*
4. *Ventouse*
5. *Breech*
6. *Breech Extraction*
7. *Elective Caesarean Section*
8. *Other (non-elective) Caesarean Section*

and most current U.K. computer systems have been forced to use these options; but they confuse “Urgency” with “Method”, and do not, for example, allow an answer to an RCOG annual report question as to how many Breeches were delivered by Caesarean. These paper-listed answer options were, from the very start, clearly flawed.

The current (March 2010) National Maternity Services Dataset proposals for allowable answers to this question show absolutely no understanding of how computers work and, as a result are an even worse mess, being as follows:

- Spontaneous Vertex*
- Spontaneous Other Cephalic*
- Vacuum Extraction*
- Vacuum Extraction after Failed Forceps*
- Forceps after failed vacuum*
- Forceps (low cavity)*
- Forceps (mid cavity or with rotation)*
- Spontaneous Breech*
- Assisted Breech*
- Breech Extraction*
- Elective caesarean*
- Emergency caesarean*
- Emergency caesarean after failed instrumental delivery*
- Other (including destructive)*

The following hyperlink allows access to a previously created essay which, besides the above, also documents as many as possible other paper-based “Method of Birth” answer options. Draft suggestions are then made for a universal flow-patterned, logical set of questions and allowable answers which both minimise the work of data entry, and meet the documented requirements of as many different stakeholders as possible: www.fawdry.info/eepd/01_ess/b_eprs/B08/Method.pdf

II. Electronic Lists.

All hand-held pregnancy records have, for example, a list of possible past medical problems under the heading “Past Medical History”. Paper-based variations in such lists are not a problem; but computer programs are

rigid and anything more than minimal local software variations are therefore impossibly expensive.

If maternity computer systems are to be cost effective, and also if they are to realise their potential for making “Action Suggestions” based on “Trigger Data Items”, there will need to be an internet-based discussion as to what items must should usually be included in such lists and in what order, and what needs to be left out, or recorded electronically under “Other (Free Text)” In the longer term either the original data e.g. Actual Blood Pressure and levels of Proteinuria, or there must be clearly documented definitions for example what criteria are agreed for defining “fulminating pre-eclampsia” in a previous pregnancy.

Midwife stress increases whenever the selection and the sequence of such items differ (vividly illustrated by overhearing the explosive comments of a midwife trying to enter data from the “West Midland Pregnancy Notes” into a “Euroking” maternity system, each with different “lists”)

More important such disparities, by increasing the cost of software development, increase the risk of human error, leading to the failure for example, to use “Trigger Data” to provide appropriate “Action Suggestions”

Such is the complexity of medicine that universal standardisation will always be impossible. But such lists must always end with “Other (Free Text)”, and “Unknown (Free Text)” allowing old software versions to use these options while newer software provides extra pre-set options

Our need to move towards as much standardisation as possible will only be met if:

- a) If as many currently used, or proposed, such lists, either from standard datasets, or from any widely used hand-held record (e.g. “The Scottish Pregnancy Record”), or from hospital proformas,

(such as those used for Caesareans) are made openly available on the internet.

- b) Once the variations are known, it will then usually be possible, even in the short term, to provide a reasonably logical draft standard list.
- c) In the longer term it will be essential to use a Wiki 2.0 approach.

<http://www.youtube.com/watch?v=-dnL00TdmLY&feature=fvw>

About Twenty Such Pick Lists

The National Maternity Services Dataset Proposals in September 2010 [www.ic.nhs.uk/services/datasets/document-downloads/maternity] include thirteen such lists which usefully provide a starting point for this section. Additional selective lists maybe found, in other datasets, in pregnancy casenotes, and in maternity computer systems and in time they also will need consideration.

