To investigate the benefits of Early Pregnancy Assessment Clinics as a midwifery/nursing led model of care for patients experiencing miscarriage or potential pregnancy loss

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Signed         Lisa Simonetti                  Dated 7/3/2014
Introduction and Acknowledgments

Introduction

The Winston Churchill Memorial Trust Fellowship for 2013 has enabled me to travel to Singapore, the United Kingdom, Canada & the United States of America to gain first hand experience in the services that are available to women who have early pregnancy problems and/or pregnancy loss/miscarriage. It has allowed me to observe the many Early Pregnancy Units across the world and the innovative, evidence-based and women-centred care that they are offering this group of women in a time of great emotional stress. It has allowed me to challenge the idea that the services we offer here is Australia have the potential to be better. The opportunity to meet with leading academics, clinicians and researchers in this field has inspired me with a new determination that we can make great change and provide women with a service to equal those around the world.

Acknowledgements

I sincerely wish to thank the Winston Churchill Memorial Trust of Australia for this once in a lifetime opportunity to immerse myself in personal learning and exploration in my chosen specialised field – not only does your organisation provide this wonderful experience but also the support provided along the way from your staff & mentors did not go unappreciated.

The opportunity to meet with and learn from the leaders in this profession who are dedicated to giving women in early pregnancy the best possible care – I wish to thank you personally for your time and for welcoming me into your organisations. I also wish to acknowledge the many staff from many diverse backgrounds (nurses/midwives, medical staff, ultrasonographers, nurse assistants, counselors) that all work tirelessly to bring these important services to women in all communities all over the world – it was a true pleasure to learn from you all. I also wish to thank the women and their families that allowed me to observe and interact with them during my time spent in each organisation.

This Churchill journey would not have been possible without the support of my colleagues at the Women’s & Children’s Hospital – the Women’s Assessment Service & Early Pregnancy Unit staff in particular. To my Clinical Services Coordinator, Jenny Wood and our Women’s & Babies Division management team for supporting me and allowing me the time away from the workplace. To my Fellowship referees, Dr. Dee McCormack and Jenny Wood, whose confidence in my abilities helped motivate me through the entire process.

Lastly, to my family and friends for all their love and support before, during and after this amazing experience – thank you all for your continued encouragement.
Executive Summary

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Objective:
To investigate the benefits of Early Pregnancy Assessment Clinics as a midwifery/nursing led model of care for patients experiencing miscarriage or potential pregnancy loss.

Highlights:
- Meeting with and spending time observing and learning from leaders in the specialised field of early pregnancy diagnostics and care. Visiting Early Pregnancy Assessment Units/Clinics throughout the United Kingdom and Canada & fertility/reproductive medicine clinics in the United States of America.
- Attending the Early Pregnancy Units Association annual conference in Leeds, United Kingdom. This allowed me the opportunity to meet and hear leading specialist in my field present current evidence-based research and information relating to the care of women with miscarriage and other early pregnancy problems. I was also lucky enough to attend a short course during the conference on Manual Vacuum Aspiration – a new treatment method for miscarriage (one not yet widely practiced in Australia)
- Given the opportunity to complete a 3-day intensive course in Basic Gynaecology and Early Pregnancy Ultrasound with the Centre for Ultrasound Studies in Bournemouth, UK – allowing me to expand on my pre-existing knowledge base and skills.

Conclusions:
Pregnancy is a significant event in a woman’s life and as many as 25% of women will experience bleeding in the 1st trimester of pregnancy and about half of these women will go on to experience a miscarriage. This is often a difficult time for women, who need to feel that their condition is a priority, when in reality these women can be left waiting in emergency departments for hours whilst waiting to see staff or for diagnostic results. Early pregnancy units that run as a separate outpatient service provides an opportunity for this niche group of women to present with early pregnancy problems and feel that their condition is a priority to staff. In Australia there is a growing availability of early pregnancy services in emergency departments, however, throughout the world, they are providing the same services in an outpatient setting designed to fast track women who do not require medical intervention. These units provide women with assessment, access to information and relevant follow up. These services have been proven to improve the quality of care to women and produce considerable savings in financial and staff resources. This model of early pregnancy care has been widely embraced throughout the United Kingdom & Canada and efforts need to be made to continue the gathering momentum of these services as a standard health care practice throughout Australia.
Program & Itinerary for Churchill Fellowship tour

Below is a listing of the places I chose to visit during my Churchill Fellowship tour and some details and highlights from each experience. Please see later parts of this report for details pertaining to recommendations and suggested practice changes, all of which were highlighted to me during my visits to these units/hospitals.

Singapore

KK Women’s & Children’s Hospital – Obstetric & Gynaecology (24hr) Clinic

Date of visit: 23rd & 24th of October 2013
Location: Singapore
Contact Persons: Nurse manager Vellasamy Palani & Dr. Ilka Tan

Visit details:
The KK Women’s & Children’s hospital was celebrating its 155 year anniversary during my 2 day visit & maternity service have been offered with the hospital since moving to their larger upgraded site in 1996. I was lucky enough to spend the majority of my time in the O&G (24hr) Clinic during my visit. As I discovered, much like Adelaide, the KK Hospital does not offer a stand only Early Pregnancy Assessment Unit (EPAU) and as such it was wonderful to gain insight into what services were offered to this specific group of women experiencing potential miscarriage or pregnancy loss.

As much as it was a pleasure to meet & learn from my fellow colleagues, I found it reassuring to know that our current service for these women at the Women’s & Children’s Hospital was much more personalised and it appears that our midwives work more collaboratively with medical staff to create a service with more counseling pathways and are given more autonomy and decision making when caring for these women.

I wish to thank Ms. Palani & her staff for being so welcoming, willing to share information & being so organised to receive me as their visitor.
United Kingdom

Homerton University Hospital (Early Pregnancy Unit and Acute Gynaecology Unit)

Date of visit: 29th of October 2013
Location: London, UK
Contact Person: Denise Brown (clinical nurse specialist & acting unit manager)

Visit Details
Homerton University Hospital opened its door in July 1986 and provides obstetric and neonatal care amongst their many services. They offer hospital & community care to the area of Hackney and the City of London (East). This was my first time visiting a stand-alone early pregnancy unit of this kind and as such was very excited to simply observe the day to day running of such a unit. It was wonderful to experience the autonomy these midwives are able to practice with and also the support their organisation gives them with their advanced learning & skills (such as ultrasound training).

