Efficient evidence reviews

Scottish Government Review of Maternity and Neonatal Services
Improving Interprofessional working

Dr Anna Gavine, Dr Steve MacGillivray, Prof Susan Crowther and Prof Mary Renfrew
University of Dundee

on behalf of the Evidence and Data Sub-group

Summary and Recommendations

The aim of this rapid review was to distil core principles and practice recommendations that can lead to improved interprofessional working and better communication between staff providing care for and working with women and their families in maternity and neonatal services, with the ultimate goal of improving the quality of care, including continuity of care. We aimed to identify any relevant systematic reviews and/or guidelines. This involved a database search and a search of multiple websites/sources of information for records related to neonatal care.

The evidence:

- Key documents related to identifying issues in interprofessional working: Report of the Morecombe Bay Investigation, MBRRACE-UK reports, Scottish Maternity Survey and the POPPY study,
- Database Search identified a total of 476 records. No systematic reviews meeting the inclusion criteria were identified. Due to lack of systematic reviews, primary studies were included instead and 25 records for 21 separate studies were identified. These primary studies could be broadly divided into interventions/actions to improve interprofessional working (n=8) and studies exploring barriers and facilitators to interprofessional working (n=13),
- Cochrane Effective Practice and Organisation of Care Group (2 reviews on interprofessional working in general identified, however only one included was specific to maternity and neonatal care, which was retrieved and included)
- BAPM (0 guidelines),
- RCOG (1 guidelines, 1 joint toolkit in collaboration with RCM),
- RCM (1 position statement, 1 joint toolkit in collaboration with RCOG),
- RCN (0 guidelines).

From the evidence detailed above it is possible to make some high level recommendations that rest upon the data found. It is therefore possible to distil information on core principles for interprofessional working that may lead to the best outcomes for all infants and their families. It should be noted that here are more detailed and nuanced recommendations provided specifically by some studies/guidance which are detailed within the review.
Core Principles:

- Maternity and neonatal care is provided in settings that range from women’s own homes to acute care, and women, babies and families may receive care from staff working in primary care, public health, social care, voluntary sector, community units, and hospitals. Good communication between all staff and sectors is essential for women, babies and families to receive the full scope of care that they need.
- All staff respect each other and acknowledge and understand differences in their roles.
- All staff strive to provide continuity of care for all women, babies and families in terms of advice and information given (as far as appropriate).
- Communication should be open and honest, and staff will need to be supported by senior colleagues to enable appropriate challenge and disclosure.
- Opportunities are available for staff to develop positive relationships both in formal training settings and also informally (e.g. shared recreational facilities).

Organisation of care:

- The organizational structure is supportive of interprofessional working and recognises the need for simple and transparent processes for referral and back referral and for escalation and de-escalation, and to enable staff to be able to consult together and share records of women and babies.
- Staff should ensure that all relevant record details for women and babies are updated and available to other healthcare professionals, particularly when the women is receiving care from staff from different specialities or from a different sector (i.e. primary care, public health, acute care).

Care providers:

- Interprofessional education should be included in undergraduate and postgraduate training.
- Multidisciplinary teams who provide emergency care should undertake their training together.

1.0 Background and Aim

Both the Report of the Morecambe Bay Investigation and the Confidential Enquiry into Maternal Death (Kirkup, 2015, Knight et al., 2014, Knight et al., 2015) identify the critical importance of good communication and working relationships, particularly between different staff groups, in the provision of seamless, appropriate and timely care.

The aim of this review is to explore how interprofessional working in maternity and neonatal care could be improved to result in more effective working relationships and communication between all staff working with women and their families. This will include:

- Identification of issues in professional culture (i.e. interprofessional working) in maternity and neonatal care settings in Scotland and also identify any examples of good practice.
• Examination of the evidence to distil core principles and practice recommendations that can lead to effective working relationships and communication, which in turn will provide the woman and her family with continuity of care. Continuity of care is defined as “care that is not fragmented, where there is good communication within the system and consistent policies” (Green et al., 2000, p.187). This could include strategies such as education, shared leadership, co-location of services or shared IT systems.

This review will focus on the key values and philosophies that underpin such working and will consider interprofessional working across all interfaces that a woman, her baby, and her family may encounter on the childbearing journey, including:

• Interface between midwifery and obstetric care
• Interface between care provided by midwifery or obstetric units and primary care services (e.g. health visitor, GPs)
• Interface between maternity care provision, public health and other specialist services (e.g. alcohol and drug problem services, smoking cessation service, domestic abuse service, child protection services, medical specialists, breastfeeding services)
• Transitions in neonatal care
• Interface between NHS based services and non-NHS services such as early years social workers, those working in child protection, housing services, and those working within the criminal justice system (e.g. police and prison officers).

2.0 Methods
First, an exploration of the key issues in interprofessional working was conducted through examination of key documents reviewing failings in NHS maternity and neonatal services (Draper et al., 2015, Health Improvement Scotland, 2012, Kirkup, 2015, Knight et al., 2014, Knight et al., 2015), the NHS staff survey, and key studies which sought women and their families’ views and experiences of maternity care were also examined to identify how they found aspects of care related to interdisciplinary working and professional culture (Cheyne et al., 2015, POPPY Steering Group, 2009).

A rapid review was then undertaken to identify evidence on strategies for improving interprofessional working (i.e. through improved communication strategies, developing positive working relationships, workforce training and development) and identify any examples of good practice, which lead to continuity of care. The protocol for the review is detailed in table 1.

Table 1. Interprofessional Working Review Protocol.

<table>
<thead>
<tr>
<th>Review question</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review question 1</td>
<td>What are the key issues in interprofessional working identified in:</td>
</tr>
<tr>
<td></td>
<td>a. Key documents reviewing failings in maternity and neonatal services?</td>
</tr>
<tr>
<td></td>
<td>b. Staff surveys?</td>
</tr>
<tr>
<td></td>
<td>c. Studies looking at parents’ views and experiences of maternity and neonatal services?</td>
</tr>
<tr>
<td>Review question 2</td>
<td>What strategies are effective in improving interprofessional working</td>
</tr>
</tbody>
</table>

Additional Comments
• Key documents which will be used to answer question one are: the Report of the Morecambe Bay Investigation (Kirkup, 2015), the Confidential Enquiry into Maternal Death (Knight et al., 2014, Knight et al., 2015), Scottish Perinatal and Infant Mortality and Morbidity Report 2010.
| **Objectives** | To first identify issues in professional culture (i.e. interprofessional working) in maternity and neonatal care settings and also identify examples of good practice. Then examine the evidence to distil core principles and practice recommendations for developing a supportive and positive interprofessional culture that fosters good working relationships, communication and continuity of care between staff working with women and their families. |
| **Language** | English |
| **Study design** | • Systematic reviews of RCTs, cluster-controlled trials, quasi-randomised controlled trials, observational studies.  
• Systematic reviews of qualitative studies with mothers and their families, and/or healthcare professionals. |
| **Status** | Papers published in academic journals and reports published by professional governing bodies (i.e. RCOG, RCM, RCPH, BAPM)  
Governing bodies out with the field of health may be included if there is a lack of information from the health field. |
| **Population** | Healthcare professionals working in maternity or neonatal care settings, or those working in other settings (e.g. primary care, specialist services, social services) which interface with maternity or neonatal care.  
• Staff working in other settings may include GPs, health visitors, public health practitioners, medical specialists, mental health workers, social workers, housing officers, local organisation workers and health care assistants.  
• If evidence specific to maternity and neonatal care settings cannot be identified, then evidence | (Health Improvement Scotland, 2012), the NHS Staff Scotland Survey, the Scottish Maternity Survey (Cheyne et al., 2015) and the Poppy Study (Staniszewska et al. 2012).  
• A rapid review detailed in boxes below will be conducted to answer question two. |
### Intervention

<table>
<thead>
<tr>
<th>Any workplace strategy/action/intervention that aims to improve communication between staff, (particularly at the interface of different disciplines), develop positive working relationships or create a supportive and learning culture.</th>
</tr>
</thead>
<tbody>
<tr>
<td>This could include strategies such as: interprofessional education; multidisciplinary ‘skills and drills’ development/maintenance; or methods for sharing information about women and babies.</td>
</tr>
</tbody>
</table>

### Comparator

<table>
<thead>
<tr>
<th>No workplace intervention</th>
</tr>
</thead>
</table>

### Outcomes

| Continuity of care |
| Staff communication |
| Staff views and experiences on barriers/facilitators |
| Families’ views and experiences |
| Staff wellbeing |
| Reduction of over-medicalised care |
| Serious incidents (e.g. maternal or neonatal morbidity or mortality), in which professional issues may have been a factor |
| Over-medicalised care will be examined through rates of caesarean section, instrumental deliveries and any other forms of care that is unnecessary as a routine (e.g. episiotomy) |

### Other criteria for inclusion/exclusion of studies

| Date limit 2000 |
| Exclude conference abstracts |
| Filter applied to limit to systematic reviews |

### Review Strategies

| Following databases will be searched: MEDLINE, HMIC, CINAHL. The websites of RCOG, RCM and RCN, the NIHR SDO and the Cochrane EPOC group will all be searched. In addition subject experts were asked to recommend any additional studies not identified in the search. |
| Data on all included reviews will be extracted into evidence tables. |
| If possible, a meta-analytical approach will be used to give an overall summary effect |

### Critical Appraisal

| The NICE methodology checklist for systematic reviews and meta-analyses will be used to assess study quality for systematic reviews. |
3.0 Findings
The results from this review are presented in two sections. First the findings related to current issues in interprofessional working will be described and then the results of the rapid evidence search will be detailed.

3.1. Key issues in interprofessional working
First the findings related to interprofessional working from the key documents on failings in maternity and neonatal services were reviewed (Draper et al., 2015, Knight et al., 2014, Knight et al., 2015). It had then been planned that the results from the NHS Scotland Survey specific to interprofessional working in maternity and neonatal care would be discussed, however, from the survey data it was not possible to separate any results that were specific to staff working in maternity and neonatal services. Finally, relevant findings from the POPPY study (Staniszewska et al., 2012) and the Scottish Maternity Survey (Cheyne et al., 2015) will be detailed.

3.1.1 Failings in Maternity and Neonatal Services Related to Interprofessional Working
The Morecombe Bay Investigation was conducted in response to a number of serious incidents, including deaths of mothers and babies at Furness General Hospital (Kirkup, 2015). This independent investigation was conducted from 2004 to 2013 by expert advisors in midwifery, obstetrics, paediatrics, nursing, management, governance and ethics. These advisors reviewed 15,280 documents and interviewed 188 individuals. Whilst the review did identify some issues in clinical competence of the staff, in particular failure to recognise warning signs, one of the biggest failings contributing to the failings of the maternity department to provide safe and effective care was the failure of interprofessional working. Specifically, the investigation identified the following difficulties in interprofessional working:

- The report states that maternity care requires close multidisciplinary working, particularly between midwives, obstetricians and paediatricians. Extremely poor working relationships between different groups of staff were identified, however. The working environment was described as having a “them and us” culture.
- There was evidence of failures in communication between groups of staff in terms of handovers and clinical records (extremely poor and written retrospectively).
- Multidisciplinary team (MDT) meetings were difficult to arrange, infrequent and poorly attended. This would have facilitated discussion of clinical policies and examination of poor clinical outcomes and this failing hampered development of the unit.
- The approach to midwifery care in the unit became “influenced by a small number of dominant midwives whose over-zealous pursuit of the natural childbirth approach led at a times to inappropriate and unsafe care” (p.13). This resulted in inappropriate risk assessment and lack of discussion with obstetric staff in terms of escalation of care. In addition, middle grade obstetric staff were discouraged from intervening even when problems developed. Whilst the obstetricians working in the unit observed this, they did not challenge it effectively.
- Women gave birth to infants who were at high risk of needing neonatal intensive care services and should have given birth at a level III centre. Paediatricians often adopted ‘wait and see’ approach which resulted in emergency transfers for sick babies.
- There was an inadequate response to serious incidents. Investigations were insufficient in detail, often carried out by the same midwife, did not involve other members of the MDT and failed to identify the key issues. Moreover, when an MDT approach was taken it tended to result in blame-shifting behaviours and there was a lack of dissemination or learning of lessons by staff.
Kirkup (2015) then notes that this combination of problems led to twenty cases of major failures in care associated with three maternal deaths, ten stillbirths and six neonatal deaths. The report concluded that different management would have reasonably expected to prevent one maternal death, five stillbirths and six neonatal deaths in Furness General Hospital during the period that the review investigated (1 January 2004 – 30 June 2013).

The Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK (MBRRACE-UK) programme of work involves continuing the national Confidential Enquiry into Maternal Deaths (CEMD) and the perinatal confidential enquiry. To date the MBRRACE-UK project has produced two confidential enquiries into maternal deaths (Knight et al., 2014) and a confidential enquiry into term, singleton, normally-formed, antepartum stillbirths (Draper et al., 2015). Specific to interprofessional working the following issues and recommendations were identified and detailed in table 3.1.

Table 3.1 Issues and recommendations for interprofessional working identified by the MBRRACE-UK Reports.

<table>
<thead>
<tr>
<th>Report</th>
<th>Situation</th>
<th>Issue</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knight et al. (2014)</td>
<td>Maternal sepsis</td>
<td>Lack of communication by junior obstetric trainees to their consultant in the case of maternal sepsis. Lack of awareness by some staff on severity of maternal sepsis.</td>
<td>Responsible consultant obstetrician shows clear leadership and is responsible for liaising with anaesthetists, midwives, infectious diseases physicians/microbiologists and all other professionals involved in the women’s care.</td>
</tr>
<tr>
<td>Knight et al. (2014)</td>
<td>Maternal sepsis</td>
<td>Lack of serious incident reviews or root cause analysis (RCA) of all women who died of sepsis and even fewer for women who recovered from sepsis</td>
<td>High quality MDT serious incident review/RCA should be carried out on all maternal deaths and all women with severe sepsis by the unit where the woman was cared for or if it occurred in the community, the institution responsible for community services</td>
</tr>
<tr>
<td>Knight et al. (2014)</td>
<td>Maternal blood loss</td>
<td>Lack of communication of concerns regarding maternal blood loss and not escalating to a senior when the women deteriorated clinically.</td>
<td>Concerns about a woman with blood loss should be escalated to a senior doctor or midwife in the case of deterioration. Structured communication tools (e.g. SBAR) may be useful and effective in such situations.</td>
</tr>
<tr>
<td>Knight et al. (2014)</td>
<td>Maternal blood loss</td>
<td>Lack of leadership when exacerbated by continuity of care at a senior level due to shift changes. Lack of co-ordination of care and follow-up after MDT reviews.</td>
<td>Named senior doctor in charge of ongoing care</td>
</tr>
<tr>
<td><strong>Communication</strong></td>
<td><strong>Within/between teams, leadership and fixation error</strong></td>
<td><strong>Good teamwork and should be arranged in all units</strong></td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------------------------</td>
<td>------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Knight et al. (2014)</strong></td>
<td>Mothers with other medical conditions</td>
<td>No specific issue identified but instances of lack of specialist medical review were identified.</td>
<td>Pregnant women with pre-existing medical conditions require a high standard of joined-up care. A single identified professional should be responsible for co-ordinating care.</td>
</tr>
<tr>
<td><strong>Knight et al. (2015)</strong></td>
<td>Maternal mental health</td>
<td>Lack of communication on past psychiatric history between primary care and maternity services.</td>
<td>GPs should inform maternity services of any past psychiatric history and maternity services should ensure that the GP is aware of the pregnancy and make enquires about previous mental health problems. Mental health services should be informed of a pregnancy in any woman who is known to them.</td>
</tr>
<tr>
<td><strong>Knight et al. (2015)</strong></td>
<td>Maternal mental health</td>
<td>Difficulties in communication and fragmented care between private and NHS services. NHS carers either did not know of or were able to access details of private care received by the woman.</td>
<td>Good communication and effective communication of risk is necessary by all health care professionals regardless of their setting.</td>
</tr>
<tr>
<td><strong>Knight et al. (2015)</strong></td>
<td>Maternal mental health</td>
<td>Lack of continuity and care by multiple teams. Lack of an individual who took overall responsibility which led to fragmentation of care and lack of awareness by teams of others involved in the woman’s care.</td>
<td>Women should receive continuity of care. In the case that multiple mental health teams are involved, a clearly identified individual should co-ordinate care. Perinatal mental health networks should be developed and provide local services with clear pathways of care (including addiction services) to avoid fragmentation of care. Liaison, crisis and home treatment teams need training in the recognition of perinatal mental illness.</td>
</tr>
<tr>
<td><strong>Knight et al. (2015)</strong></td>
<td>Maternal venous thrombo-embolism</td>
<td>Miscommunication or lack of communication at the secondary-primary care interface leading to inadequate clinical management</td>
<td>Pregnant and postpartum women presenting to the Emergency Department with medical problems should be discussed with a member of the maternity medical team.</td>
</tr>
<tr>
<td><strong>Knight et al. (2015)</strong></td>
<td>Maternal malignancy</td>
<td>Instance of lack of multidisciplinary care planning</td>
<td>Early MDT discussion about care for any woman with complex medical problems. Named</td>
</tr>
<tr>
<td>Knight et al. (2015)</td>
<td>Homicide and domestic abuse</td>
<td>Communication between staff not optimal even if woman had disclosed domestic abuse.</td>
<td>All staff should be aware of the pathway of care for woman experiencing domestic abuse and escalate to senior staff if necessary.</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Knight et al. (2015)</td>
<td>Women who died between 6 weeks and a year after pregnancy</td>
<td>Default for women with multi-morbidities was to discharge to the routine model of postnatal care.</td>
<td>Documented, individualised postnatal care plan should be developed with the woman. Ideally this should be in the antenatal period or as soon as possible after. This should include relevant factors from the antenatal, intrapartum and immediate postnatal period; details of the healthcare professionals involved in her care; and plans for the postnatal period. A coordinating healthcare professional should be identified for each woman. Due to changing care needs, this person is likely to change.</td>
</tr>
<tr>
<td>Knight et al. (2015)</td>
<td>Women who died between 6 weeks and a year after pregnancy</td>
<td>Transfer of care between wards can lead to the women being neglected and overlooked with no individual taking overall responsibility for her care. Unwell women that are not ill enough for level III care but have multiple problems are most impacted by this.</td>
<td>Senior decision-making doctors need to assess the woman and discuss with senior colleagues of the MDT decide on the best place for on-going care, including the means and timing of inter- or intra-hospital transfer.</td>
</tr>
<tr>
<td>Knight et al. (2015)</td>
<td>Women who died between 6 weeks and a year after pregnancy</td>
<td>Lack of processes to easily allow consultant obstetricians (i.e. needing to go through a triage system) refer directly to appropriate consultants in other services or hospitals for post-natal led to some women slipping through the net. Similarly there were reports of midwives having difficulties in accessing general practice information and difficulties experienced by GPs in getting timely specialist advice for postnatal women.</td>
<td>Policy makers and service planners should ensure there are no barriers that prevent clinicians directly seeking the advice/involvement of experts in other areas, especially for women with multiple morbidities on discharge from postnatal care. Email dialogue between GPs and appropriate consultants should be straightforward, rapid and universally available.</td>
</tr>
</tbody>
</table>
| Knight et al. (2015) | Women who died between 6 weeks and a year after pregnancy | Poor information sharing and communication a common theme in women who died between 6 weeks and a year after pregnancy. Structural changes in the way clinicians work have made communication more difficult and disrupt continuity of care. Handover between shifts is a problematic area and can lead to discontinuity of responsibility and leadership. Increasing sub-specialisation has resulted in fragmentation of medical specialities which also causes communication problems. This can all lead to a working in silos mentality. | Healthcare professionals must be aware of the 4 conditions that must be fulfilled for good communication:  
- Understand the information being communicated and its significance within the context of the situation.  
- How the information needs to be communicated to generate the required impact.  
- Why the information is being communicated (i.e. what mental model do they want to generate in the recipient).  
- Who should and must receive the information so that the intended actions take place. Structured communications tools (e.g. SBAR) should be used wherever possible. |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Knight et al. (2015)</td>
<td>Women who died between 6 weeks and a year after pregnancy</td>
<td>In many cases a single individual did not take overall responsibility of care for women requiring to attend separate psychiatric, medical and social services appointments. Specialists did not ensure that the other co-morbidities were being adequately treated and ongoing monitoring was in place. Lack of routine follow-up contributes to this.</td>
<td>Women with complex needs require targeted follow-up to ensure their care is being coordinated appropriately by a single individual who takes a leadership role. This role could be fulfilled by midwives, obstetricians, health visitors or GPs depending upon each woman’s needs.</td>
</tr>
<tr>
<td>Draper et al. (2015)</td>
<td>Care after stillbirth</td>
<td>GPs, midwives and health visitors not consistently informed of stillbirths.</td>
<td>A designated person should ensure all relevant health professionals (i.e. GP, community midwife, health visitor) are informed in the case of a stillbirth.</td>
</tr>
<tr>
<td>Draper et al. (2015)</td>
<td>Communication issues in cases of stillbirths</td>
<td>Issues in record keeping included contradictory information, lack of information on test results and other procedures, inaccurate recording of risk factors and lack of detail on care provision or appointments. This led to inconsistent and incomplete information sharing between health professionals which</td>
<td>All interactions with mothers and other family members should be recorded. Results for any investigation should be documented so that members of the MDT are aware of all aspects of care provision.</td>
</tr>
</tbody>
</table>
In summary, the MBRRACE-UK reports (Draper et al., 2015, Knight et al., 2014, Knight et al., 2015) highlight issues in lack of leadership for women with multiple care needs, poor information sharing (i.e. through medical records) leading to women receiving inconsistent information and staff being unaware of who is and should be involved in care and communication difficulties at the interface of different services (between primary and secondary care and also between different secondary care services).

3.1.2 Women and their families’ views and experiences of interprofessional working

The Scottish Maternity survey (Cheyne et al., 2015) examines women’s experiences of antenatal, intrapartum and postnatal care. It includes quantitative tick box items and also free text spaces which enable women to include additional information. In terms of issues related to interprofessional working, the following themes were identified:

- In the case where women did not receive continuity of midwifery care in the antenatal period, some women reported that there was a lack of information on continuity (i.e. inconsistent information provided, having to repeat information, missing notes and noticing that things had not been written down).
- Women also experienced lack of consistency in consultant-led care and this manifested in having to repeat medical history and being given conflicting advice.
- Some women described positive experiences of multi-professional team working, whereby they attended a combined clinic and were able to see the different professionals involved in their care (e.g. consultant obstetrician, midwife, diabetes specialist).
- Almost half of women received some inconsistent advice from health professionals about feeding.
- Some women reported experiencing a lack of continuity of care in the postnatal period (both in the hospital and in the community) in terms of poor communication and information sharing and inconsistent advice.

From the data reported in this survey (Cheyne et al., 2015), we can see women found receiving inconsistent information and advice problematic, and were frustrated by having to repeat information about their medical history. Similar results were identified by the POPPY study, which included interviews with 55 parents with children who received care in a neonatal unit in England and Scotland (POPPY Steering Group, 2009). Specific to interprofessional working, parents reported receiving inconsistent information from different healthcare workers either before birth or whilst their baby was receiving neonatal care. This was an aspect of care that parents found distressing, particularly when they were following the advice of one health professional, only to be criticised by another (e.g. use of dummies, exposure to daylight). This therefore highlights a need for good record keeping including detailing what information a woman has been given and by whom. Co-ordination of care could potentially be improved for women with certain conditions by delivery in a MDT clinic. For instance, Cheyne et al. (2015) also reported that women who required additional care from other healthcare professionals had a more positive experience when this was delivered in a team setting.
3.2 Findings from Rapid Review of Interprofessional Working

3.2.1 Overview of search and nature of the evidence identified

This section provides a description of the records identified by each database or source and the selection process. The study selection process is illustrated in figure 3.1.

3.2.1.1 Database Search

The Medline and HMIC search was run as a combined search using the Ovid platform (see Appendix 1 for search terms) and identified 62 records with a systematic review filter applied. These records were screened on the basis of title and abstract and no systematic reviews that met the inclusion criteria were identified. However, two non-systematic literature reviews on interprofessional working in maternity and neonatal settings were identified (Smith et al., 2013; Sosa, 2008). Due to the apparent lack of systematic reviews in this area, these reviews were included and key themes were distilled (see section 3.2.2); however, caution is urged when considering these findings.

The search in CINAHL was run using the EBSCO platform and because of this lack of systematic reviews the systematic review filter was left off to also include primary studies. This resulted in a total of 432 records, which were screened on the basis of title and abstract. After de-duplication of the MEDLINE, HMIC and CINAHL results 476 studies remained. Again, no systematic reviews were identified, however, three non-systematic literature reviews on interprofessional working in maternity and neonatal settings were identified (Downe et al., 2010; Heatley and Kruske, 2011; Iliadi, 2010) and again will be included in terms of being used to distil core principles (section 3.2.2.1). The CINAHL search also identified 25 records for 21 primary studies which either explored barriers/facilitators to interprofessional working or strategies to improve interprofessional working. Details of these studies and key themes are detailed in section 3.2.2.2.