Examples of such “pick lists”, (without any evidence of any debate or even any consultation), currently included in the NMSD are:

1. Past Medical History
2. Past Obstetric History
3. Family History
4. Adult Disability
5. Anomaly Scan Results
6. Infectious Diseases
7. Problems in this Pregnancy
8. Critical Incidents - Discharge Letter Items
9. Critical Incidents - Hospital PAS Items
10. Critical Incidents - Anaesthetic Items
11. Neonatal Birth Problems
12. Neonatal Treatment
13. Neonatal Problems

Additional crucial lists include:

Inspection of the Newborn
Examination of the Newborn

Foundation work done so far regarding the content of these lists, including any relevant Wiki 2.0 initiatives when they

exist, may be seen via: www.fawdry.info/eepd/b_inp/07_lists/aLists.pdf

DVT / PE prophylaxis criteria

Another typical list is the current “black and white” list of those patients who need DVT prophylaxis. At present this being a simple list. Surely in future, the EEPD or some similar source should gradually provide for clinicians and ultimately clinical computer systems much more precise information not just that those with a BMI above 35 need prophylaxis but about probable risk with a BMI of 30 or 40 etc

III. Potentially Controversial Cut-Off Points

a) Miscarriage or Labour

In maternity computer systems it is much better to have a separation between pregnancies ending before, or after, 20 weeks since the flow pattern of questions before and after that gestation are different e.g Before 20 weeks there is probably no value in assessing the time and date of the onset of established labour whereas after 20 weeks it probably is worthwhile even if the outcome is technically a miscarriage rather than a birth.

The computer can then be used at a later stage to automatically calculate the viability or otherwise of the fetus, and can also easily accept any future changes in legal definitions.

b) Early and Late PPH.

Traditionally an Early Post Partum Haemorrhage is one that occurs within the first ??? hours after a birth; while a Late Post Partum Haemorrhage is one that occurs later. To answer this question using that traditional definition will require extra questions for the midwife to answer regarding every birth both at the time of the mother leaving the labour ward, and again at the time of hospital discharge. Significantly less data entry work is required if it is assumed that all post partum bleeding that

occurs before the birth information is entered onto the computer is regarded as “Early”; and all post partum haemorrhage between then and the discharge from hospital is regarded as “Late” The number of PPHs “misclassified” under this option is likely to be insignificant, and therefore certainly not worth the complex extra programming and time consuming data entry that would be involved in being pedantic.

c) At time of Hospital Discharge; or at the Final Outcome.

Entering Data concerning, for example the Examination of the Hips, if electronically recorded at the time of hospital discharge does not involve any extra work since it comes under category “A2. Was Paper to Paper; now Paper to Electronic.” If however the final decision is required in electronic form this will, until reliable “paperless” systems finally arrive (in 5-20 years?), require the information to be entered on a paper record and only later transferred to a computer.

IV. Towards the best flow-pattern of questions.

This is absolutely crucial to the future progress of perinatal computing, especially if there are ever to be cost effective standardised exchanges of electronic data between different systems (www.fawdry.info/eepd/15_snb.php to be links with other software systems. All good maternity systems incorporate such flow-patterning. Yet disastrously for essential future progress, such flow-patterning is almost universally for all practical uses, commercially confidential () Indeed as far as the creators of the EEPD are aware, the EEPD is the only open source maternity or neonatal dataset which, by being totally open-source and being accessible via the internet, makes any attempt to address this problem.

Moving towards the highest quality perinatal computer software must include clear documentation of the flow pattern of questions

which will minimise the data entry workload while maximising the value of the data collected. Much of such flow patterning is uncontroversial. “Was there a Labour?”, comes before “What was the time and date of the start of the first stage?”, “Was there a Second Stage?” must come before “What was the Date; and the Time of the Start of the Second Stage?”

Some areas however need special attention for example:

“Past Medical History - Fertility Problems?”

While documenting fertility problems on paper is relatively easy, as in www.fawdry.info/eepd/01_ess/b_eprs/B09/FertPaper.pdf, ??? the computer version is much more complex,

and, to avoid confusion, the questions must always be asked in the right order:

- Fertility Problem ever (inc. Recurrent Miscarriage)?
- Fertility Investigations ever?
- Fertility Treatment ever?
 - Previous Tubal Surgery?
 - Other Fertility Treatment ever? (free text)
 - This Pregnancy a result of ‘Other’ Treatment?
 - Method of Fertility Treatment used for this pregnancy?
- If previous Fertility Treatment, then Pick list (or Free text) for Name and Address of Fertility Centre
- Cervical Suture already in place?