As with most EPAU’s across the United Kingdom, Homerton offers their EPAU service to any woman with a referral from their general practitioner (GP), any accident & emergency department or self-referral from the woman herself. Homerton’s EPU service has been operating for approximately 15 years and is offered 5 days per week running from 8.30am to 8.00pm and open on weekends from 10.00am to 6.00pm. They will only see women who have a pre-booked appointment and as with many other units in the UK, Homerton Hospital also runs other concurrent clinics within the same area as the EPU (such as a recurrent miscarriage clinic, hyperemesis treatment unit & other gynaecology outpatient services).

University College Hospital (Early Pregnancy Clinic)

Date of visit: 4th & 5th November 2013
Location: London, UK
Contact Person: Mr. Davor Jurkovic (Consultant gynaecologist & and Director of Gynaecology Diagnostic and Outpatient Treatment Unit) and Ronke Agbela (nursing unit manager)
University College Hospital was officially opened in October 2005 and in November 2008 moved their obstetric & neonatal services to a newly built wing with the latest technology and facilities. This wing is where the Early Pregnancy Clinic (EPC) is situated. The EPC is a walk in service that operates every weekday from 9am to 4.30pm & offers a limited service on Saturday & Sunday. Three days within the week the EPC also runs a concurrent afternoon clinic that offers outpatient surgical management for miscarriage under local anaesthetic, a service not yet offered as a management choice for women in Australia but is widely available in the UK.

Mr. Jurkovic was kind enough to sit down with me and discuss the day-to-day operations of the unit. The unit functions differently to many of the other early pregnancy units in the U.K. and is a medically run unit versus being nursing led. He believes that the more experienced his clinicians are the more diagnostic & treatment based their care is able to be. His ideal management for failing pregnancies is always conservative expectant management as first line care plan.

King’s College Hospital (Early Pregnancy Unit)

Date of visit: 17th & 18th November 2013
Location: London, UK
Contact Person: Ms. Gemma Johns (Consultant gynaecologist) and Barbara Healey (nursing unit manager)

King’s College Hospital was one of London’s first foundation trust hospitals and prides itself on being one the largest and busiest teaching hospitals in London, primarily serving the boroughs of Lambeth, Southwark, Lewisham & Bromley. Their Early Pregnancy Unit is an outpatient clinic service that is offered Monday to Friday from 8.30a.m. to 6.00p.m. and sees approximately 100 patients per year. This unit was a true example of how a collaborative team of medical & nursing/midwifery staff are able to work together to provide a woman-centred, all-encompassing service to early pregnant clients.
Whittington Hospital (Early Pregnancy Diagnostic Unit)

Date of visit: 6th & 7th November 2013

Location: London, UK

Contact Person: Miss Kirsten Vogt (consultant gynaecologist) and Yvonne (nurse practitioner)

The Whittington Hospital was established in 2011, following the merger of 3 separate hospitals into one organisation that serves those living in North London. They provide approximately 500,000 people with general hospital, obstetric and neonatal services, as well as community service programs. The Early Pregnancy Diagnostic Unit has been operating since the hospitals inception and books approximately 15-25 appointments each day. They are open between the hours of 8.30a.m and 5.00p.m. Although this is one of the smaller units that I have visited throughout my tour, they are still able to provide a friendly service where women feel supported and informed throughout their entire visit. During my visit to this unit I was also able to better appreciate that with the appropriate support from medical and management staff, nurse practitioners such as Yvonne can practice safely and autonomously utilising skills in ultrasonography and formulation of patient management plans.
Good Hope Hospital (Early Pregnancy Assessment Unit)
Date of visit: 9th November 2013
Location: Birmingham, UK
Contact Person: Jacqui Rutter (Nursing Unit Manager)

Good Hope Hospital is an organisation serving the community in the Sutton Coldfield area of North Birmingham. Jacqui Rutter played a pivotal role in the inception and development of the Early Pregnancy Assessment Unit in 1995 (one of the first of its kind in the UK) and her role continues today. This Early Pregnancy Unit is completely midwifery led and offers appointments to women weekdays from 7a.m. to 7p.m. It was a pleasure to be able to meet with Jacqui and have detailed discussions relating to setting up an EPAU, some of the common challenges that the unit will face, how to overcome these and keep the unit functioning efficiently, with a woman-centred focus.

Liverpool Women’s Hospital (Early Pregnancy Assessment Unit)
Date of visit: 11th & 12th November 2013
Location: Liverpool, UK
Contact Person: Annmaria Hughes (Nursing Unit Manager) & Dr. Roy Farquharson (gynaecology consultant)

The Liverpool Women’s Hospital became part of the NHS Trust in 1992 & each year cares for approximately 30,000 patients from Liverpool & surrounding areas across the UK and has approximately 8000 births per year. The Early pregnancy Assessment Unit was established in 1996 and is entirely nurse-led (with consultant support when required). The EPAU sees approximately 25-30 women per day and their service is offered from 7.30a.m. to 4.00p.m every weekday and half day services available on Saturday & Sunday (seeing approximately 11 women on the weekend per day). Again, it was so refreshing to visit and observe a service where the nursing staff work with such autonomy but also very collaboratively with both medical staff and nursing assistants. These women show great confidence in their skills as they inform me that they have received thorough training and wonderful support from their colleagues, both nursing and medical. These nurses have a wonderful rapport with their women and provide continuity of care, which is founded on ensuring their women are well informed and educated about their choices.
Association of Early Pregnancy Units (AEPU) - Annual Conference

Date of visit: 14th & 15th November 2013
Location: Leeds, UK

The AEPU are an association and national advisory board that provides support and resources to both women & health care professionals relating to early pregnancy care. There are over 200 Early Pregnancy Units across the UK alone and usually involve a multidisciplinary team of medical staff, nurses, midwives, ultrasonographers and other support staff. As such, the AEPU endeavors to provide up to date resources, guidelines, education & training for those who care for this select group of women during early pregnancy. Each year the association holds their annual conference. This provides the opportunity for early pregnancy staff from the UK and the world stage to both attend & present new developments, best practice and innovative ideas relating to early pregnancy care.

This conference was one of many highlights of my Churchill Fellowship tour as it provided an opportunity for me to hear some of the most innovative and well-respected voices in early pregnancy care come together and share information that ultimately aims to improve the experiences of the patients we are caring for everyday.
Centre for Ultrasound Studies – Basic Gynaecology and Early Pregnancy Ultrasound Course

Date of visit: 18th & 19th November 2013
Location: Bournemouth, UK

During my fellowship tour, I was fortunate enough to attend a 2 day in depth ultrasound course which is designed to educate and train sexual and reproductive health clinical staff and EPAU staff in the safe and competent use of diagnostic ultrasound imaging in the visualisation and interpretation of basic gynaecology and early pregnancy problems.