3.2.1.2 Cochrane Effective Practice and Organisation of Care Group’s reviews

The Cochrane Effective Practice and Organisation of Care Group’s reviews were also examined for any reviews that met the inclusion criteria by screening all title and abstracts of published reviews and protocols (n= 205). No reviews meeting the inclusion criteria were identified, however, two reviews on interprofessional working generally were identified (Reeves et al., 2011; Zwarenstein et al., 2009) and the included studies of each were examined to identify if any had been conducted in maternity or neonatal settings. Only one included study was conducted in a maternity setting (Nielsen et al., 2007). This was a cluster RCT of an interprofessional intervention which aimed to reduce adverse outcomes and improve processes of care in labour and delivery units and will be discussed with the other primary studies in section 3.2.2.2. The majority of the other studies were conducted in medical settings, with a smaller number in public health settings, nursing homes, emergency departments, mental health, primary care and surgery.

3.2.1.3 Guidelines from Professional Organisations (RCOG, RCM, RCN, BAPM)

The websites of the RCOG, RCM, RCN and BAPM were examined for any guidance on interprofessional working. First, the titles of all the RCOG’s ‘Good Practice’ guidelines (n=14), ‘Best Practice Papers’ (n=2) and other guidelines and reports were screened (n=33). Only one guideline appeared relevant to this review, specifically ‘Good Practice No.12: Improving Patient Handover’ (RCOG, 2010) which recommends the SBAR tool. The publications of the RCM website were screened and the only document that appeared relevant to interprofessional working was the RCOG/RCM joint statement on undermining and bullying in the workplace (RCOG and RCM, 2015). As this is a brief position statement, it will not be considered further, however, it does highlight the need for improving working relationships in maternity settings. The publications of the RCN website were searched using the terms “interprofessional”, “collaborative” and “multidisciplinary”. Seven
records were identified but none were focused on maternity or neonatal care or provided guidance and/or strategies relevant to the review. Finally, the titles of all BAPM guidelines were screened but no documents relating to interprofessional working were identified.
3.2.1.4 NIHR Service Delivery and Organisation Projects

The NIHR Service Delivery and Organisation (SDO) portfolio of projects was searched using the terms “interprofessional”, “multidisciplinary” and “collaborative” and restricted to completed projects. This search identified 58 records, however, none were related to maternity or neonatal care and tended to focus on specific groups of patients (e.g. community-based services for older adults, diabetes services).

3.2.1.5 Expert Consultation

Experts in the field of interprofessional working, were asked to identify any additional highly relevant, key studies that the review did retrieve. One additional systematic review on interprofessional education (Ireland et al., 2008) was identified and will be discussed in section 3.2.2.1. In addition, a number of primary studies were suggested by experts. Specifically, two studies which examined interprofessional learning in pre-qualifying nursing, midwifery, social work and physiotherapy students were identified (Pollard and Miers, 2008, Pollard et al., 2012) and three records on two distinct studies which examined interprofessional working in remote and rural settings in the UK (Caldow et al., 2011, Harris et al., 2011, Tucker et al., 2005). These will all be discussed in section 3.2.2.2 with the other primary studies. Two pieces of grey literature were identified. Specifically, an evaluation of the implementation of the Scottish Woman Held Maternity Record (SCWHMR) in Scotland (Craig et al., 2010) and the RCOG/RCM undermining toolkit (RCOG and RCM, 2014) and are both discussed in section 3.2.2.3.

3.2.2 Narrative Summary

3.2.2.1 Literature Reviews

First, on a more conceptual level, Ilidai (2010) reviewed the literature to attempt to explore what is meant by collaboration and collaborative care. Collaboration is described as “interprofessional process of communication and decision-making that enables the individual knowledge and skills of health professionals to synergistically influence the provided care” (p.130). Whereas, collaborative care is described as initiatives or activities that aim to strengthen links between different providers working together in a partnership characterised by common goals, a recognition of and respect for individual strengths and differences, equitable and effective decision-making, a focus on the patient and clear and regular communication” (p.130). Ilidai then argues that interprofessional education (IPE), which involves members of two or more professional groups training together, can help improve collaborative care.

Similarly, Heatley and Kruske (2011) aimed to identify key characteristics of interprofessional collaboration in the context of maternity care in Australia. Interestingly, the authors reported that there were inconsistencies in the literature on the concept collaboration, in terms of how it is defined and what it is encompassed of. The authors propose the following extended definition of collaboration in a maternity setting:

“Interprofessional collaboration is a reflexive and dynamic process that involves maternity care professionals from multiple professions working together with the woman to produce quality outcomes. Responsibility and accountability is shared in terms of appropriate level of involvement of a professional with the woman over the entire perinatal period. All involved trust, respect, understand and foster an approach to
practice which utilises knowledge and expertise from the various professions as required by the woman” (p.56)

This definition proposed by Heatley and Kruske (2011) takes concepts from the broader health literature and has attempted to apply it to maternity care. The authors argue that it could be used as a working definition that could assist in progressing collaboration in maternity services as there is currently a lack of models for effective collaborative working in maternity services.

Downe et al. (2010) review current accounts of collaborative maternity care in the UK, US and Australia and also note the dearth of literature in the field of interprofessional working in maternity services. However, they do provide some useful points to consider when considering how to develop interprofessional working. First, they include the National Health Service Leadership Qualities Framework on Collaborative Working within review. This framework operationalises different levels of collaborative working (NHS, 2015):

- **Level 0**: Goes it alone.
  - Fails to involve others in bringing about integrated healthcare
  - Does not share information with other stakeholders
- **Level 1**: Appreciates others views
  - Expresses positive expectations of internal and external stakeholders
  - Acknowledges and respects others’ diverse perspectives
- **Level 2**: Works for shared understanding
  - Shares information with partners when appropriate.
  - Summarises progress, taking account of differing viewpoints, so as to clarify understanding and to establish common ground.
  - Surfaces conflict and supports resolution of this conflict.
- **Level 3**: Forges partnerships for the long term
  - Works with other stakeholders where conflict impedes progress to create the conditions for successful partnership working in the longer term.
  - Is informed on the current priorities of partners, and responds appropriately to changes in their status or circumstances
  - Ensures that the strategy for health improvement is developed in a cohesive and ‘joined up’ manner.

Whilst this framework is not specific to maternity care, it could be applied in a maternity setting. In addition from their review of the literature, Downe et al. (2010) also propose the following possible characteristics of effective collaboration:

- **Contextual components**
  - Clear and respected boundaries
  - Effective systems for conflict resolution
  - Opportunities for participation and for building cohesion
  - Acceptance of open and honest communication
  - Mutual trust
  - Acknowledgement of interdependence
  - Acceptance of shared responsibilities
- **Influencing factors**
  - Supportive organizational structure
  - Availability of resources (including time)
Together, these reviews (Downe et al., 2010, Heatley and Kruske, 2011, Iliadi, 2010) do provide some guidance on what core principles should be adhered to in the context of improving interprofessional working in maternity services. Adherence to the principles would allow better sharing information which in turn may improve situations in which escalation to a higher level of care is needed, or indeed, de-escalation to a lower level of care. On a more practical level, Ireland et al. (2008) aimed to examine the evidence on IPE for post-qualifying health care professionals involved in maternity care in the UK. A total of 17 records were identified by the search, however, only four studies were graded by the authors as being high quality and limited information on the included studies is included in the review. Ireland et al. concluded that IPE generally has a positive impact on team working, sharing and collaboration and therefore care provision. However, the authors caution that those participating in IPE may be a self-selecting group and are therefore already more likely to be engaged in positive interprofessional working. Therefore, more efforts may need to be made to engage with those who find interprofessional working more difficult. In addition, Ireland et al. recommend that outcomes for IPE must be set and also acknowledge the need for appropriate selection of facilitators.

Smith et al. (2013) examined multi-disciplinary team working in the context of obstetric emergency simulation training programmes. The authors report on several studies that aim to assess the effective of such programmes, including: a randomised controlled trial in UK hospitals which was identified in the database search and will be discussed in section 3.2.2.2 (the SaFE study; Crofts et al., 2007); observational studies in UK hospitals which reported that the introduction of such training was associated with a decrease in Hypoxic Ischaemic Encephalopathy (Draycott et al., 2006) and shoulder dystocia (Draycott et al., 2008). In addition Smith et al. (2013) also report on the active components of training programmes, which specific to interprofessional working include:

- Early verbal declaration of the emergency
- Using closed-loop communication (task clearly and loudly delegated, accepted, executed and completion acknowledged)
- Used a structured form of communication

Similarly, Sosa (2008) who examined collaborative care in the context of providing intensive care for pregnant women with traumatic injuries, highlighted the need for effective communication when transferring women and recommends use of the Situation-Background-Assessment-Recommendation (SBAR) tool, which is now widely used in clinical settings. Sosa argues standardises communication and allows nurses’ communication techniques (which are more narrative in nature) and physicians’ communication techniques (which are more concise in nature) to be brought closer together.

3.2.2.2 Primary Studies
The 25 primary studies could broadly be divided into studies which evaluated some form of intervention or strategy to improve interprofessional working (n=10; see table 3.2 for details of study characteristics and results) or studies which aimed to explore barriers and facilitators to interprofessional working (n=15; see table 3.3 for details of study characteristics and results).

A range of strategies were used to try and improve interprofessional working and these were coded as: interprofessional education (IPE); hospital-based strategy to improve communication with primary care providers; collaborative model of midwifery group practice. IPE was the most
commonly utilised strategy by six separate studies. (Aune and Olufsen, 2014, Crofts et al., 2007, Fransen et al., 2012, Gordon et al., 2013, Nielsen et al., 2007, Pollard and Miers, 2008, Pollard et al., 2012, Régo et al., 2011, Siassakos et al., 2011a, Siassakos et al., 2011b, van de Ven et al., 2010). For three studies, this took the form of emergency simulation training (Crofts et al., 2007, Fransen et al., 2012, Régo et al., 2011, Siassakos et al., 2011a, Siassakos et al., 2011b, van de Ven et al., 2010) for midwives, medical staff and nursing staff. Note the SaFE programme (Crofts et al, 2007, Siassakos et al., 2011a, Siassakos et al., 2011b) also had two groups randomised to receive additional teamwork training. Two programmes (Aune and Olufsen, 2014, Gordon et al., 2013) were delivered to postgraduate (PG) nursing and midwifery students consisted of teamwork training followed by group work around clinical scenarios. The study by Nielsen et al. (2007) also involved teamwork training, and an on-call multi-disciplinary team (MDT) of experienced physicians and nurses were trained to respond in a co-ordinated way to emergencies. The hospital-based strategy to improve communication with primary care providers involved a communication policy for contact with primary care health professionals (Nicolson et al., 2005) and the collaborative model of midwifery practice included regular MDT discussions, monitoring outcomes and communication strategy Beasley et al., 2012).

The three studies involving emergency simulation training were conducted in tertiary care settings in Australia (Régo et al., 2011), England (the SaFE study; Crofts et al., 2007, Siassakos et al., 2011a, Siassakos et al., 2011b) and the Netherlands (the TOSTI study; Fransen et al., 2012, van de Ven et al., 2010). Régo et al. used an uncontrolled before-and-after study evaluate the MaCRM programme, the SaFE study was evaluated using a 2x2 randomised controlled trial (all participants received emergency training but half participants were randomised to receive additional teamwork training) and the TOSTI study was a large multi-centre cluster-controlled study. Régo et al. reported significant increases in doctors’ willingness in planning ahead, giving specific instructions and asserting themselves between pre-test and post-test, but there was no significant changes in the midwives scores. However, the data reporting is limited and it is not possible to establish whether this is representative of a floor effect (i.e. if midwives had higher baseline scores) or lack of response to the programme. However, both midwives and doctors reported a greater ability to assume the role of leader. Due to the lack of a control group, the results of this study need to be interpreted with caution. The SaFE study reported that while the participants had an increase in clinical knowledge following the intervention, the inclusion of a specific teamwork training component, did not confer any benefit on knowledge. Further video analysis of the simulations identified significant correlations in teamwork skills and behaviours and clinical efficiency in some scenarios (see table 3.2 for details). In addition, teams that were more efficient were more likely to have stated the emergency using specific unambiguous terminology earlier and used closed-loop communication (clearly and loudly delegated, accepted, executed and completion acknowledged). Finally, the TOSTI study reported that the intervention group had significantly higher clinical teamwork scale scores than the control group and that the use of the predefined obstetric procedures for the two clinical scenarios was also significantly more frequent in the intervention group compared with the control group. Whilst the results of the SaFE study and the TOSTI study may show some promise, there is no measurement of how this translates into actual outcomes for women and babies, and further evaluation on this level is therefore necessary.