“Cessation of local maternity care at or before 20 weeks”

Any “Logical Priority” set of standardised questions and answers must consist of most of those documented in the EEPD Volume 5. Logical Priority as follows:

www.fawdry.info/eepd/01_ess/b_eprs/B08/NoLocalBirth.pdf

Compare NMSD’s single relevant question (out of their 450 questions):

S. NON-REGISTRABLE OUTCOMES
S1. Diagnosis Date (Miscarriage)?

Perineal Damage

Again, once questions elsewhere have established that a vaginal birth has taken place - or even been attempted and failed, electronic questions about perineal damage must be asked in the most workload-efficient order as follows:

- Episiotomy performed?
- Any (further) Perineal Damage?
- Other or Further Birth Canal or Labial Damage?
 - Vaginal Tear (free text)?
 - Labial Tear (free text)?
 - Cervical Tear (free text)?
- Any Vaginal / Perineal /Cervical / Labial Suturing?
- What Suture Material used for Perineum?

The above sets out the Questions only.

For the additional essential details concerning “When each Question is asked” and “What are the Allowable Answer options?”, and what alternative wording exists has been documented see in Section R. “Retrospective of the Pregnancy”, Subsection R1. “End of Pregnancy without a 20 week or more pregnancy documented on this computer system” both in detail in the EEPD Volumes 4. Resource Document and in outline in the EEPD Volume 5. Logical Priority Q & As.

Compare the much greater data entry workload and lack of any flow-patterning of the NMSD proposals

- Y1. Traumatic Lesion of Genital Tract?
- Y2. Labial tear?
- Y3. Vaginal wall tear?
- Y4. Perineal tear?
- Y5. Episiotomy?
- Y6. Cervical tear?
- Y7. Urethral tear?
- Y8. Clitoral tear?
- Y9. Indication for Episiotomy?

Using the date of the LMP in a computer system.

This is even more difficult since the calculation we can potentially make using a paper record is so much easier than it comes as a surprise how difficult it is if we try to reproduce our thought process with a careful set of flow-

patterned questions. Indeed it is so complex that, to reduce the workload it is tempting to use the dating scan as the gold standard and only ask flow-patterned questions when a dating scan is not available.

The following hyperlink will in time lead to a document setting out the flow pattern of questions using these two alternative, together with an estimate of the national data entry workload of each.

The Indications for a Caesarean

For management purposes a single “Reason for Caesarean” may be acceptable; but in the care of individual mothers, decisions are frequently made for more than one reason.

Where this is so, it is important that the maternal discharge summary should include all such factors

Additionally any study of, for example, all malpresentations with this as a factor in the decision will, in a sometimes arbitrary manner, miss all those mothers where this indication is second, or third, in a complex situation. For example a Caesarean may need to be done in the following situation: a) augmentation after a failure to go into labour following preterm rupture of the membranes, b) prematurity c) malpresentation and d) multiple fetuses. If failure to progress into labour is recorded as “the main reason” significant numbers of relevant patients will be missed in a study of Caesareans Malpresentation”. The only reliable way to avoid this problem is to provide an opportunity to record all the factors in the decision, and then for the computer to give an opportunity later, for management and statistical purposes, to select the sometimes arbitrary “main cause”

Conclusion

Many other examples of encouraging the best sequence of questions may be seen in the EEPD Volume IV. The Resource Document ()

and in Volume IV. Logical Priority Draft Proposals. ()

Purchasers of maternal and neonatal systems must be aware that different systems currently on the market, do not all use the best sequence of questions. All sellers of a maternal or neonatal computer systems must, in future be obliged to provide computer literate clinicians with a full paper printout, on paper, of all the questions, and all the allowable answers, for the whole system before any contracts are signed.

See also www.fawdry.info/eepd/c_spc/Principles.pdf

V. “Past Obstetric History”

At first in the EEPD data regarding the “Past Obstetric History” was documented as part of the Initial Booking History. It later became clear that it should have a separate section, since not only were the same sequence of questions just as important in taking the history at the time of a gynaecology admission of a miscarriage; but even more importantly, the final summary for electronic transmission to the primary health centre of the outcome of the present pregnancy involves documenting the answers to the same set of questions.