After having completed a basic 2-day ultrasound course in Adelaide, Australia in 2011, it was so beneficial to be able to complete this more in depth course that was very specific to early pregnancy & basic gynaecology. It gave me a chance to consolidate skills with which I am already confident but also provided the opportunity to expand on and practice skills that were not covered in my last course (such as reporting findings, identifying early pregnancy problems/complications and basic gynaecology imaging). This truly was one of the highlights of the trip for me.

Canada

BC Women’s Hospital & Health Centre (Early Pregnancy Assessment Clinic)

Date of visit: 25th – 28th November 2013
Location: Vancouver, Canada
Contact Person: Dr. Stephanie Fisher (gynaecology consultant) & Nurses Paula, Annette & Leslie

In 1994, the BC Women’s Hospital opened its doors under the new management board of the British Columbian government, when several hospitals under their umbrella were amalgamated. It is the only facility in B.C. providing a comprehensive range of primary, secondary and tertiary services for women, newborns and their families. The Early Pregnancy Assessment Unit was commenced as an outpatient service in 2008 in conjunction with the Reproductive Medicine Program.

The EPAC service initially started with a small morning clinic 3 days per week but due to its success, it has now been expanded to all weekdays from 8a.m to 4p.m, with a future plan to extend the service into the weekend. Again it was refreshing to visit a unit that is completely nurse-led but also has such a wonderful collaborative relationship with medical staff. It is a service that puts the care and support of the clients at the forefront of their practice and decision-making.
United States of America

Reproductive Medicine Associates of New York

Date of visit: 2nd - 4th December 2013
Location: Manhattan, New York
Contact Person: Dr. Allan Copperman (Director of the Division of Reproductive Endocrinology and Infertility) and Dr. Frank Kwok (reproductive endocrinologist)

Reproductive Medicine Associates of New York (RMA of New York) is widely acknowledged as a national and international leader in state-of-the-art reproductive medicine, and is led by an integrated team of doctors and scientists with extensive reproductive endocrinology, fertility and urology experience and training. They also work collaboratively with a specialised support and counselling team (comprised of clinical psychologists, psychotherapists and support groups and also individuals in the community who have similar experiences to their current patients).

My time with RMA was predominately spent with the counselling and support team (at my request). The multidisciplinary team places great focus on dealing with individuals and couples that may often face emotional, family, work-related and/or personal challenges that can affect their lives in many ways. As such, as primary care givers, having this understanding we are better able to help patients make informed decisions and are able to manage their emotional experiences and relationships more productively.

I wish to thank all of the organisations throughout the United Kingdom, Canada & the United States of America and Singapore that welcomed me as a visitor into their units and were willing to share their information, time and skills. It was truly a wonderful learning experience and I look forward to taking all that I have learnt and applying it to our practice both at the Women’s & Children’s Hospital & hopefully one day throughout Australia.
Identified Benefits, learning and practice changes

Below are a collection of issues, new learning and areas for improvement that were highlighted to me throughout my Churchill Fellowship tour. It was through visiting the above institutions that sparked my desire to improve our knowledge & skills in these areas of our practice, in order to create the best early pregnancy care service for women both at the Women’s & Children’s Hospital in Adelaide, South Australia but indeed the entire country. Once these areas were highlighted, I was also very interested to explore the latest evidence based research & ensure our potential future practice has a firm research basis – and you will find much of this research also included below as part of my discussion.

1.0 – Service Opportunities

1.1 – Benefits and cost saving potential of a stand-alone/separate Early Pregnancy Unit

As many as 25% of women experience bleeding in the first & second trimester of pregnancy and approximately half of these women will have a miscarriage, or more rarely an ectopic or molar pregnancy loss (Thorstensen, 2000¹). This can be a difficult time for women because of the uncertainty of their outcomes, a lack of preventative measures and the emotional significance of an early pregnancy loss.

Currently in Australia, women in these situations find themselves having to present to an Accident & Emergency Department of a hospital (sometimes a maternity organisation, other times a general medical hospital depending on location). As a result, it is not unusual for patients to wait several hours for initial assessment and organisation of investigations, followed by a lengthy wait before final assessment by the medical staff in the unit (Bain, 2006²). Women surveyed about this current process have reported high levels of dissatisfaction with care when they believed that their bleeding was not considered important, feeling like they are not being given adequate information and time to discuss their feelings and that the significance of their loss was not acknowledged (Thorstensen, 2000).

As a result of the above, in the late 1990’s in the United Kingdom, the Royal College of Obstetricians & Gynaecologist’s (RCOG) introduced a guideline recommending the setting up of a dedicated Early Pregnancy Unit (EPU) in all maternity hospitals, separate to the Accident & Emergency Department (Bourne & Condous, 2006³). This unit is to be accessible by other hospital departments, general practitioners and by the women
themselves. This guideline stipulated that the facility should be run on a daily basis (during normal working hours as a minimum) and preferably run with staff that have specific knowledge and skills in this area of maternity/gynaecology care (RCOG, 2000). This was very evident in almost all of the units I was fortunate enough to visit during my Churchill tour.

Over the last decade, as these units in both the UK and Canada have developed, they have been proven to demonstrate improved quality of care to the patients, better patient satisfaction, considerable savings in financial and staff resources, reduce the pressures on the Accident & Emergency department staff and cost savings relating to some unnecessary hospital admissions (Bigrigg, 1991). There is also a great basis of evidence that nurses/midwives leading these units is also very beneficial. Thorstensen (2000) describes the qualities that characterise midwifery/nursing care, including providing complete information, encouraging informed decision making and being sensitive to women’s emotional state are of particular importance when caring for women in early pregnancy. And as such Bourne & Condous (2006) go on to say that in many cases an effective Early Pregnancy Unit can be entirely midwifery/nurse run, as it promotes continuity of care and may reduce the number of individuals the women encounter before a diagnosis is reached. It is important that the unit have a multidisciplinary team (including medical specialists, ultrasonographers when needed and counsellors), especially for cases that need more extensive management plans (i.e. ectopic pregnancies) (Bourne & Condous, 2006).