The evaluation of teamwork training programme (Nielsen et al., 2007) was a large multi-centre cluster-controlled trial conducted in multiple states in the USA and which did measure the effectiveness of the programme at the level of outcomes for women and babies. However, the authors reported no significant differences in adverse outcomes between the intervention and
control groups, indicating no demonstrable benefit, at least on clinical outcomes for women and babies.

The studies that involved IPE around scenarios for PG students were conducted in Norway and (Aune and Olufsen, 2014) and the UK (Gordon et al., 2013). Aune and Olufsen evaluated the programme through analysis of reflective notes written by the students. They reported that the role play components of the programme helped students identify ways in which they could work together and also that the programme helped them understand the other professions’ role and came to value their competencies. Gordon et al. employed an uncontrolled before-and-after study and reported that there was a non-significant improvement in attitudes to teamwork. The majority of students also reported being more aware of potential weaknesses in team-working, more conscious of their own abilities, more able to challenge poor behaviour and had a greater ability to work in a team. Whilst these findings may suggest that the students benefited from the programme, the current lack of a robust evaluation again means that they should be interpreted with caution.

The papers by Pollard (2008, 2012) both report on the same interprofessional pre-qualifying programme for nursing, midwifery, allied health professional and social work students. The curriculum includes compulsory, assessed interprofessional modules in each year, together with interprofessional outcomes in both uniprofessional modules and supervised practice. The curriculum is based upon the aims that IPE should prepare individuals for collaboration and afford them opportunities to cultivate collaborative practice. This curriculum was assessed with a longitudinal study which followed these students (n=249) into practice and compared outcomes related to interprofessional working with students who had undertaken a uniprofessional curriculum (Pollard et al., 2012). Students who undertook the interprofessional curriculum were increasingly positive about their communication and teamwork skills and interprofessional relationships between qualifying and practice. They were also less negative about interprofessional interaction (WZ = 3.33, p = 0.001). However, they were also less positive about IPE (WZ = 7.20, p < 0.001) and there was also no significant difference between the interprofessional and uniprofessional students. In a separate study Pollard (2008) explored students’ experiences of the curriculum with semi-structured interviews. This identified that while students generally felt positively to interprofessional working and that it provided them with a better knowledge of other professionals’ roles, some felt this could be better learned on placement. Nevertheless, it must be noted that these studies did have a range of limitations as the curriculum groups were not randomised and not all data is reported. However, it is the only study identified by this review that includes social workers.

The non-IPE interventions were both conducted in Australia. First, the collaborative model of practice was evaluated using a retrospective analysis of notes and a prospective analysis of audio recordings of case reviews (Beasley et al., 2012). This appeared more of an audit as results are limited to the extent to which medical staff were present at meetings (87.5% of the time) and verbal contribution of the midwives (mean=48.5% of time). Similarly, the hospital based communication strategy was evaluated using an audit of records (Nicolson et al., 2005) and reported some improvements in communication in terms of notification of birth outcome, blood test results, ultrasound, letter of enrolment, admission to hospital not for birth. Again, the lack of robust study design and lack of measurement on effect on mothers’ and babies’ outcomes, means that no conclusions can be drawn regarding the effectiveness of these approaches.
Table 3.2 Primary Studies detailing Strategies, Actions and Interventions to improve interprofessional working

<table>
<thead>
<tr>
<th>Study Author and Year</th>
<th>Aim and study design</th>
<th>Country and Workplace</th>
<th>Participant Details</th>
<th>Description of Strategy, Action or Intervention</th>
<th>Key Findings</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aune and Olsufsen (2014)</td>
<td>Understand experiences of an IPE programme Qualitative: students wrote reflective notes which were analysed through systematic text condensation.</td>
<td>Norway. Community ANC and PNC. Note ANC provided by MWs and PNC provided by PHNs.</td>
<td>PG MW students (n=28) and PG PHN students (n=30) aged 25-45 years. All had &gt;1 yr experience as a RN.</td>
<td>2hr interdisciplinary lectures on integrated ANC and PNC. 1 week of interdisciplinary group work sessions (6 per group) which had 4 steps: 1.Exchange information about their profession and how to collaborate 2.Worked on an assignment (e.g. role play for ANC classes, presentations) 3.Simulated learning through role play 4.Reflections on learning outcomes.</td>
<td>Themes identified: -Different focus but common goal. Recognition that both professions focused on health promotion and prevention and both are needed at different stages of care. -Professional recognition and respect. Students had pride in their own profession and initially sceptical about the collaborative project. Then discovered ‘blind spots’ in their understanding about the other group’s role and came to value their competencies. -Developing competence through situated learning. Role play helped identify the ways in which the two professions could collaborate/ work together. -Change in attitudes. Students more aware that both MWs and PHNs contribute to ANC and PNC and were positive about closer collaboration in future work (i.e. contacting each other and sharing information). -Confidence and predictability. Students felt lack of communication and confidence meant information could get lost. MW contact should be continued in collaboration with the PHN when providing PNC -Collaboration as professional resource. Students felt they could now use each other as a resource in care provision.</td>
<td>IPE</td>
</tr>
<tr>
<td>Beasley et al. (2012)</td>
<td>Assess efficacy of collaborative partnership (Midwifery Group Practice) between OBs and MWs. Retrospective analysis of notes and prospective</td>
<td>Sydney, Australia. Tertiary maternity unit</td>
<td>Staff (8 MWs, 1 OB, 1 REG). 337 women attended the practice and gave birth</td>
<td>Midwifery Group Practice is a “dynamic process of facilitating communication and trust between health professionals” (p.577). Includes: monitoring of health outcomes, regular MD discussions and all professionals have a clearly defined and inclusive communication strategy.</td>
<td>-Mean time for discussion per topic at meetings: Patients = 64%; Policies = 15%; conflict = 12%; Staff roles = 5%; Social = 2%; Anecdotal = 1%; Education =1% -Medical staff presence: OB present at 87.5% of meetings; REG present at 56.3% of meetings; OB only at 43.8% of meetings; REG only at 12.5%; both OB and REG = 43.8% - Verbal contribution of MW (% time) = 48.5%. Higher when only REG present (62.0%). 48.8% when only OB present and 45.2% when both present.</td>
<td>Collaborative model of midwifery group practice.</td>
</tr>
<tr>
<td>Study Author and Year</td>
<td>Aim and study design</td>
<td>Country and Workplace</td>
<td>Participant Details</td>
<td>Description of Strategy, Action or Intervention</td>
<td>Key Findings</td>
<td>Theme</td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------------------</td>
<td>-----------------------</td>
<td>---------------------</td>
<td>------------------------------------------------</td>
<td>--------------</td>
<td>-------</td>
</tr>
<tr>
<td>Gordon et al. (2013)</td>
<td>Assess acceptability and effectiveness of the team objective structured clinical encounter (TOSCE) as an IPE tool. Quantitative: before-and-after study and qualitative debrief.</td>
<td>UK. PG students on a part-time PG course.</td>
<td>PG neonatal nurses (n=15) and PG MWs (n=30)</td>
<td>3hr teaching session. First shown a video to stimulate discussion around errors from team working. Then had a presentation on how failures can contribute to errors. Participants then in mixed teams of 7-8. A short video with a clinical vignette was shown and team given 20 minutes to discuss, which was observed. Teams then given 20 minutes of feedback</td>
<td>-18% of women referred for obstetric consultation</td>
<td>IPE</td>
</tr>
<tr>
<td>Nicolson et al. (2005)</td>
<td>evaluate initiatives to improve communication between three maternity hospitals and GPs involved in</td>
<td>Melbourne, Australia. Shared care (hospital and primary care provided by MW and/or GP and</td>
<td>Hospital records for 217 women receiving shared care</td>
<td>Communication policy developed for each hospital which was presented at staff induction and at clinical staff education sessions. Changes were made to shared-care coordinator job descriptions to include responsibility for communications. Computer</td>
<td>Following significant improvements in communication identified:</td>
<td>Hospital-based strategy to improve communication with primary care providers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Non-significant improvement in teamwork attitudes questionnaire mean score (pre-mean 127, post-mean 131) |
- 83% more aware of potential weaknesses in teamworking |
- 70% more conscious of own abilities |
- 65% more able to challenge poor behaviour from colleagues |
- 60% greater ability to work in a team. |
- Participants enthusiastic of TOSCE as a teaching method. |
- Participants felt smaller groups of 5-6 would work better in terms of getting feedback and allowing participants to have a meaningful role. |
<table>
<thead>
<tr>
<th>Study Author and Year</th>
<th>Aim and study design</th>
<th>Country and Workplace</th>
<th>Participant Details</th>
<th>Description of Strategy, Action or Intervention</th>
<th>Key Findings</th>
<th>Theme</th>
</tr>
</thead>
</table>
| (Régo et al., 2011)   | Evaluation of the Maternity Crisis Resource Management (MaCRM) programme. Mixed methods: Before-and-after questionnaire and semi-structured interviews. | Queensland (tertiary care) | Questionnaire: MWs (n=151) Doctors (n=44) Interviews: MWs (n=20), doctors (n=10) | MaCRM is a 2 day course run by experienced MWs and OBs. Day 1 is didactic teaching and skills stations on emergencies such as maternal collapse, pre-eclampsia, shoulder dystocia. Day 2 participants work as interdisciplinary teams to manage these simulated maternal emergencies in five different scenarios. Up to 10 people (8 MWs, 2 doctors) participate in each programme | Quantitative data (collected at two month follow-up):  
- Doctors’ (but not MWs’) willingness to call for help earlier had improved marginally ($Z = -1.72$, $P = 0.05$), as had planning ahead ($Z = -1.9$, $P = 0.05$).  
- Doctors’ (but not MWs’) scores for giving specific directions to team members and for asserting themselves with more senior members of staff had improved significantly ($Z = 2.3$, $P = 0.02$ and $Z = 2.3$, $P = 0.02$ respectively).  
- MWs and doctors reported a greater ability to assume the role of leader ($Z = 2.5$, $P = 0.01$ and $Z = 2.6$, $P = 0.008$ respectively)  
- Ability to stay calm in a crisis did change significantly for either |
|                      |                      |                       |                    |                                               | Qualitative data (themes):  
- Participants felt that future MaCRM programmes should remain interdisciplinary as it relates to the real world and enables development of empathy.  
- Need for effective communication | IPE (simulation based training) |
| Crofts et al. (2007), Siassakos et al. (2011a) and Siassakos et al. (2011b) both from | To explore the effect of obstetric emergency training on knowledge and identify specific aspects of teamwork associated | South West of England, tertiary care. | Jnr MWs (n=47), Snr MWs (n=47), Jnr doctors (n=22), Snr doctors (n=23) | Group A1. One day obstetric emergency training course in a low fidelity setting and will exclude specific team training.  
Group B1. One day obstetric emergency training course in a high fidelity setting and will exclude specific team training.  
Group A2. One day obstetric emergency training course in a low fidelity setting and will exclude specific team training.  
Group B2. One day obstetric emergency training course in a high fidelity setting and will exclude specific team training. | RCT results (Crofts et al.):  
- mean MCQ score increased by 20.6 points (95% CI 18.1–23.1, $P < 0.001$)  
- No significant effect on the MCQ score of either the location of training (two-way analysis of variants $P = 0.785$) or the inclusion of teamwork training ($P = 0.965$).  
Video analysis results (Siassakos et al.):  
- Significant correlation between clinical efficiency score (administration of magnesium for pre-eclampsia) and team skills score ($taub = 0.54$, $p < 0.001$), team behaviour score ($taub$ | IPE (simulation based training) |
<table>
<thead>
<tr>
<th>Study Author and Year</th>
<th>Aim and study design</th>
<th>Country and Workplace</th>
<th>Participant Details</th>
<th>Description of Strategy, Action or Intervention</th>
<th>Key Findings</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>the Simulation &amp; Fire-drill Evaluation (SaFE) randomised controlled trial</td>
<td>with greater clinical efficiency in simulated obstetric emergencies. 2 x2 RCT and cross-sectional secondary analysis of video recordings. Outcome was emergency management of pre-eclampsia.</td>
<td></td>
<td></td>
<td>fidelity setting and will include specific team training. Group B2. One day obstetric emergency training course in a high fidelity setting and will include specific team training.</td>
<td>= 0.41, p = 0.001), and the overall teamwork score (taub = 0.51, p &lt; 0.001). • Teams with lower teamwork skills scores took significantly longer to perform the following actions: recovery position: taub = −0.25, p = 0.026; O2 administration: taub = −0.41, p &lt; 0.001; blood sampling: taub = −0.35, p = 0.002) • Teams with lower teamwork behaviour skills took significantly longer to perform the following actions O2 administration (taub = −0.28, p = 0.014) and blood sampling (taub = −0.35, p = 0.002) but not for recovery position. Video analysis results (Siassakos et al.): • Teams that were more efficient in magnesium sulphate administration were more likely to have stated the emergency using specific unambiguous terminology earlier (taub = −0.53, 95% CI 0.74 - 0.32, p = 0.004), and to have managed the critical task using closed-loop communication (task clearly and loudly delegated, accepted, executed and completion acknowledged; taub = 0.46, 95% CI 0.17−0.74, p = 0.022). There was a non-significant association with SBAR use.</td>
<td>IPE (simulation based training)</td>
</tr>
<tr>
<td>Fransen et al. (2012) and van de Ven et al. (2010) both from the TOSTI study</td>
<td>To evaluate the cost-effectiveness of multidisciplinary team training in a medical simulation centre in the Netherlands to reduce the number of medical errors in obstetric emergency</td>
<td>The Netherlands, university teaching hospitals. Obstetric departments (intervention = 12 with 74 clinical teams, control = 12)</td>
<td>Multidisciplinary team training in a medical simulation centre. Groups of 6 (including OB, REG, MW, RN) will be trained in each hospital over a 4 week period. Will work through emergency scenarios in which the case is first presented in a briefing session using a video. They will then work through a simulation for 20 minutes and have a 30 minute de-brief.</td>
<td>• The intervention group had significantly higher clinical teamwork scale scores than the control group (median score: 7.5 versus 6.0, respectively; p = 0.014) • The use of the predefined obstetric procedures for the two clinical scenarios was also significantly more frequent in the intervention group compared with the control group (83% versus 46%, respectively; p = 0.009).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study Author and Year</td>
<td>Aim and study design</td>
<td>Country and Workplace</td>
<td>Participant Details</td>
<td>Description of Strategy, Action or Intervention</td>
<td>Key Findings</td>
<td>Theme</td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------------------</td>
<td>-----------------------</td>
<td>--------------------</td>
<td>------------------------------------------------</td>
<td>--------------</td>
<td>-------</td>
</tr>
</tbody>
</table>
| Nielsen et al. (2007) | To evaluate the effect of teamwork training on the occurrence of adverse outcomes and process of care in labor and delivery. Cluster-controlled trial. | US (range of states) tertiary care in military and civilian hospitals. | 7 intervention hospitals and 8 control hospitals. Total of 1307 staff trained. Data collected for 94.4% of deliveries at control hospitals (n=14336) and 95.9% of deliveries at intervention sites (n=14200). | Standardized teamwork training curriculum MedTeams Labor & Delivery Team Coordination Course based on crew resource management that emphasized communication and team structure. Clinical staff attended a 3 day instructor training course which covered covering team structure and processes, planning and problem solving, conflict resolution, communication, workload management, team skills, and implementation. Trainers returned to their hospital to run MDT training sessions. In addition, a MDT of experienced physicians and nurses were trained to respond in a co-ordinated way to emergencies. | • No significant differences in adverse outcomes between the intervention and control group at post-test.  
• Of the ten process measures (which recorded length of stay or delay to action e.g. registration to provider assessment) only one, immediate cesarean section decision to incision (min) had a significantly reduced time in the intervention group (33.3min) vs the control (21.2min), $p = 0.03$. | IP training and IP team. |
<table>
<thead>
<tr>
<th>Study Author and Year</th>
<th>Aim and study design</th>
<th>Country and Workplace</th>
<th>Participant Details</th>
<th>Description of Strategy, Action or Intervention</th>
<th>Key Findings</th>
<th>Theme</th>
</tr>
</thead>
</table>
| Pollard et al. (2009) | To evaluate the effect of an interprofessional curriculum during pre-registration programmes on attitudes to collaborative learning and working after 9–12 months in professional practice. Longitudinal study with two non-randomised groups. | Bristol, UK. No specific details on workplace. | IP curriculum students (n=249) and comparison (n=139). Includes: Adult nursing, children’s nursing, radiography, learning disabilities nursing, mental health nursing, midwifery, occupational therapy, physiotherapy, social work | The interprofessional curriculum includes compulsory, assessed interprofessional modules in each year, together with interprofessional outcomes in both uniprofessional modules and supervised practice. The curriculum is based upon the aims that IPE should prepare individuals for collaboration and afford them opportunities to cultivate collaborative practice. | • Interprofessional students were increasingly positive about their communication and teamwork skills (WZ = 2.74, \( p = 0.006 \)) and interprofessional relationships (WZ = 3.97; \( p < 0.001 \)) between qualifying and practice. They were also less negative about interprofessional interaction (WZ = 3.33, \( p = 0.001 \)). However, they were also less positive about IPE (WZ = 7.20, \( p < 0.001 \)).  
• Changes in scores between qualifying and practice are not reported for the comparison group.  
• There were no significant difference in scale responses between the interprofessional curriculum group and the comparison group except that comparison students responded less positively to the Interprofessional Relationships Scale (M-WZ = 5.05, \( p < 0.001 \)) | IPE |
| Pollard et al. (2008) | To explore recently qualified health professionals’ views about pre-qualifying interprofessional learning. Qualitative: semi-structured interviews with data analysed thematically. | Bristol, UK. No specific details on workplace | IP curriculum students (n=19) and comparison students (n=10). Included adult nurses (n=13), midwives (n=4), physiotherapists (n=5), social work (n=7). | Same IP curriculum as Pollard et al. (2008) above. | Themes:  
• Pre-qualifying education as preparation for interprofessional working: IPL in the academic environment. Positive factors of IPE included engaging and learning about other professional’s roles and team working. Some participants felt interprofessional working could not be taught and hands’ on experience was more valuable. In addition some participants felt that the modules created stereotypes.  
• Pre-qualifying education as preparation for interprofessional working: IPL in placement settings. Organization of services meant placements offered very different opportunities. Good role modelling was identified by many participants and related to time the staff had been working on the ward. |   |
<table>
<thead>
<tr>
<th>Study Author and Year</th>
<th>Aim and study design</th>
<th>Country and Workplace</th>
<th>Participant Details</th>
<th>Description of Strategy, Action or Intervention</th>
<th>Key Findings</th>
<th>Theme</th>
</tr>
</thead>
</table>

