QIPP: Standardised maternity data collection and analysis to inform service planning and reduce inequalities

Summary

The West Midlands Perinatal Episode Electronic Record (PEER) is an innovative method of deriving standardised information on essential indicators from all maternities. The data collection allows benchmarking of performance, and results in improved quality of service and the reduction of inequalities. It is also cost effective, as it reduces the hidden costs of data collection by midwives and other clinical staff.

Introduction: The Need

Core maternity data for secondary analysis is an essential component of the planning and delivery of maternity care, improving safety and reducing inequalities. There are several drivers for the collection of quality data – PbR, Vital Signs, CNST, DSCN, reduction of inequalities, improving outcome. Good intelligence is also required to inform new commissioning arrangements after the reconfiguration of the NHS.

Problems with fulfilling this need

Many maternity units currently have either no, or only immature maternity systems, and the latter are not designed for easy link up to provide standardised information which is suitable for secondary analysis. Where comprehensive systems are in place, they use widely differing datasets, whose standardisation will require substantial investment.

An additional problem is that in maternity care, **most of the relevant information concerning demographics and social factors originate from, and is collected in, the community** – i.e. at a distance from hospital based information systems.

As a result, many units rely on data which is either poor quality and incomplete, or expensive to collect through midwives, increasing their workload and taking them away from their clinical work. The high proportion of time which midwives spend on data recording is well known and has recently again been highlighted in a report from the Kings Fund [1]. In addition, units rely upon hospital episode statistics to report vital signs. However HES is not quality assured and is often inaccurate. The recent national press release by the NHS Information Centre demonstrates the risk associated with reliance on HES data: it claimed that in 2009, Walsall had an 'early booking' rate (first contact before 12 weeks) of 8.3% - the lowest in the country. In fact, the actual figure for Walsall, based on case by case, precise data from WMPI, was 87% - above the regional average.

Solution

Our solution builds on the fact that the standardised West Midlands maternity notes provide a unique opportunity to gather high quality information which is already collected as part of routine care. In addition, our NHS-net based data collection system (PEER – Perinatal Episode Electronic Record) has been successfully mainstreamed with the support of the SHA's regional Investing for Health programme. The PEER database includes to date already over 100,000 maternities, and represents the largest standardised validated maternity data collection in England.

PEER has so far been reliant on trained data clerks resident in each provider unit, who extract the information required from the hand held notes. Following recent completion of successful pilots, the Perinatal Institute is now moving to real time **data collection using digital pen technology**.

General Benefits

Over the relatively short period since its inception in April 2009, the regional PEER data collection has already demonstrated significant local and regional improvements in several key indicators, thereby improving the quality of the service.

- Automated, web based accessible reports (KPI's, demographics, denominators)
- Information for mothers, increasing choice
- Public health - identification of needs, ability to undertake health equity audits
- Analysis of result of prevention programmes to reduce perinatal morbidity and mortality
- Identifying areas of high impact for upstream intervention

[1] Staffing in Maternity Units. The Kings Fund, London 2011. http://www.kingsfund.org.uk/publications/maternity_unit_staff.html

Data for Commissioning

- PEER provides KPIs, the ability to benchmark and identify outliers as a standardised uniform data collection, capacity planning, stratifying resource to need.
- Can collect data according to 2010 NICE guidance on 'Pregnancy and complex social factors', which states that commissioners should assess
  - the number of women presenting for antenatal care with complex social factors;
  - the number of women within each complex social factor grouping;
  - the total number of antenatal appointments attended and community contacts; and
  - non-attendance at appointments.
- Supports future commissioning requirements, due 2012/13, including development of unbundled HRG's for the 3 antenatal care pathways (low risk , high risk and specialist care) determined by medical and social risk factors - all collectible via PEER.
- Can provide the robust data needed for PbR for midwifery services provided in the community, as it:
  - permits collection of community midwifery activity accurately on a case by case basis;
  - supports move to a community cost/volume model by some units in the Region;
  - collects medical and social factors, as required for the 501 and 560 tariffs:

Outpatients attendance tariffs

(from: Maternity Services and PbR, DH 2010/11 Gateway Ref 14312)

TFC	First Outpatient (single professional)	First Outpatient (multi-professional)	Follow Up (single professional)	Follow Up - (multi-professional)
501	£138	£184	£65	£88
560	£138	£184	£65	£88

Cost-benefit Analysis

The benefits of data, although extensive, are difficult to quantify but a recognised and essential component of the service. Our analysis compares the conventional and the PEER method of data collection, based on experience in the West Midlands (further details in the Tables on page 3).