1.2 Combination of outpatient services

During my visits to the EPU’s in both the United Kingdom and Canada, it was noted that many of the Early Pregnancy Units also run concurrently with other related outpatient or ambulatory gynaecology services. More recently in the last 5 years, the concept of outpatient gynaecology and early pregnancy outpatient services have expanded in order to incorporate other important facets of early pregnancy care (Jones & Pearce, 2009). Some of the more common services I encountered are listed below. These services are staffed by multidisciplinary teams and included:

- **Hyperemesis treatment unit** – for those suffering from nausea & vomiting related to pregnancy, where by there is a metabolic disturbance causing weight loss, dehydration, alkalosis, hypokalemia & and altered nutritional state (Slager & Lavery, 2000). These women need to have a short stay admission for intravenous (IV) therapy and/or oral & IV antiemetic treatment.

- **Recurrent miscarriage/pregnancy loss clinic** – usually reserved for women who have experienced 2-3 miscarriages, this clinic is used to investigate and counsel these women &
to provide extra support when/if these women do become pregnant.

- **Surgical Management of miscarriage clinic** – this is a specific outpatient clinic that undertakes Manual Vacuum Aspiration under local anaesthetic; helping to reduce the need for women to be booked into an operating theatre for miscarriage treatment (this will be discussed in further detail later in this report).

Outpatient services such as these, run concurrently with an EPU can be very beneficial from a cost saving and hospital space saving perspective. It is also ideal for this specific group of women who can suffer great distress when being treated in the same space/location as those further along in pregnancy (such as an obstetric emergency department or antenatal clinic (Jones & Pearce, 2009).

2.0 - Practice findings and changes

2.1 – **Methods of treatment for miscarriage**

Miscarriage is a term that best begins with a basic explanation, as it is a term used very broadly not only by some medical professionals by also by the lay public. Perhaps a better terminology to use would be ‘early pregnancy complication &/or failure’ (Bourne & Condous, 2006). For the sake of this portion of the report I am not discussing ‘Threatened Miscarriage’ – which is the presence of bleeding or pain in early pregnancy but where the pregnancy continues as viable (Bourne & Condous, 2006). Here it is important for me to define the ‘types’ of miscarriage in order to discuss my practice findings for their treatment/management. Please see below a definition of the non-viable pregnancy miscarriage types to which I am referring:

- ‘Incomplete miscarriage’ – where bleeding & pain have occurred but clinically only partial products of conception have been passed,
- ‘Anembryonic pregnancy or blighted ovum miscarriage’ – where the uterus contains a gestational sac but no fetus or fetal pole has developed'
- ‘Early fetal demise or missed miscarriage’ – where all the normal structures of a pregnancy are present in the uterus but an absence of fetal cardiac activity is identified. (Definitions adapted from Bourne & Condous, 2006)

Over the last decade, there have been many developments in the treatment and management options available to women who have unfortunately experienced one of the above miscarriage types. There are many treatment options that have been integrated within practice in the UK & Canada that are still not offered as options for women in Australia, and it was with great eagerness that I wished to explore these options as part of my Churchill Fellowship travels.
2.1.1 Surgical management of Miscarriage

Surgical management of miscarriage at present in Australia involves having a dilation & curettage (D&C). This is a procedure performed under general anaesthetic and involves using a sharp metal curette to help evacuate the pregnancy products from the uterus and then using plastic cannula suction to remove these products (Bourne & Condous, 2006). This procedure has been the most common surgical treatment for miscarriage, however in the last 5-10 years, in the UK and Canada a new form of surgical treatment has emerged. This process of Manual Vacuum Aspiration (MVA) has been proven as a safe and effective new method and is becoming a popular choice for treatment in the countries where it is being offered (Bourne & Condous, 2006).

MVA differs from D&C as it is performed under local anaesthetic rather than a general, which is one of the reasons women are favouring this option above D&C. Women are given oral pain relief prior to the procedure and then local anaesthetic is administered into the cervix to numb the area – this is where the dilator & plastic cannula will be inserted. Once this area is numbed, the cervix is dilated & the plastic cannula is inserted into the cervix through to the uterus. Using a manual vacuum aspirator the products are suctioned through the cannula and into the aspirator chamber and safely removed from the uterus (please see Appendix 2 for images of equipment utilised for this procedure).

Currently this treatment method is not offered to women in Australia and so it was with great anticipation that I was able to attend a course that teaches the procedure to medical staff & Early Pregnancy Unit staff in the UK. I was also lucky enough to observe the procedure in real time at many of the hospitals I visited. The staff in these EPU’s both in the UK and Canada state that it is a well received choice option for women wanting to avoid ‘being put to sleep’ and a cost effective, resource-saving choice for the units and their respective hospitals, as this procedure is carried out in an outpatient setting, meaning less patients being booked onto theatre lists & less admissions to hospital (as these patients usually only require a 3-4 hour stay) (Blumenthal & Remsburg, 1994).

The majority of the EPU’s I visited offered the MVA procedure as a concurrent outpatient clinic that was run 2-3 afternoons per week, with patients arriving mid morning to be prepared and given all necessary medications, with the procedures
commencing in the early afternoon (usually 1pm). This allowed staff to run the Early Pregnancy Unit services in the morning and then to utilise the same space for the procedures in the afternoon – again providing a continuity of location for the women & often continuity of staff care (as women had previously met these staff members on the first and/or subsequent visits to the Early Pregnancy Unit).

2.1.2 Medical Management of Miscarriage

Medical management of miscarriage involves administration of drugs to assist with the passing of products of a pregnancy naturally, when it is found that a pregnancy is no longer viable (Jurkovic, 1998). I’m glad to say that currently in Australia we offer this course of treatment to women experiencing miscarriage. However, in order to choose this option, currently a woman must be admitted as an inpatient for a 1-3 day stay in hospital. Another interesting development in the UK & Canada is the administration of medical management to women as outpatients, requiring no hospital stay. This management option was implemented approximately 5-7 years ago – depending on which hospital unit you are visiting & is well supported as a valid, safe treatment option by the UK’s RCOG Green Top guidelines & NICE guidelines (NICE, 2012). It is very well noted that all of the units that I visited in my tour are not only offering this as a management choice but have been for at least 5 years, some much longer.

Studies have shown that inpatient medical management can be difficult to organise – it can depend on the availability of inpatient beds (preferable a single room to allow for better privacy) which can be a resource that is expensive and at times, scarce. Many studies and guidelines are suggesting that the alternative management option would be medical management in an outpatient setting (Bourne & Condous, 2006). Many recent studies in the UK have shown that this option has been well received by women, with some of the conveniences listed as: not being admitted to hospital and being away from other children, less time away from their workplace, experiencing this very difficult process in the privacy of their own home and being able to have partner/family with them (as opposed to being admitted to hospital and family not being allowed to stay with patient) (Farquharson & Stephenson, 2010).