- Experience of IPW as professionals: IPW in current practice environments. Majority of participants reported good interprofessional working in their current department and two reported difficulties.
- Experience of IPW as professionals: Factors contributing to good IPW. Majority of respondents felt knowledge of other professionals’ roles contributed to good interprofessional working. Good communication skills and practices such as being approachable, being adaptable, maintaining contact and appropriate use of documentation helped with interprofessional working. Organizational factors such as shift systems could act as a barrier.
- Experience of IPW as professionals: Impact on care delivery. Good interprofessional working was associated with having a positive impact on service delivery. Outcomes mentioned included prevention of admission and swifter and smoother discharge, achieved through enhanced information exchange and service coordination.
- Reflection. Participants from the interprofessional curriculum tended to demonstrate an understanding of their own behaviour in teams and contributions they made and also demonstrated reflective skills.

Abbreviations: Interprofessional Education=IPE; PG = postgraduate; RN = registered nurse; antenatal care=ANC; postnatal care = PNC; MW=midwives; OB=consultant obstetrician; REG= obstetrics registrar; PHN=public health nurses
Of the fifteen studies which examined barriers to interprofessional working, eight used qualitative methods, namely: semi-structured interviews, focus groups, in-depth interviews, ethnography and open-ended questionnaires (Collin et al., 2000, Engqvist et al., 2010, Howarth et al., 2012, Kennedy and Lyndon, 2008, Lyndon, 2008, Munro et al., 2013, Murray-Davis et al., 2011, Schölmerich et al., 2014). The other four studies (reported in five records) used both qualitative methods and quantitative methods in the form of questionnaires measuring attitudes, experiences and beliefs (Caldow et al., 2011, Farmer et al., 2003, Harris et al., 2011, Psaila et al., 2015, Psaila et al., 2014, Ratti et al., 2014, Shaw, 2013, Tucker et al., 2005). Studies were conducted in a range of countries: three studies were conducted in Canada (Collin et al., 2000, Munro et al., 2013, Ratti et al., 2014), one in Sweden (Engqvist et al., 2010), two in Scotland (Farmer et al., 2003, Harris et al., 2011, Tucker et al., 2005), one in New Zealand (Howarth et al., 2012), two in the USA (Kennedy and Lyndon, 2008, Lyndon, 2008), one in England (Murray-Davis et al., 2011), one in the UK (Caldow et al., 2011), one in Australia (Psaila et al., 2015, Psaila et al., 2014), one in the Netherlands (Schölmerich et al., 2014) and one in Northern Ireland (Shaw, 2013). Studies were conducted in both hospital and community settings and also in urban and rural settings, including three study which examined community maternity care in remote and rural parts of Scotland and the rest of the UK (Caldow et al., 2011, Farmer et al., 2003, Harris et al., 2011, Tucker et al., 2005).

Details of the context, methods, participants and key findings are reported in table 3.3. This information was then examined for themes that ran across the studies. The following barriers to interprofessional practice identified:

- Lack of awareness about other health professionals’ roles. This theme consistently came up, particularly in the context of nursing and medical staff lacking knowledge about the role of a midwife and what competencies they have.
- Territorial issues. This refers to the health professionals need to define and protect their clinical area. This was particularly evidence in rural primary care areas with small volumes if deliveries, where GPs were still providing maternity care and were scared of losing this to midwives.
- Structural issues that limit contact. Being housed in different buildings/settings made regular communication difficult. This was greatest at the interface between primary and secondary care.
- Differences in philosophies of care. A consistent theme was the tension between the midwifery approach to birth being a normal process and providing woman-centred care and the more medicalised care delivered by clinicians. This was particularly evident in obstetricians and GPs concerns about home-births and wanting to intervene in labour earlier.
- Hierarchies. Traditional hierarchies could still influence team interactions and some participants were concerned about ‘breaking rank’ and this could lead to conflict avoidance.
- Poor communication. This was particularly in the context of transmission of written information at the interface of primary and secondary care.
- Separate guidelines for different professionals and/or lack of knowledge of guidelines and policies.
- Specific to rural settings, there could be tensions between staff working in urban and rural settings around risk escalation and de-escalation, in terms of urban staff feeling that some referrals were unnecessary and not appreciating how early decisions regarding transfer had to be made in some remote and rural areas.
The following facilitators to interprofessional working were identified:

- Collaborative working practices such as joint assessments, rounds and care planning helped facilitate successful interprofessional working. This also gave health professionals a chance to learn about their colleagues’ role and competencies.
- Participants consistently reported that the opportunity to get to know (and therefore trust and understand) colleagues informally helped improve interprofessional working. This could involve simple strategies such as meeting in the coffee room.
- Regular opportunities for contact. This links to the two themes above and participants consistently reported that regularly being able to meet with colleagues in different capacities helped ease any conflict.
- Helping each other. Simple things like providing assistance to a colleague from another discipline when they were busy could help facilitate working relationships.
- Regular opportunities for contact.
- Perceived competence in colleagues’ ability helped foster trust which in turn helped interprofessional working.
- Effective communication. This relates to good interpersonal skills which were seen as important to successful interprofessional working.
- Good team working contributed to confidence in decision making in remote and rural settings.
<table>
<thead>
<tr>
<th>Author &amp; Year</th>
<th>Aim and Study Design</th>
<th>Country and Workplace</th>
<th>Participant Details</th>
<th>Key Findings</th>
<th>Themes of barriers and facilitators</th>
</tr>
</thead>
</table>
| (Collin et al., 2000) | To identify professional and organizational factors that would promote the best outcomes and autonomy of MWs when integrating MWs in the health system. Qualitative: semi-structured interviews and focus groups. Analysed with a grounded theory approach. | Quebec, Canada. Birth centres administered by local community services centres and were pilot projects. Staffed by MWs and lay assistants.                                                                 | Co-ordinators of birth centres and directors of local community service centres (n=14; semi-structured interviews) HPs including MWs, lay assistants, family physicians, OBs, neonatalists and nurses (n=21; semi-structured interview). Midwives and nurses (n=7; focus groups). | MWs poorly integrated which potentially caused difficulties accessing consultants and technology and also delays in referrals and transfers of women to hospitals and physicians. Main reasons for lack of integration:  
• Lack of awareness of by other HPs about role of MWs. Little done to educate before the integration of MWs into the system.  
• Legal and organization structure. Only MWs could work in the new centres which limited contact with other HPs. Vagueness on legal divisions of responsibilities of all HPs and how MWs could share responsibility of care with other HPs.  
• Competition over professional territories. HPs had distrustful and resistant attitudes towards MWs. MWs defined themselves as specialists of normal pregnancy and carved their own territory. Co-operation depended upon dynamics which were aimed at protecting, conquering and redefining territories of each group.  
• Gaps in professional culture. MWs shared a common philosophy and many had never worked in an institutional setting with other HPs. Also had a history of marginal practice and culture favouring alternative and community care. This led to specific conceptions of risk, professional responsibility and client-provider relationship which was a barrier to co-operation with other HPs:  o Conception of risk. Polarization of views in terms of risk of birth especially in situations of emergency transfer. OBs were suspicious of a non-interventionist approach and believed hospital was only safe setting for birth.  o Professional responsibility and client-provider relationship. OBs believed clients wanted a perfect baby and were concerned about the risk of a law suit but felt women who chose MWs would be less likely to sue. By giving clients more responsibility and different expectations, MWs have a different relationship. |  
• Lack of awareness about other HPs’ roles.  
• Territorial issues.  
• Structural issues which limit contact  
• Differences in philosophies of care |
<table>
<thead>
<tr>
<th>Author &amp; Year</th>
<th>Aim and Study Design</th>
<th>Country and Workplace</th>
<th>Participant Details</th>
<th>Key Findings</th>
<th>Themes of barriers and facilitators</th>
</tr>
</thead>
</table>
| Engqvist et al. (2010) | To describe psychiatrists’ experiences of collaboration with HPs when treating women with PPP. Qualitative: interviews with content analysis. | Sweden. Post-partum units in different geographical areas. | Psychiatrists, n=7 (female = 4, male = 5). | Collaboration during inpatient care:  
- The psychiatrists identified RNs as the most important team member which they collaborated and had a positive relationship with them. Collaboration occurred during rounds, joint assessments and in daily care-planning discussions.  
- Psychiatrists felt that to be good collaborators the RNs had to have a good knowledge base, deliver optimum care, provide a protective environment and be empathetic. If this was the case then the psychiatrists would have confidence in the RNs’ competence.  
Collaboration related to discharge:  
- Psychiatrists, RNs, psychologists, paediatricians, social workers and the family all part of the discharge planning. | - Collaborative working facilitated by joint assessments, rounds and care-planning  
- Perceived competence develops trust |
| Farmer et al. (2003) | To explore how routine ANC is provided in remote and rural areas, to examine GPs’ and MWs’ perceptions of their relative professional roles and to assess their approach to working together. Quantitative and qualitative: questionnaire and semi-structured interviews. | Scotland. Primary care in remote and rural areas. | Questionnaire: GPs (n=117), MWs (121). At least one professional returned a questionnaire for 90.8% of practices. Interviews: 20 short interviews with a GP and a MW from same practice. | Dissonance between MWs and GPs about professional roles:  
- 65.4% of professionals in agreement for arrangements in ANC at their practice).  
- 24.8% of GPs reported that they acted as the maternity care co-coordinator but 5.8% of MWs thought GPs acted in this capacity.  
- 56.4% of GPs felt role of maternity care co-ordinator should be shared and 35% thought it should be the role of the MW.  
- 66% of MWs saw themselves as the maternity care co-ordinator which was a significant difference ($\chi^2= 23.61$, df= 2, $p < 0.001$).  
Factors in identifying maternity care co-ordinator differed between GPs and MWs:  
- highest number of GPs rank ‘availability of staff’ first (65.7%: 69), followed by ‘patients’ wishes’ ranked second (61.8%: 63) and ‘professionals’ own beliefs’ ranked third (70.2%: 66)  
- MWs rank ‘patients’ wishes’ first (54.6%: 59), followed by ‘availability of staff’ (44.6%: 50) and ‘professionals’ own beliefs’ ranks third (73.1%: 76). These differences were significant $p = <0.001$.  
Qualitative data:  
- MWs expressed as desire for greater input and ANC and their role was dependent upon the practice they were working for and involvement is ‘dictated’ by the GP.  
- MWs felt entrenched attitudes and some GPs need to hold on to ANC acted as interprofessional barrier.  
- Recent structural changes (midwifery split from community nursing) disrupted working relationships and MWs felt trust would need time to build. | - Lack of awareness about other HPs’ roles.  
- Territorial issues.  
- Differences in philosophies of care  
- Low volume of deliveries meaning less experience for GPs  
- Concerns about home births |
### Key Findings

- Some GPs reported would like more MW involvement and expressed willingness to collaborate.
- Other GPs felt continued involvement in ANC was important as it contributed to job satisfaction.
- Respondents felt that a one size fits all approach would not work in remote areas and because of MW availability, GP led ANC may be safer.
- GPs concerned that MW involvement may lead to more home births which they were concerned about in the context of skill loss in the small number of babies delivered.
- Both MWs and GPs felt there was a need for training and updating competencies.

### Themes of barriers and facilitators

- Women stressed at receiving inconsistent advice

---

**Author & Year**

<table>
<thead>
<tr>
<th>Author &amp; Year</th>
<th>Aim and Study Design</th>
<th>Country and Workplace</th>
<th>Participant Details</th>
<th>Key Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Howarth et al. (2012)</td>
<td>First-time mothers’ perspectives on relationships with and between midwives and doctors. Qualitative: semi-structured interviews analysed using a phenomenological form of thematic analysis</td>
<td>New Zealand. Both hospital and home births. Half of the births were instrumental and/or induced</td>
<td>First time mothers aged 24-38 years (31.5 years) who received care during pregnancy from a MW.</td>
<td>Note study looks at whole birth experience. This extraction limited to IP working. Conflict between MWs and doctors: 2 participants who needed medical assistance found themselves in the middle of a conflict between the MW and doctors, which exacerbated anxiety as conflicting advice was being given.</td>
</tr>
<tr>
<td>Kennedy and Lyndon (2008)</td>
<td>To explore the practice of midwifery and to present findings on the relationships between nurses and midwives in providing maternity care. Qualitative: in-depth interviews and observation. Ethnographic framework with thematic analysis.</td>
<td>Northern California. Busy urban tertiary hospital birth setting. MWs attend 40-50% of births.</td>
<td>MWs (n=14), nurses (n=14).</td>
<td>Tensions  - Philosophic Tensions. Conflict occurred when MWs believed colleagues did not share their philosophy of birth being a normal process. IV access was an example of this, with RNs feeling lack of access could be unsafe but MWs felt it would take away from normality. However, MWs felt RNs could be divided in whether or not they viewed birth as a normal process. RNs could also feel like they were the ‘bad guy’ as they had to enforce certain policies or prejudged about their philosophical beliefs. There were disparities between MWs and RNs about what constituted safe and manageable practice for fetal assessment.  - Communication and respect. RNs reported not feeling part of the team and some felt taken for granted by MW and OBs but it worse coming from MWs as the RNs felt they all came from the same roots. RNs also reported a sense of oppression that sometimes came from the MWs. Some RNs also felt MWs did not understand the scope of their work or their constraints (e.g. documentation, staffing). MWs also perceived behaviour</td>
</tr>
</tbody>
</table>
### Lyndon (2008)

**Aim and Study Design**
To identify processes affecting agency for safety among perinatal nurses, physicians, and certified nurse-midwives.

**Qualitative: semi-structured. Grounded theory approach.**

**Country and Workplace**
California. University teaching hospitals.

**Participant Details**
- RNs (n=12), Physicians (n=5) and MWs (n=2)

**Key Findings**
- Note this extraction limited to findings on IP working.
- Segregation of professional activities. RNs and physicians handed over at mutually exclusive times. RNs rarely attended teaching rounds where plans were reviewed, updated and validated. This meant RNs felt they could not contribute to decision making process. MWs were present but their role varied depending on the model of care. RNs frustrated at lack of formal care.
- Hierarchy. Traditional hierarchies influenced team interactions and some participants expressed concerns about breaking the hierarchy.
- Quality of relationships. Knowing other and having good relationships facilitated effective teamwork as it helped develop trust and a knowledge of how the other person would respond. Knowing a person also helped them develop strategies if that person was difficult to get own with.
- Response to concerns. RNs expressed difficulty in getting OBs or MWs to respond to concerns.
- Parallel worlds. Seeing women separately meant care plans were not co-ordinated and inconsistent advice was given.
- Avoiding conflict. High perceived importance of interpersonal relationships meant some HPs avoiding conflict to the detriment of patient safety. This included not mentioning problems and not reporting incidents.

**Themes of barriers and facilitators**
- Hierarchies
- Knowing and trusting other team members
- Lack of communication
- Inconsistent advice
- Conflict avoidance
<table>
<thead>
<tr>
<th>Author &amp; Year</th>
<th>Aim and Study Design</th>
<th>Country and Workplace</th>
<th>Participant Details</th>
<th>Key Findings</th>
<th>Themes of barriers and facilitators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Munro et al. (2013)</td>
<td>The barriers to and facilitators of interprofessional models of maternity care between physicians, RNs, and MWs. Qualitative: interviews and focus groups guided by an exploratory framework</td>
<td>Rural B.C., Canada. Two communities were in the process of integrating midwifery care and two communities had established midwifery care.</td>
<td>MWs (n=7); physicians (n=27); labour and delivery nurses (n=11); PHNs (n=7), birthing women (n=5); allied community-based providers (n=5), administrators (n=5), decision makers (n=7)</td>
<td>Note this extraction limited to findings on IP working. • Consequences. Specifics of a situation could lead to strong advocacy and assertive communication which helped lead to a clear resolution. • Low volume deliveries. The introduction of MWs in areas with low volume deliveries would impact sustainability of GP provided maternity care and GPs may perceive it as a threat. • For MWs most significant challenge to IP working was resistance from physicians and nurses which stemmed from their negative attitudes towards midwifery, particularly in the context of rural home births. MWs felt that these fears reflected a lack of knowledge by other HPs on MWs’ roles as well as lack of experience in working with MWs. This could lead to resistance of working with MWs. • Physicians perceived inequities in payment and difficulties dealing with remuneration as a major barrier. • Physicians felt scope of practice would have to change (e.g. hour long visits, homebirth) would have to change to reduce variation between practitioners. • PHNs were supportive of collaborating with MWs but labour ward nurses had concerns about what their role would involve. • Women were less keen on a shared care approach as it would lead to unpredictable care. • Administrators. Lack of processes to explain how midwifery works in existing services. • Successful collaboration depended upon strong relationships between MWs and hospital staff. This could be facilitated by formal team building activities such as department meetings, in-service education and building friends all of which develop trust. • Participants felt that collaboration could also be enhanced by open communication, clarity of roles, shared decision making and flexibility</td>
<td>Low volume of deliveries meaning less experience for GPs • Concerns about home births • Lack of awareness about other HPs’ roles. • Territorial issues. • Inconsistent advice • Knowing and trusting other team members • Regular opportunities for contact • Shared decision making • Flexibility in role</td>
</tr>
<tr>
<td>Murray-Davis et al. (2011)</td>
<td>To explore the views of MWs and educators regarding interprofessional working and learning within midwifery care.</td>
<td>UK, four teaching hospitals that include MWs in the IPE curriculum</td>
<td>Educators, new MWs, students and managers (n=39)</td>
<td>• Interprofessional working facilitated by MDT meetings and emergency drills • OBs who were easily accessible and MWs in senior clinical posts significant in fostering effective working relationships • Getting to know other HPs informally (e.g. in the coffee room) helped develop personal relationships. • Shared goals for the unit helped facilitate collaboration and minimise conflict • Many MWs felt other HPs lacked awareness about their role and that hierarchies influenced and acted as a barrier to interprofessional relationships.</td>
<td>Regular opportunities for contact • Knowing and trusting other team members • Shared goals.</td>
</tr>
<tr>
<td>Author &amp; Year</td>
<td>Aim and Study Design</td>
<td>Country and Workplace</td>
<td>Participant Details</td>
<td>Key Findings</td>
<td>Themes of barriers and facilitators</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------</td>
<td>-----------------------</td>
<td>---------------------</td>
<td>--------------</td>
<td>-----------------------------------</td>
</tr>
</tbody>
</table>
| Qualitative: semi-structured interviews and focus groups. | | | | • Conflict of opposing ideologies  
  • Reflective practice could help improve interprofessional communication as can help new MWs gain confidence which was necessary to prevent an uneven power distribution.  
  • Communication skills also seen as key to IP working  
  • MWs generally supportive of IPE although some were not convinced that it added value | • Lack of awareness about other HPs’ roles.  
  • Hierarchies  
  • Differences in philosophies of care  
  • Effective communication |
| To explore and describe the process of ToC between maternity services and the CFH service. Quantitative and qualitative questionnaire. Focus groups/teleconference s. | Australia (all states included) Transition between hospital-based and community-based care. | Questionnaire: MWs (n=1098), CFH nurses (n=655). Focus groups: MWs (n=40), CFH nurses (n=65) | CFH Nurses felt received all the necessary information on the discharge on the discharge summary 2/3 of the time and MWs felt was sufficient 72% of the time. When insufficient it was felt that this could be due to staff shortages, inexperienced staff or the design of the summary. Some staff felt it could be improved by verbal handover for high risk families.  
  • Psychosocial information only reported in 38.9% of summaries  
  • 36.6% of MWs felt ToC was effective. Issues were due to missing data, doubling up of service provision, lack of feedback to midwives from CFH service, staffing issues, and system issues of time lag, difficulty in contacting CFH nurse, being actively prevented from contacting CFH nurses directly if concerned about a family  
  • Some MWs their role in postnatal care is misunderstood by CFH nurses and felt there were differences in philosophies of care which could cause problems in working together.  
  • Participants felt ToC could be facilitated by joint visits by MWs and CFHs at handover, regular meetings to discuss transition and improved communication pathways for vulnerable families. | • Poor communication  
  • Lack of awareness about other HPs’ roles.  
  • Differences in philosophies of care  
  • Seeing women together  
  • Regular opportunities for contact |
| To identify barriers to an effective working relationship between physicians (both OBs and GPs) and MWs. Quantitative and qualitative. | Calgary, Canada. Hospital and community-based care. | MWs (n=25), OBs (n=37), GPs (n=56) | Majority of respondents believed the interprofessional relationship could be improved by forming a pregnancy care working group (OBs = 61%, GPs = 79%, MWs = 76%). This would involve regular meetings and involving MWs on grand rounds.  
  • OBs and GPs had negative perceptions of midwifery in terms of their training or the evidence base which contributed to a lack of awareness of their scope of practice and trust in their abilities.  
  • There were differences in opinions on the dangers of childbirth, need for interventions and priorities for the childbirth experience. | • Differences in philosophies of care  
  • Lack of awareness about other HPs’ roles.  
  • Differences in philosophies of care |
<table>
<thead>
<tr>
<th>Author &amp; Year</th>
<th>Aim and Study Design</th>
<th>Country and Workplace</th>
<th>Participant Details</th>
<th>Key Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Questionnaire with some open-ended questions.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Participants felt more clearly defined boundaries for shared care and transfer of care would reduce confusion and tension
- Collaborative care would help HPs experience each other’s professional skills, roles, and style of working
- Educating medical students, residents, and midwifery students together and also professionals together could help working relationships
- Regular daily interaction could help HPs get to know each other and help build trust.