Resource Document. Past Obstetric History www.fawdry.info/eepd/ ???

Draft SINBAD for POH www.fawdry.info/eepd/ ???

VI. Types of Obstetric History

There are three types of Past Obstetric History which, for clarity, must, in all computer systems be clearly distinguished:

- A. Details of each previous pregnancy in turn.
Requiring a repeat of the same set of questions for each previous pregnancy
- B. Specific problems in any previous pregnancy
e.g. Any previous pregnancy with Eclampsia?
- C. Total numbers of different types of pregnancy.
e.g. How many previous Caesareans?

The crucial difference between these three distinct types of POH has, not unexpectedly, been totally ignored by the National Maternity Services Dataset. www.fawdry.info/eepd/a_ini/nmsd/

VII. Post-Natal Complex Mixture of “Chips & Paper”

(The most complex project I have ever attempted!)

Trying at the same time to meet the documentation, information and communication requirements of hospital midwives, and obstetricians, and anaesthetists, and paediatricians, and general practitioners, and community midwives and health visitors, has proved to be the most complex problem area in all of perinatal computing.

This is because post-natal care of mother and baby(ies) frequently takes place in different departments and different locations. Babies, in special care for example, may have to be separated from their mothers. The mother may be in the maternity ward, or in the intensive care unit, or even in a different hospital. Multiple birth babies may need to be cared for in different places. Much Post-natal care will, for many years ahead, be given in places, such as the mother's home or at an alternative address, each place being without reliable constant access to a computer and printer.

Trying to go “paperless” has been thought by some to be the ideal solution but is, currently and for at least 5-10 years in the future, totally impractical.

An ideal, workload-aware, solution will involve a complex hybrid of proformas, casenotes, sticky labels and computer printouts. Only when this is accepted will be move towards meeting the requirements of all those concerned with the Post Natal care of mothers

and babies. Only in this way will be move reliably towards reducing post-natal communication problems.

The degree of complexity may best be illustrated by the following partial overview

www.fawdry.info/eepd/b_eprs/B08_Overview.pdf

The topic has been dealt with in detail in the following paper: www.fawdry.info/eepd/b_eprs/B08/Postnatal.pdf

VIII. Monitoring Status

Time and again there is a premature assumption that the “Electronic Record” can be used to monitor the status. For example the “National Maternity Services Dataset (Mar 2010) includes “Offer Status (Mother Rubella Antibodies)?”: “Not offered”, “Not applicable”, “Offered and considering”, “Offered and declined”, “Offered and accepted”

In a similar way there is an unjustifiable assumption that the “Place for Birth” can be monitored on line at all times rather than just at booking and when in the labour ward.

See www.fawdry.info/eepd/01_ess/b_eprs/B08/Place.pdf for the only practical flow pattern of questions with the standard FOUR PLACES maternity computer system

Such Electronic Monitoring of Status will only become practical when (or rather if ever) it becomes possible for computers and printers to be always available at every antenatal consultation; and there is considered to be a significant cost benefit for the extra workload involved in entering the required electronic data. Monitoring “status” on a hand-held paper record is easy. Monitoring it electronically, is, given the current unreliability of mobile computers, utterly impractical, and, despite the advent of the iPhone and similar gadgets, will remain so for many years.

IX. Miscellaneous Items

A. Late Termination of Pregnancy.

Since some terminations of pregnancy occur late enough to require the entry of all the data concerning a normal birth e.g. "Was there a Labour?", "What was the time and date of the start of established labour?", "Was there any perineal damage?" etc. etc., the computer system must allow for such an eventuality.

Rather than asking regarding every single birth in Britain "Was this a termination of Pregnancy?" it would seem much more acceptable and efficient to include answer option "Termination of Pregnancy" after the question "Outcome of Pregnancy?" for all pregnancies over 20 weeks (see above) the answer options then being:

1. Live birth
2. Antepartum stillbirth
3. Intrapartum stillbirth
4. Indeterminate stillbirth
5. Termination of Pregnancy
8. Other (free text)
9. Unknown (free text)

with the legal grounds and, when appropriate, the actual anomaly that led to the Termination automatically being asked if the pregnancy outcome was a termination.