2.1.3 Expectant Management of Miscarriage

When a woman is found to have a non-viable pregnancy, she has the option of choosing to have expectant management – meaning that no intervention, surgical or medication treatment is undertaken and time is allowed for the products of the
pregnancy to pass in their own time (usual time frame approx. 2-3 weeks - the body recognises that the pregnancy is not progressing, the pregnancy hormones in the body decrease and eventually the miscarriage process begins of its own accord).

I was happy to see that we at the Women’s & Children’s hospital and indeed, throughout Australia, are offering this non-invasive method of treatment. However, where I did find a difference in practice was when dealing with ectopic pregnancies. An ectopic pregnancy is when a fertilised ovum embeds itself somewhere outside of the uterus – most commonly within the fallopian tube and more rarely in the ovary, abdomen, a uterine scar (such as with a lower segment caesarean scar) or the cervix (Tiran, 2003).

Ectopic pregnancy is a serious diagnosis in early pregnancy that can, if not identified, can result in considerable morbidity or mortality. As such it is good practice for a woman to be closely monitored and for the necessary interventions to occur if she is suspected or confirmed to have an ectopic pregnancy (Indig, Warner & Saxon, 2011). Within Australia, when a diagnosis of an ectopic pregnancy is confirmed – there are usually 2 treatment methods – surgical management through laparoscopic surgery to remove the pregnancy & usually the fallopian tube within which it is contained (Bourne & Condous, 2006). The other form of treatment is medically managed with methotrexate, an oral or intramuscular cytotoxic medication, designed to stop the proliferation of cells (and therefore stops the new pregnancy cells from reproducing) (Bourne & Condous, 2006). Both of these methods can be highly invasive to the patient – as surgical recovery time is needed or from the side effects caused by the methotrexate.

However, recently in the UK (between 1992 & 2004), studies have shown that some patients (that meet specific criteria) can also choose to have expectant management safely (Bourne & Condous, 2006). It is a newer school of thought in the UK that not all ectopic pregnancies need intervention either in the form of surgery or medical management. This change in management has come about due to advances in high quality ultrasound, meaning that we are detecting ectopic pregnancy at a much earlier stage. And keeping in mind the percentage of woman who have a miscarriage in early pregnancy, it is fair to say that many of these pregnancies are destined to fail without our intervention (Kirk, Condous & Bourne, 2006). It is important to consider that there are very strict criteria that a woman must meet in order to have this as valid and safe treatment option (Bourne & Condous, 2006), but I believe that within Australia, as with the rest of the world, we have some of the finest medical and nursing/midwifery staff caring for patients, and it is within the realm of one day considering this as an option of management for the very near future.
2.2 – Use of Anti D immunoglobulin in early pregnancy

The use of anti D immunoglobulin is a routine anti D prophylactic blood product that is given routinely in the antenatal period to pregnant women who carry a rhesus negative blood group (e.g. A Negative, B negative blood type). The haematology on which this decision to give anti A immunoglobulin to pregnant women is complex and not entirely vital to understand for the purpose of this report. However, for those wishing for a more thorough explanation please use the following link to the NICE guideline for “Routine antenatal anti D prophylaxis for women who are rhesus D negative”:
www.publications.nice.org.uk/routine-antenatal-anti-d-prophylaxis-for-women-who-are-rhesus-d-negative-ta156.

The use on anti D immunoglobulin for women in pregnancy with a negative blood group is given prophylactically twice in pregnancy at 28 & 34 weeks gestation, as this is thought to be the most dangerous time that isoimmunization could occur if there is any fetal-maternal mixing of blood cells. However, anti D immunoglobulin is also given any time there is a sensitive event in pregnancy where feto-maternal haemorrhage is a possibility (NICE guideline, 2012). As such there is much debate and many varying guidelines across the world that stipulate the best practice for the administration of anti D immunoglobulin during the 1st trimester and early 2nd trimester of pregnancy and whether or not it is actually necessary.

It is a much debated issue as to whether there are enough fetal cells in a fetus when 1st trimester or early 2nd trimester bleeding occurs to cause Rhesus isoimmunisation to occur (and therefore a need to give anti D to protect against this). One study highlighted by Thorstensen (2000) suggests that 11% of women with a threatened miscarriage had fetal cells in maternal circulation, therefore, suggesting strong evidence towards administering the anti D. However, in 2012 the NICE guidelines issued their findings (evidence based) to suggest that the isoimmunisation risk in 1st trimester pregnancy is so negligent that anti D is not required for the first 12 weeks gestation unless the patient is receiving surgical management for a miscarriage (NICE guidelines, 2012). At present, throughout South Australia & indeed the entire country, it is common practice to still give anti D, despite some of the more recent findings. See the South Australian Perinatal Practice Guidelines for more details on our current policy guidelines (http://www.sahealth.sa.gov.au/wps/wcm/connect/Public+Content/SA+Health+Internet/Clinical+resources/Clinical+topics/Perinatal+practice+guidelines/)

My study tour did not determine which governing body is correct with their guidelines but if anything, best highlighted the inconsistencies in practice that we are faced with when dealing with early pregnancy issues all around the world and that further study and research is needed in this area of care.
3.0 – Education

3.1 – Terminology/Nomenclature usage surrounding miscarriage

Statistics tell us that 25% of women in pregnancy will present to a health service (hospital or EPAU) with varying degrees of bleeding or pain and a potential for miscarriage (Indig, Warner & Saxton, 2011). It is important to remember that within an Early Pregnancy Unit, you will be working in an extremely sensitive area with couples who, in the event of a potential or actual pregnancy loss, are likely to be extremely distressed and emotional (Condous & Bourne, 2009). As such it is so vital to ensure sensitivity in the language that is used when providing care to these women and their families (Thorstensen, 2000). Within the realms of early pregnancy there is no agreed glossary of terms or consensus regarding terminology that is used. After meeting with Dr. Roy Farquharson (at the Liverpool Women’s Hospital) and after reading some of his work, it became apparent that throughout the world, and indeed in Australia, we are using particularly old and poorly descriptive terms, which can cause confusion and distress for some of our patients (Farquharson, Jauniaux & Exalto, 2005).

During my visit to the Liverpool Women’s Hospital it became evident that Dr. Farquharson and his staff have accepted that modern terminology should reflect daily clinical practice and as such, the terminology and descriptions used both verbally with patients and in their information pamphlets has changed over the last decade to become as patient-centred as possible (Farquharson, Jauniaux & Exalto, 2005). It is evident that the word ‘abortion’ for example was and still is a very widely used word when describing not only a voluntary termination of pregnancy but also when describing many types of spontaneous miscarriage. Women who do not understand that the term can be used so broadly may become quite emotional or distressed with the confusing use of the term ‘abortion’. Attached in Appendix 3 is a glossary of terms that contains words that should be avoided and other terminology that might be a preferential replacement (Farquharson, Jauniaux & Exalto, 2005).