<table>
<thead>
<tr>
<th>Themes of barriers and facilitators</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Regular opportunities for contact</td>
</tr>
<tr>
<td>• Clearly defined job roles</td>
</tr>
<tr>
<td>• Seeing women together</td>
</tr>
<tr>
<td>• Need for IPE</td>
</tr>
<tr>
<td>• Knowing and trusting other team members</td>
</tr>
<tr>
<td>• Poor communication</td>
</tr>
<tr>
<td>Author &amp; Year</td>
</tr>
<tr>
<td>---------------</td>
</tr>
</tbody>
</table>
| Schölerich et al. (2014) | To identify barriers in coordination of care by MWs and OBs. Qualitative: interviews analysed using content analysis. | The Netherlands. Hospital and community-based settings. | Community MWs (n=13), Hospital-based MWs (n=8), OBs (n=19). | Sources of the problem:  
• Obstetric guidelines don’t facilitate shared care  
• Financial reimbursement system does not provide incentives for cooperation  
• Lack of a shared maternity notes system  
• Physical distance between HPs  
• Different perspectives on pregnancy and different ‘languages’ spoken by HPs  
Encountered problems:  
• Caregivers are encouraged to identify women as strictly in one level of care  
• Feeling of financial competition amongst caregivers  
• Inadequate information flows  
• Lack of frequent contact between MWs and secondary care HPs  
• Lack of shared knowledge, mutual trust and respect  
Proposed solutions:  
• Adapting the obstetric guidelines to explicitly facilitate shared care  
• Consider revising the current financial system  
• Shared maternity notes system for all levels of care  
• Frequently scheduled face-to-face meetings with all HPs to discuss care plans for women would benefit from shared care  
• Training in IPE and teamwork  
• REGs spend some of training time with community MWs | • Different/ lack of awareness of guidelines  
• Financial disincentives  
• Lack of access to notes/ shared notes  
• Differences in philosophies of care  
• Poor communication  
• Regular opportunities for contact  
• Knowing and trusting other team members  
• Need for IPE |
| Shaw (2013) | To identify barriers prohibiting collaborative working between GPs and community MWs. Qualitative: semi-structured interviews and professional forum. Quantitative: questionnaire | Northern Ireland. Primary care. | Interviews: “key players in maternity services for the area” (n=6). Questionnaire: MWs (n=4), senior GPs (n=11). | Lack of regular meetings within GP surgeries to discuss women with complex care needs  
• MWs did not have a standardised referral letter or access to the digital or written records at the surgery.  
• Lack of IPE  
• Differences in opinion on who should be the lead for maternity care as 75% of MWs felt they should take the role but only 40% of GPs felt the MW should take on the role.  
• Some GPs were concerned that they were being ‘pushed out’ of maternity care  
• Poor communication in terms of GPs sharing medical histories with MWs was identified.  
• GPs unaware about policy changes and service documents  
• Limited contact between MWs and GPs contributes to lack of sharing information | • Poor communication  
• Different/ lack of awareness of guidelines  
• Lack of access to notes/  
• Regular opportunities for contact  
• Territorial issues |
<table>
<thead>
<tr>
<th>Author &amp; Year</th>
<th>Aim and Study Design</th>
<th>Country and Workplace</th>
<th>Participant Details</th>
<th>Key Findings</th>
<th>Themes of barriers and facilitators</th>
</tr>
</thead>
</table>
| Harris et al. (2010) and Tucker et al. (2005) | To explore and understand what it means to provide maternity care in remote and rural Scotland. Qualitative: semi-structured interviews analysed via a case study approach (Harris et al., 2010, Tucker et al., 2005) and questionnaire which was based on the interview themes (Tucker et al., 2005). | Scotland. Remote and rural maternity care settings. | Interviews: Anaesthetists (n=3), General Surgeons (n=2), GPs (n=10), Maternity care assistants (n=4), MWs (n=38), neonatal nurses (n=2), OB (n=5), paediatrician (n=1), paramedics and ambulance technicians (n=10). Questionnaire of staff groups included in interviews (n=124) | Themes from Harris et al.:  
- For MWs working in a rural location required autonomous working without onsite specialist support. This necessitates the recruitments of experienced MWs who have confidence in their decision making and undertake additional training in obstetric emergencies.  
- Both GPs and MWs expressed a fear about things going wrong and having to manage emergencies without specialist support.  
- Risk assessment escalation can cause conflict between rural and urban practitioners, in terms of rural staff edging on the side of caution and staff at receiving units having a negative attitude when the problem either resolved itself or was not confirmed upon admission. This could lead to marginalisation of rural HPs.  
- Rural MWs felt there were negative perceptions of rural midwifery (in terms of not being state of the art or being deskilled) but rural MWs reported a higher degree of training and experience being necessary to practice in rural settings.  
- Rural MWs seeking refresher courses or access to a larger number of deliveries in larger hospitals felt alienated within these settings. However, one district general hospital was reported to offer an exchange programme for community-based MWs. This was reported to break down barriers between rural and urban practitioners. | • Lack of awareness about other HPs' roles  
• Rural-urban tension |
|              |                      |                       |                     | Additional themes from Tucker et al. | Maternity care team:  
- Rural professionals had to maintain a broad range of skills as generalists. Some GPs reported that as they did not undertake much in the way of obstetric training, intrapartum care in the community was increasingly undertaken by MWs.  
- Paramedics and ambulance staff felt they needed more practical experience in delivery units to deal with a possible increase in roadside deliveries due to increasingly centralised services.  
- Maternity care assistants were allocated a range a roles from supervision of wards to breastfeeding support.  
- Staff had positive attitudes to their teamwork and continuity of care they provided. | • Competence, confidence and decision making |
<table>
<thead>
<tr>
<th>Author &amp; Year</th>
<th>Aim and Study Design</th>
<th>Country and Workplace</th>
<th>Participant Details</th>
<th>Key Findings</th>
<th>Themes of barriers and facilitators</th>
</tr>
</thead>
</table>
| Caldow et al. (2011) | To explore the views of GPs on the skills and training required to deliver safe and appropriate local intrapartum services in remote and rural working. Mixed-methods: qualitative interviews which were followed-up with a questionnaire on the main themes identified. | UK. Remote and rural primary care settings. Maternity care provision inc. MW led units and GP/MW shared care or primary care/consultant shared care | Interviews: GPs (n=8) Questionnaires: GPs (n=14, including those taking part in the interviews). | - Majority of GPs felt that if only dealing with a small number of deliveries, you quickly become de-skilled.  
- GPs working in remote/rural settings felt the need to remain specialized in all aspects of maternity care was unique to remote/rural settings.  
- Several GPs reported feeling de-skilled and felt MWs had more skills in certain areas (e.g. neonatal resuscitation).  
- Majority of GPs reported that working in remote and rural areas necessitated confidence in decision making skills.  
- GPs felt there were recruitment issues as rural GPs needed such a wide range of skills and medical training is now insufficient in developing obstetric skills.  
- GPs who were keen to continue provide maternity services maintained skills through attending training courses or becoming a trainer or having short placements in urban hospitals.  
- Barriers to continuing education included lack of time, getting staff cover and distance to travel.  
- Many GPs felt multidisciplinary education/training was beneficial as it reflected the way HPs actually work. In addition it helped them become more aware of the roles of other HPs.  
- Majority of respondents had access to videoconferencing although it was not generally recognized as being useful. However, one respondent felt it could be useful for training and diagnostic support. | - Low volume of deliveries meaning less experience for GPs  
- Need for IPE  
- Under-utilisation of IT services |

Abbreviations: Interprofessional Education=IPE; PG = postgraduate; RN = registered nurse; antenatal care=ANC; postnatal care = PNC; MW=midwives; OB=consultant obstetrician; REG= obstetrics registrar; PHN=public health nurses; HP = health professional; PPP = post-partum psychosis; ToC=transition of care; CFH = child and family health
3.2.2.3 Grey Literature

The evaluation of the SWHMR which had been commissioned by NHS Quality Improvement Scotland was identified (Craig et al., 2010). This evaluation consisted of a literature review, an online consultation with healthcare professionals (n=129) and women’s representatives (n=6) and telephone interviews with 19 representatives of the midwife community, a GP, an anaesthetist, a paediatrician and an obstetrician. In addition five case review visits and logic modelling with members of the steering group were conducted. Finally responses from clinical governance managers and medical directors at eight NHS boards were collated.

The evaluation identified that most boards were using SWHMR except for neonatal records. However, the approach to use was not consistent with at least one maternity unit using a hospital information system to hold the data on the maternity summary record and another only using the labour and birth record for home deliveries. In addition the maternity summary was not always completed or updated. The main groups using SWHMR were midwives, obstetricians, anaesthetists and GPs, however, each group also uses their own documentation which results in data duplication. Data duplication could also happen with SWHMR and also between paper and electronic copies (NHS Lothian developed an e-SWHMR using Trak which replicates the majority of fields in the form). The use of six separate records was also criticised in terms of data duplication and failing to transfer information over at each hand-over care point. In addition, surgeons and theatre staff only used their own documentation. Other issues identified were the time taken for midwives to complete the documentation, the layout of the labour and birth record and the handling, purchasing and storage costs. The evaluation did not find definitive evidence that SWHMR helped improve quality and safety of care as an improvement in records does not necessarily translate to improvements in care.

However, positive aspects of SWHMR were also identified. A major benefit of SWHMR was the fact it was implemented across Scotland, thus making it easier for women to transfer between boards. In addition it helped with a standardised approach to provision of care. Women’s representatives also had a high level of satisfaction with SWHMR, however, they felt that specific groups of women (e.g. women with chaotic lifestyles, women with language difficulties, women with learning difficulties and women who do not wish their personal information accessible to others) could have difficulties using the records. Whilst, this evaluation (Craig et al., 2010) does show some benefits for staff and women, further development is needed in terms of reducing duplication and also further developing an electronic version of the SWHMR.