B. Urgency of a Caesarean

The RCOG categories are "1. Immediate: (Within 20 mins?)", "2. Urgent: (Within 30 mins?)", "3. Scheduled: (Within 2 hrs?)" and "4. Planned = Elective".

To these standard options must be added "6. Peri-mortem (Caesarean at the time of a Maternal Death)" and in taking past obstetric histories; "9. Unknown (Free Text)"

Since it is also important to see how often a "Planned Caesarean" has to be done early (for example because of human error regarding the gestation, or because it was booked far too close to the due date) there should, for the sake of auditing always be the option "5. Planned done as an emergency."

Leading to the question (Default underlined)

Urgency of this Caesarean?

WHEN

Only if "Method of Birth" = "Caesarean"

1. Immediate (Crash Section): (Within 20 mins?),
2. Urgent: (Within 30 mins?)
3. Scheduled: (Within 2 hrs?)
4. Planned (= Elective)
5. Planned done as an emergency
6. Peri-mortem
(Caesarean at the time of a Maternal Death)
8. Other (free text)
9. Unknown (free Text)

Although the term "Crash Section" is currently 'out of fashion' it is, in real life, far more likely to galvanise everyone involved into the urgency required. To often in my experience as a labour ward consultant locum in 30 hospitals over the past 8 years I have, for example, waited while a senior midwife carefully checks that every labouring mother has 'one to one' care, while a fetal brain is, by the second, getting more and more damaged from an abruptio placentae emergency.

'Immediate Caesarean' does not in practice ring such powerful mental alarm bells as 'Crash'

and although more worrying to the expectant mother if, by chance, she overhears that risk seems worth taking for the sake of the baby.

X. Some Danger Areas

A. Staff not on the Computer database

When any activity is performed by someone whose name is not on the computer (i.e. Locums, Part-Timers, New Staff) then these are the very people who, unfortunately are most prone to errors. It is therefore essential that whenever this occurs there is a facility in every medical computer system to document electronically the actual name, status and GMC, or equivalent, number onto the system. As a long term locum it amazes me that such a facility is almost invariably missing, so that surgery performed by me nearly always has to be entered under a false alternative name.

The correct sequence of questions should always be something like the following

www.fawdry.info/eepd/05_log/staff.php ???

B. Lack of General Computer Access for Locums (including Internet)

As a short term consult locum I have worked in over 25 different hospitals. Only one of them (Caithness Hospital in Wick) has provided me with computer access. Yet a locum, more than most, needs urgent access to local or national guidelines. It is so impractical for a busy consultant in a short staffed busy out-patient or ante-natal clinic not to have easy access to laboratory reports or scans that most nurses or midwives, at risk for their jobs but using common sense, have allowed me to use their confidential password to access such reports while they are busy elsewhere.

C. Lack of Access by locums to urgent local e-mails or to Local Guidelines

D. Venturing out of your own department

Greater hazards to good patient care occur when doctors need to venture to places outside their own departments. For example, in a major teaching hospital, I went to see a recently Caesarean patient in the general intensive care department. Having reviewed her care, I used someone else's computer access to make a few observations. Later that same day the patient's own consultant ventured into this alien territory. The record being "paperless" and shifts having changed, she had no idea what I had observed and decided. It had disappeared into a black hole under someone else's name. Given my distinctive, but still readable, writing that would have been highly unlikely with a paper record!

Conclusion

An internet based Electronic Encyclopaedia, and the creation of a whole series of Wiki 2 forums are, and will remain, essential to the future development of maternity and neonatal computer systems.

Until this is fully recognised, millions of pounds of tax-payers money, world-wide, will, through the dangerous combination of gullible healthcare managers, software-illiterate senior doctors, and persuasive IT salesmen, continue to be wasted on fantasy/dangerous computer systems.

Costly litigation will inevitably follow when repeated initiatives fail to turn such fantasies into anything remotely practical or easily predictable dangers continue to be ignored.

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