Another motivation for changing the nomenclature for describing early pregnancy events relates to standardising terminology to ensure accurate clinical assessment and diagnosis. With the growing popularity and establishment of EPAU’s, it becomes more imperative that a standardised diagnostic classification system be employed. This is to ensure accurate and reproducible reporting of ultrasound findings, describing clinical outcomes and for formation of accurate information pamphlets for patients. This standardisation will also ensure that direct comparisons between units can be readily understandable for both research and audit purposes (Farquharson, Jauniaux & Exalto, 2005).
3.2 - Use of ultrasound as a diagnostic tool within the Early Pregnancy Unit

This topic is one that I carry very close to my heart and one that I placed great emphasis on during my Churchill experience. The reason for this is, that at present, there are very few frameworks and guidelines allowing midwives/nurses to use limited ultrasonography in Australia and as such, we in the Early Pregnancy Unit at the Women’s & Children’s Hospital are working tirelessly to ensure that this is not a skill that is taken out of our scope of practice.

The use of ultrasonography has been utilised in medicine and health sciences since the early 1940’s and traditionally has always been performed collaboratively by both physicians & sonographers (Coffin, Cyr, Hall, Persutte, Roberts, Spitz & Waggoner, 2000). Ultrasonography is seen as the cornerstone in the diagnosis of early pregnancy problems and as such, the availability of ultrasound & sonography in the emergency gynaecology setting (such as an Early Pregnancy Unit) is considered to be essential (Bourne & Condous, 2009). It is also important to note that ultrasonographic skills are imperative for all practitioners assuming triage responsibilities, because basic sonography can provide immediate information in situations that might otherwise experience a delay in treatment (Menihan, 2000). It has recently led to changes in management plans & a reduction in the number of admissions & outpatient referrals for both pregnant & non-pregnant women. Therefore it is thought that the use of ultrasound has improved the efficiency in diagnosis and the cost effectiveness of running an Early Pregnancy Unit (Haider, Condous, Khalid, Kirk, Mukri, Van Calster, Timmerman & Bourne, 2006).

3.2.1 – The role of the midwife or nurse using ultrasound in an EPU

Many feel that in the last decade non-physician practitioners or allied health professionals have taken on a scope of practice that strongly overlaps with those in the medical and ultrasonography fields (Coffin, Cyr, Hall, Persutte, Roberts, Spitz & Waggoner, 2000). Nurses & midwives who work within the early pregnancy care setting are proven to have extended their scope of practice and in turn, as technology and their skill set improves, these nurses/midwives will continue to expand their clinical skills into advanced practice areas, such as sonography (Menihan, 2000). This was indeed evident in all the Early Pregnancy Units that I visited as part of my Churchill tour and it is my hope that the scope of practice for the midwives working within our Early Pregnancy Unit at the Women’s & Children’s Hospital & throughout Australia will be allowed to continue to develop our skills in this area.

Throughout my travel experience and through observation it became very clear to me that nurses/midwives are in an ideal position to perform ultrasound evaluations. Assessment, communication, education and emotional support are essential.
components of nursing/midwifery care. During the performance of the ultrasound examination, the nurse/midwife is able to assess how the woman is coping, provide education and support, review the results, explain the implications of the findings and discuss any necessary follow up (Carr, 2011).

3.2.2 – Transvaginal ultrasound versus transabdominal ultrasound

When performing an ultrasound, the sonographer has the choice between using 2 separate transducer probes – both beneficial for use in different clinical situations or to obtain certain clinical images. In early pregnancy, the transabdominal probe can be used on the abdomen and is valuable when wanting a wider field of view of the abdominal structures. This allows you to cover a wider area of the abdomen but operates at a lower frequency and therefore allows deeper penetration but less clarity of images (Gotting, 2009). The transvaginal probe is used via the vagina – it operates at a higher frequency and therefore the resolution of the images is far superior (Gotting, 2009).

Again this was an area of great focus for me during my tour, as at present in the Early Pregnancy Unit at the Women’s & Children’s Hospital we are currently in consultation with a multidisciplinary team in relation to whether we, as midwives, are allowed to offer transvaginal ultrasound during our consultations. I was interested to observe current practices in the nursing/midwifery led EPU’s and what the current UK & Canadian guidelines are for best evidence based practice.

Diagnostic ultrasound currently has four primary clinical areas of application – radiology, cardiology, obstetrics & gynaecology and vascular diagnostics – of these, obstetric & gynaecology imaging captures approximately 15% of the worldwide market (Coffin, Cyr, Hall, Persutte, Roberts, Spitz & Waggoner, 2000). Currently the RCOG green top guidelines, the NICE guidelines & clinical guidelines in early pregnancy ultrasound by the Institute of Obstetricians & Gynaecologists of Ireland all agree that sonographers should be trained in both transabdominal and transvaginal ultrasound, as both are considered complimentary to each other (Royal College of Physicians of Ireland, 2010). In my experience, there seemed to be a general consensus amongst all the early pregnancy units I visited that transvaginal ultrasound is far superior when dealing with early pregnancy diagnosis. Not only does transvaginal ultrasound give far superior images in order to confirm viability and gestation but also, most importantly, it confirms the location of the pregnancy (Bourne & Condous, 2006).

Many studies, such as that by Nari, Setchell & Chard (1990) have demonstrated that if the location and/or viability of a pregnancy is unknown, transvaginal ultrasound is a safe and relatively non-invasive way to quickly diagnose and reassure both the woman...
and the clinician. If fact another study went on to say that of 6621 patients, 91.2% of these patients had their pregnancy location confirmed with transvaginal ultrasound in an Early Pregnancy Unit setting, when initially 45.2% of these women were thought to have an ectopic pregnancy and did not (Condous, Okaro, Khalid, Lu, Van Huffel & Bourne, 2005). As such showed cost effectiveness and time saving benefits – as these women did not need to wait for a formal ultrasound in the ultrasound department, be unnecessarily admitted or undergo any surgical investigations.