The other piece of grey literature identified was the RCOG and RCM (2014) toolkit on undermining behaviour. This toolkit was developed as an attempt to tackle bullying, harassment and undermining in maternity and gynaecology services. The toolkit suggests interventions that can be taken at four different levels:

- **Strategic interventions.** This includes actions taken by the wider NHS, the General Medical Council, the RCOG and the RCM. The toolkit suggests that intolerance of inappropriate behaviours needs to be clearly expressed by these institutions and management of poor behaviours should be conducted in an open arena (whilst maintaining the confidentiality of those directly involved).
- **Unit, trust and local education provider interventions.** This refers to actions that whole trusts or hospitals can implement and includes effective leadership which empowers staff to have zero tolerance of poor behaviour and dealing with individuals who engage in such behaviour, in a firm but fair and effective manner. Other specific actions can include: the creation of an anti-bullying charter/code of conduct; workplace equity offices; strategic anti-
undermining and anti-bullying groups/surveys; support for doctors in training; recruitment practices; and improving resilience.

- Departmental and team interventions. This refers to measures that individual teams within a hospital can implement. This can include actions such as identifying multiprofessional champions; creating a positive culture; clarity around expected attitudes and behaviours; use of critical/assertive language; encouraging open participation, collaboration and safety; use of positive and constructive feedback; introduction of concept of teaming; training and education initiatives for teams; undermining and harassment workshops; human factors training; emergency skills and drills training; resilience training within teams; and use of the VOICES mnemonic (see appendix 3).

- Individual interventions. This refers to advice for either victims or perpetrators of bullying and also staff managing individuals engaged in such behaviours.

A range of links to resources for each level of intervention are detailed in the toolkit. As the majority of these lack an evidence basis, further evaluation would be necessary to monitor their effectiveness.

4.0 Conclusions

This review first sought to identify key issues in interprofessional working through examination of the Morecombe Bay Investigation (Kirkup, 2015) and the MBRRACE-UK reports (Draper et al., 2015, Knight et al., 2014, Knight et al., 2015), as well as examining the views of women and their families through the NHS Scotland Maternity Survey (Cheyne et al., 2015) and the POPPY study (POPPY Steering Group, 2009). The Morecombe Bay Investigation, identified poor interprofessional working relationships between different groups of staff as being a major contributing factor. The MBRRACE-UK reports identified issues in lack of leadership for women with multiple care needs, poor information sharing (i.e. through medical records) leading to women receiving inconsistent information and staff being unaware of who is and should be involved in care. In addition, communication difficulties at the interface of different services (between primary and secondary care and also between different secondary care services) were also noted. This is particularly important in the context of risk escalation and de-escalation, whereby staff should feel supported in receiving advice from a senior colleague or a colleague in another discipline, about whether additional care for the woman is required. This starkly highlights the importance of effective interprofessional working. Both the review of NHS Scotland Maternity Services (Cheyne et al., 2015) and the POPPY Study identified that women were given inconsistent information from different staff, highlighting the need for consistent record keeping. One proposed solution to this is the SWHMR, which was evaluated by Craig et al. (2010). The evaluation sought the views of a small number of women, who all described high levels of satisfaction with the record. Whilst further development is needed in terms of reducing duplication for staff and obtaining the views of more women, this approach does show some promise in providing a standardised approach to organisation of care.

Secondly, the review aimed to identify evidence (in the form of systematic reviews or primary studies) on interventions/actions/strategies to improve interprofessional working and also barriers and facilitators to interprofessional working. One of the first conclusions of this review is lack of evidence in interprofessional working in maternity care services, in particular, working with other NHS services (e.g. social work, criminal justice system). Nevertheless, five non-systematic reviews, one systematic review and 25 primary studies were identified and can be used to help distil core principles. First, Heatley and Kruske (2011) provide the following definition of interprofessional
working: can be used to help conceptualise what it actually means when we talk about interprofessional working:

“Interprofessional collaboration is a reflexive and dynamic process that involves maternity care professionals from multiple professions working together with the woman to produce quality outcomes. Responsibility and accountability is shared in terms of appropriate level of involvement of a professional with the woman over the entire perinatal period. All involved trust, respect, understand and foster an approach to practice which utilises knowledge and expertise from the various professions as required by the woman” (p.56)

Heatley and Kruske’s (2011) definition can therefore be used to help conceptualise what it actually means when we talk about interprofessional working. In addition, following their review of the literature, suggest that following components as being characteristics of effective collaborative working:

- Contextual components
  - Clear and respected boundaries
  - Effective systems for conflict resolution
  - Opportunities for participation and for building cohesion
  - Acceptance of open and honest communication
  - Mutual trust
  - Acknowledgement of interdependence
  - Acceptance of shared responsibilities

- Influencing factors
  - Supportive organizational structure
  - Availability of resources (including time)
  - A history of collaboration
  - Positive individual attitude

On a more practical level, the three other systematic reviews and ten of the primary studies examined the interventions/actions/strategies for improving interprofessional working. These strategies included interprofessional education (IPE); hospital-based strategy to improve communication with primary care providers; collaborative model of midwifery group practice. IPE was the most commonly utilised strategy by six separate studies and detailed in one systematic review. IPE either took the form of pre- or post-qualifying education sessions or multidisciplinary emergency skills training. The evidence around multidisciplinary skills training showed some promise, however as there is no measurement of how this translates into actual outcomes for women and babies, further evaluation on this level is therefore necessary. The evidence around IPE pre- and post-qualifying is very limited in terms of the quality of the studies, however, generally the studies demonstrated positive effects on team working abilities. In particular, qualitative evidence around these studies indicated that this training gave participants a better understanding of their colleagues’ roles. This is important as it was identified as a barrier to good interprofessional working. However, again there is no evidence as to how this translates into clinical outcomes.

The non-IPE interventions were both conducted in Australia and consisted of a collaborative model of practice which demonstrated that both obstetric and midwifery staff were present at the majority
of consultations and also a hospital based communication strategy which reported some improvements in communication in terms of notification of birth outcome, blood test results, ultrasound, letter of enrolment, admission to hospital not for birth. Again, the lack of robust study design and lack of measurement on effect on mothers’ and babies’ outcomes, means that no conclusions can be drawn regarding the effectiveness of these approaches.

Due to the lack of good evidence on actions to improve interprofessional working, it is worth considering what staff perceive the barriers and facilitators to interprofessional working to be. Fifteen separate studies examined this across a range of countries. Whilst these qualitative studies may not all be directly comparable to maternity and neonatal services in Scotland, they were generally well conducted and did consistently identify the themes reported. Given the lack of robust evidence on strategies for enhancing interprofessional working identified by this review, we can instead distil some key principles to facilitate interprofessional working from the qualitative studies. Specifically, there needs to be opportunities for health professionals for different disciplines to regularly meet and discuss their clients together. In addition to providing collaborative care, this will also give health professionals a chance to understand each other’s roles and competencies, get to know one another and develop trust. This will enable collaborative working when the women is receiving care from multiple providers and should potentially improve referral and risk escalation and de-escalation processes. This can potentially be further facilitated by regular contact in the workplace (including informal settings such as coffee rooms) and also through IPE, including throughout undergraduate learning. Although this review did not identify a ‘gold standard’ for IPE this is something that can be developed utilising the principles of the Centre for the Advancement of Interprofessional Education (CAIPE) which are detailed in Appendix 2 for reference (Barr and Low, 2011). In addition, clearly defined policies/guidelines that are used by all healthcare professionals can help ensure consistency in practice. Finally, standardised approaches to improve communication, both in terms of records of women (whether women held or not) and babies (particularly at the interface of primary care and hospital care) and also when handing care over or in emergency situations (e.g. SBAR tool), could help make interprofessional working easier and reduce mistakes that may potentially lead to adverse outcomes. Further specific strategies for reducing bullying and harassment and thus improving interprofessional working are also detailed in the RCOG and RCM (2014) toolkit on undermining behaviours and may be worth further consideration in terms of piloting/evaluation.
Appendix 1 Search Strategies

**MEDLINE and HMIC.**


1. exp Midwifery/ or exp Maternal Health Services/

2. exp Midwifery services/

3. 1 or 2

4. exp Interprofessional communication/ or exp Interprofessional collaboration/ or exp Interprofessional relations/ or exp Interprofessional education/

5. meta-analysis/ or exp review literature/ or (meta-analy$ or meta analy$ or metaanaly$).tw. or meta analysis.pt.

6. exp Systematic reviews/

7. 5 or 6

8. (review academic or review literature or letter or review of reported cases or historical article or review multicase).pt.

9. 7 not 8

10. 3 and 4 and 9

**CINAHL**

Searched using EBSCO platform on 10/3/16. No. of records = 421.

S5 S3 AND S4

S4 (MH "Interprofessional Relations+)") OR (MH "Education, Interdisciplinary")

S3 S1 OR S2

S2 (MH "Maternal Health Services+")

S1 (MH "Midwifery+")# OR #MH "Nurse-Midwifery Service"# OR #MH "Midwifery Service+")#
Appendix 2 Principles of Interprofessional Education

The following principles are recommended by CAIPE for the consideration of those who are engaged in commissioning, designing, delivering and evaluating interprofessional education (Barr and Low, 2011).

**Values**

- Focuses on the needs of individuals, families and communities to improve their quality of care, health outcomes and wellbeing; Keeping best practice central throughout all teaching and learning
- Applies equal opportunities within and between the professions and all with whom they learn and work; Acknowledging but setting aside differences in power and status between professions
- Respects individuality, difference and diversity within and between the professions and all with whom they learn and work; Utilising distinctive contributions to learning and practice
- Sustains the identity and expertise of each profession; presenting each profession positively and distinctively
- Promotes parity between professions in the learning environment; Agreeing ‘ground rules’
- Instils interprofessional values and perspectives throughout uniprofessional and multiprofessional learning; Permeating means and ends for the professional learning in which it is embedded

**Process**

- Comprises a continuum of learning for education, health, managerial, medical, social care and other professions; Sequencing interprofessional learning progressively throughout pre-registration and post-experience studies
- Encourages student’ participation in planning, progressing and evaluating their learning; Including them with teachers and others in working groups
- Reviewing policy and practice critically from different perspectives; Subjecting policy and practice to critical analysis against experience and evidence
- Enables the professions to learn with, from and about each other to optimise exchange of experience and expertise; Facilitating interaction, exchange and co-reflection as they compare perceptions, values, roles, responsibilities, expertise and experience
- Deals in difference as it searches for common ground; Showcasing different yet mutually reinforcing roles and expertise in collaborative practice grounded in mutual understanding working towards shared objectives
- Integrates learning in college and the work place; Teachers and practice supervisors planning, delivering, assessing and evaluating classroom and practice-based learning together
- Synthesises theory and practice; Deriving theory from and applying it to practice
- Grounds teaching and learning in evidence; Citing findings from research including those in systematic reviews of process and outcomes from interprofessional learning
- Includes discrete and dedicated interprofessional sequences and placements; Building in dedicated interprofessional learning based on these principles
• Applies consistent assessment criteria and processes for all the participant professions; *summative assessment by the same means to the same standards*

• Carries credit towards professional qualifications; *Negotiating ways in which satisfactory fulfilment of interprofessional assignments meets requirements for professional awards*

• Involves service users and carers in teaching and learning; *Including them in planning, delivery, assessing and evaluating teaching*

**Outcomes**

• Engenders interprofessional capability; *Devising outcome-led learning delivering collaborative capabilities*

• Enhances practice within each profession; *Enabling each profession to improve its practice to complement that of others*

• Informs joint action to improve services and instigate change; *Applying critical analysis to collaborative practice*

• Improves outcomes for individuals, families and communities; *Responding more fully to their needs*

• Disseminates its experience; *Contributing to the advancement and mutual understanding in interprofessional learning in response to enquiries, at conferences and via the professional and interprofessional literature*

• Subjects developments to systematic evaluation and research; *Collecting data systematically to test against the requirements and expectations of stakeholders, funding, validating and regulatory bodies and to contribute to the evidence base*
Appendix 3 VOICES mnemonic

The VOICES mnemonic was developed in Dumfries and Galloway Hospital and stands for:

V – visible

O – open

I – improvement idea

C – care and compassion

E – ensure focus on patient experience, encourage and enable

S – safe culture
References


BARR, H. & LOW, H. 2011. Principles of Interprofessional Education. CAIPE.


POPPY STEERING GROUP 2009. Family-centred care in neonatal units. A summary of research results and recommendations from the POPPY project. London.


SHAW, B. 2013. Collaborative working within community maternity services—is this the chink in the armour? *British Midwifery*, 21, 285-291 7p.