	1. Conventional data collection - usually reliant on clinical staff or coding clerk; - often not standardised; - poor quality and/or summary data only	2. PEER data collection: - utilises standardised, hand held maternity notes - secure data flow on NHS servers; - good quality data which is used for everyday care	
	Cost	**Cost**	**Net Saving**
Per maternity	34	8	**£ 26**
Per 1000 maternities	34,000	8,000	**£ 26,000**
WM - 72,000 births:	2,436,000	576 ,000	**£ 1,860,000**

This analysis shows that PEER saves 76%, i.e. over three quarters of the estimated cost of conventional data collection, and can result in **an overall WM saving of close to £ 2 Million per year.** The reduced time used by care providers on data collection will allow them to spend more time on clinical work. The calculation was done on core need, without an attempt to estimate the benefit of the many other advantages of PEER data, such as the ability to provide a comprehensive picture of maternity demographics and inequalities.

Summary QIPP points for PEER data collection:

Q- quality of maternity services demonstrably improved – see last quarterly report [2]

I - innovative use of web based data collection using standardised maternity records

P - increased productivity saving admin work for midwives, enabling increased clinical capacity

P - prevention through reduced risk of adverse outcome, by identifying inequalities and service needs

[2] PEER Report – Q2, 2010/11 – Perinatal Institute http://www.pi.nhs.uk/pnm/maternitydata/Q2_2010-11_Perinatal_KPI_report.pdf

Table 1. Data through conventional data collection

	Requirement	Scope	Unit Cost per 3000 maternities	West Midlands cost 72,000 maternities
1	Data on Vital Signs & KPIs - booking details - smoking status	all mothers / all pregnancies	10 min per case x 3000 = 500hs/yr @ 30 per hour [1] = £15,000	360,000
2	Data for KPIs - continuity of carer - fetal growth restriction - breastfeeding initiation	all mothers / all pregnancies	10 min per case x 3000 = 500hs/yr @ 30 per hour [1] = £15,000	360,000
3	Specialist midwives - teenage pregnancy co-ordinators - diabetes (national dataset) - baby friendly audit	all teenagers all diabetics all mothers	0.05 WTE on data from casenotes x3 = 0.3 WTE@ Bd 7 [2] = £ 13,500	324,000
4	Unit audits for clinicians - case note completion - obesity rates - induction rates - caesarean sections	monthly audits community, wards, delivery suite	0.2 WTE @ Band 6 £ 8,000	192,000
5	Audits for commissioning - complex social factors - community midwifery activity	all case note	30 min per case x 3000 = 1500hs/yr @ 30 per hour [1] = £45,000 plus additional clinical coding time	1,080,000
6	Additionally data – demographics etc: Ethnicity, social factors, folic acid, complications in pregnancy, prematurity rate etc	Currently not usually collected	unspecified additional cost (not included in this analysis)	
7	Data analysis & IT support		@ approx. £ 5000 / unit / year	120,000
	Total cost - West Midlands			**£ 2,436,000**
	Cost per unit with 3000 births			**£ 101,500**
	Cost per birth			**£ 34**

Notes: [1] Band 6 MW salary = 42,000 (Point 29) [2] Band 7 MW salary = 45,000 (Point 32)

Table 2: Data through PEER and central analysis

Requirement	Scope	Unit Cost per 3000 maternities	West Midlands cost 72,000 maternities
West Midlands data / National Maternity dataset	all mothers / all pregnancies/ all neonates	Digital pens and maternity notes - pen costs staggered over 5ys £ 5,000 - software licenses – annual £ 8,000 - add-on for digitising notes £ 2,000 Total per per year £ 15,000	360,000
		Central support – helpdesk, IT	96,000
		Project management, training, data analysis and reporting	120,000
Total cost – West Midlands			**£ 576,000**
Cost per unit with 3000 births			**£ 24,000**
Cost per birth			**£ 8**