3.2.3 – Advanced education & training for midwives/nurses using ultrasound technology

From my tour experience, without a doubt, it is imperative to note that when incorporating ultrasound into clinical practice, appropriate training, credentialing, consultation, collaboration and a referral for abnormal findings must be established and incorporated into nursing/midwifery practice guidelines (American College of Nurse-Midwives, 2009). It is recommended by most of the ultrasonography governing bodies around the world, that at the very least, before a midwife/nurse can incorporate ultrasonography into their clinical practice, they should have completed a short ultrasound course that is approved by the ultrasonography governing bodies (this course should also include some form of examination or accreditation process post the course completion). I was lucky enough that as part of my Churchill Fellowship tour I was able to complete one of these 3-day courses approved by the Faculty of Sexual Health and Reproductive Healthcare of the Royal College of Obstetricians & Gynaecologists and accredited by the College of Radiographers (COR). Since my return I am now working towards the practical accreditation & examination.

It is the recommendation of some of the world’s governing ultrasonography bodies that a 12 to 18 month full time (or equivalent) course be completed by health professionals who are wanting to incorporate ultrasound into their clinical practice. This course is usually a post-graduate university course involving theoretical knowledge & a clinical experience placement. At the completion of this placement a 2 part (written & practical) objective structured clinical examination (OSCE) should also be completed. In the UK & Canada, early pregnancy unit nursing/midwifery staff are encouraged and supported by their workplaces to complete this further study. It is my hope that one day in Australia we will be supported in this way, to encourage our advanced practice skills.

3.2.4 – Collaboration of multidisciplinary staff utilising ultrasonography within the early pregnancy setting
The use of ultrasound in early pregnancy diagnosis is very much a collaborative effort between nursing/midwifery staff, medical staff, ultrasonographers and radiologists. From the perspective of adding ultrasonography to the nurse/midwife’s scope of practice, it is critical that nursing/midwifery staff know their limitations & know when to further refer a patient to other health care specialists (Berg, Chang, Callaghan & Whitehead, 2003). It is imperative that the relationship between midwives/nurses and the sonographic specialists is particularly strong and understanding. Some professionals are of the opinion that sonography should only be done by sonographic professionals, however as technology & scope of practice changes, many are amenable to aiding other clinicians in obtaining the necessary clinical skills (Menihan, 2000).

It is important that sonographic staff have confidence in the skills being practiced by midwifery/nursing staff and if not, working collaboratively on education, clinical placement experience and creating not only a good dialogue about concerns but work together to formulate guidelines and practice frameworks with each other. I look forward to being able to do this with our experienced ultrasonography & radiology team at the Women’s & Children’s Hospital, as we are not intended to be a substitute for, but a supplement to this very experienced staff group (Coffin, Cyr, Hall, Persutte, Roberts, Spitz & Waggoner, 2000).

**4.0 – Consumer Information & Support**

**4.1 – Disseminating information about the Early Pregnancy Unit service to the community**

From the experienced gained visiting many early pregnancy units, mainly in the United Kingdom, I observed how important it can be to foster a good relationship with an early pregnancy unit & the local general practitioner (GP) services out in the community. For most women in the UK, their primary source of health care & related information comes from their local area GP (Bain, 2006). It is essential to understand that early pregnancy units were developed primarily in response to a service need, one that recognised that an increasing number of women with early pregnancy related issues had no specific clinic dedicated to their care alone – and this was noted not only by Accident and Emergency & other hospital departments but, even more importantly by community GP’s (Bain, 2006). In Australia, the concept of early pregnancy units is a relatively new one, and as such most women being referred from their community GP’s are being sent to hospital emergency departments. Now that I have returned from seeing this community & EPU relationship, I feel it is vital to touch base with community GP’s alerting them to this service that caters to a more niche group of women. I believe it is important not only to touch base but to have an introduction letter to the service & an information brochure that can be made available to the GP’s to hand out to the women they are referring.
It is also vital that this relationship works in reverse. If a patient is seen within the early pregnancy unit, as demonstrated by all the early pregnancy units I visited, it is central to the communication relationship that information, usually in the form of a discharge letter, is provided to the patient or sent directly to the referring GP or to be given to those responsible for the future care of the pregnancy.

4.2 – Counselling support and follow up of the patient’s mental well being post a miscarriage

Pregnancy is a significant event in a woman’s life, and attachment to the pregnancy and baby may begin early in the first trimester (Thorstensen, 2000). When bleeding occurs, women know that their pregnancy is at risk and for many it is a difficult and vulnerable time. If an early pregnancy loss occurs, for some the grief can be as intense and complex as for any perinatal or other major loss (Brier, 2008\textsuperscript{28}). As such it is critical to ensure that these women have sufficient couselling & follow up support offered to them. It is suggested that 2 weeks post experiencing a miscarriage, women be given for the opportunity to have a follow up visit or phone call (Thorstensen, 2000). This follow up appointment should include time to focus on the physical aspect post miscarriage (i.e. has the bleeding & pain settled) but more importantly, this time should be spent investigating and discussing how the woman and/or her family are feeling about the situation emotionally (Thorstensen, 2000). Women are often surprised at the intensity of their feelings and discussing this with the woman can help to normalise these feelings. At this time it is also vital to review the possible causes of the miscarriage and/or misconceptions to the causes, as at the time the miscarriage diagnosis was made, the woman may not have clearly heard or understood due to the distress experienced (Thorstensen, 2000).

I was fortunate enough to not only visit early pregnancy units to observe the excellent level of care, couselling and follow up in the UK and Canada, but was also able to spend several days with a fertility clinic in New York. My main focus here was to observe how their counseling & support team were able to foster a great relationship of trust with their clients. This ensured better understanding of information, better-informed choices and allowing the client to feel supported during a challenging and stressful time. Unfortunately at present, the Early Pregnancy Unit at the Women’s & Children’s Hospital does not have the staffing or time capacity to offer this as part of our service. At present the Early Pregnancy Unit is run within the women’s emergency department (the Women’s Assessment Service) and as such, during their shifts the midwives/nurses that staff the Early Pregnancy Unit also work as part of the Women’s Assessment team. This leaves staff with limited times for Early Pregnancy Unit appointments and unable to perform follow up of any kind. It is my hope that in the future the service will run as a separate unit and will incorporate these extra, vital services.
4.3 – Written information for women and their families

To follow on from the above, in situations of stress and/or grief, women and their families may not always absorb important information relating to their early pregnancy problems or miscarriage. It is due to this that early pregnancy units should always ensure that they are able to provide written information that the women and their families may take away and have time to absorb (Thorstensen, 2000). During my tour, it became very evident that there is a need for up-to-date written handouts that shares a consistency of information and language with clear communication that is in easy-to-understand English (Royal College of Physicians of Ireland, 2010). The information pamphlets that I collected whilst on my tour contained information that provided specific guidelines for what to expect physically and emotionally based on the outcomes, the required follow up that needed to be attended, frequently asked questions and contained contact telephone numbers, should the women require any further support or advice (Thorstensen, 2000). After returning home and surveying the pamphlets we have on offer in our Early Pregnancy Unit, it was reassuring to see we use many of the pamphlets that are suggested by the Royal College of Ireland (2010), but are missing some key written information or the existing ones have not been edited for quite some time so as to ensure they contain up-to-date terminology & current evidence based information.

The RCOG & Royal College of Physicians of Ireland have listed some of the more common written information that should be available to women & their families. These include:

- Information specific to each early pregnancy unit and the services they offer
- What is threatened miscarriage
- What is pregnancy of unknown location / an inconclusive ultrasound result
- Pregnancy loss – what happens now?
- Conservative/Expectant management of miscarriage
- Surgical management of miscarriage
- Medical management of miscarriage
- What you need to know after a miscarriage / Frequently asked questions
- Ectopic pregnancy
- Supports and grief counselling for women and/or partners who experience miscarriage

4.4. – Procedural consents obtained by nurses/midwives

By most standards and guidelines around the world, it is within the role of the midwife/nurse to always obtain informed consent from your patient before any procedure takes place. However, in the last 5 – 10 years, nurses/midwives who work in the early pregnancy care setting have taken this one step further in their skill set and are now obtaining procedural consents that in the past
have been completed by medical staff. It is thought that since the nurse/midwife has created a relationship with these women, the informed consent is best obtained by these staff members who are familiar with the patient’s medical situation and history. From my experience in Canada & in the UK, these nurses and midwives have limited procedures for which they are able to gain consent (mainly involving surgical and medical management of miscarriage) and have received specific training to fully explain all facets of the procedures and their associated risks. As with all procedural consent, the nurse/midwives still need to follow the basic principles set out by the Nursing and Midwifery Council. Nurses and midwives have three over-riding professional responsibilities with regard to obtaining consent:
   - To make the care of people their first concern and ensure they gain consent before they begin any treatment of care
   - Ensure that the process of establishing consent is rigorous, transparent and demonstrates a clear level of professional accountability
   - Accurately recording all discussions and decisions relating to obtaining consent
(Nursing and Midwifery Council, 2012)

5.0 – Equipment and Tools for practice

5.1 – Ultrasound equipment

It is imperative that if utilising ultrasound technology in the early pregnancy setting, the ultrasound machine should be of excellent quality, no more than 5-7 years old and should be regularly maintained, serviced and checked for safety, with records of maintenance and service easily accessible (Royal College of Physicians of Ireland, 2010). A high quality portable machine can also be a worthwhile investment, as it can be easily transported to the patient bedside (Jones & Pearce, 2009). It was reassuring to note that the Early Pregnancy Unit at the Women’s & Children’s is currently following the above guidelines.

5.1 – Cleaning of the ultrasound diagnostic probes

The risk of transmitting infections of instruments and equipment is related to the presence and burden of infectious agents, the type of procedure and the body site where the instrument is being used (ASUM, 2013). Instruments that come into contact with intact non-sterile mucosa (or non-intact skin) are considered semi-critical instruments. Semi-critical instruments should preferably be sterile or must be a minimum of high level disinfected, after each use. High level disinfection is necessary, even when a single use disposable probe cover is used routinely, due to the possible rupture or breeching of the transducer cover which could lead to contamination of the transducer (ASUM, 2013).

It is vital that any institution that utilises ultrasound technology ensure that the probes are disinfected after each patient use. The transabdominal probe is considered as a
non-critical instrument as it is only used on the skin of the abdomen. As such, it should be wiped with an antibacterial agent/wipe post use. The transvaginal probe proves to be more complex as it is classified as a semi-critical instrument and as such needs to preferably be sterile or at a high level of disinfection prior to each use (ASUM, 2013). For approximately a decade, since 1999, it was the norm for the transvaginal probe to the disinfected and sterilised with an enzymatic based soaking detergent. This method is a very effective enzyme based pre-soak & cleaner proven to effectively remove organic soil from contaminated endoscopic instruments and other medical devices (Advanced Sterilisation Products, 2014).

Approximately five years ago, a new chemical technology was introduced to the Australian market and is a chlorine dioxide based wipe system. It was well received in the UK, Canada & the USA but the Australian market, despite showing a great deal of interest, have been reluctant to adopt this new cleaning method. Many of the guidelines issued by the Australian healthcare infection control governing boards (such as HICMR) are reluctant to adopt this as a valid disinfecting cleaning method. Understandably, these governing bodies still classify the transvaginal probe within the same category as other medical/surgical instruments (such as an endoscope).

However, I broached this issue with many of the early pregnancy unit co-ordinators who clearly pointed out that a transvaginal probe, whilst needing a high-level disinfection process as is a semi-critical medical device, is a non-lumened device that is a closed unit device (meaning no open chambers needing to be flushed). As such, there have been many recent studies over the last few years both in the UK & USA that have proved that a chlorine dioxide wipe system (such as the Tristel Wipes System) is an efficacious and safe system (Meridis, Talmor, Turner, Lavery and Trew, 2006). Furthermore the new technique has been found to be faster, easier to use and much more cost effective (Meridis, Talmor, Turner, Lavery and Trew, 2006). Similarly, many of the governing bodies, including those in Australia, such as ASUM, GENCA & GESA, have all either changed their policy guidelines or issued statements to ensure that relevant medical health care professionals are aware that chlorine dioxide wipe cleaning systems are a recognised method of high level disinfection (ASUM, 2012). Also please refer to Appendix 4 for a table of the costs involved with both the enzyme based cleaning system & the chlorine dioxide based cleaning system which demonstrates the cost saving nature of this new chemical cleaning system.
Conclusions & Recommendations

6.0 – Fellowship Conclusions

My Churchill Fellowship for 2013 took me on a journey through four countries, many diverse health care systems and across a very broad range of experiences in many Early Pregnancy Units around the world. In Australia, it is reassuring to know that there is a growing availability of early pregnancy services in emergency departments, however I believe that, like our UK & Canadian colleagues, we can go further and create outpatient services, such as early pregnancy units that are designed to fast track the care of these women, to improve their quality of care and provide them with sensitive and timely support. As commendable as it is that we at the women’s & Children’s Hospital and some of our colleagues around Australia are working towards providing these services to women, we still have a long way to go to offering a complete service that demonstrates evidence based practices, cost effectiveness & ultimately, provides women centred care. Throughout my Churchill Fellowship travel tour, I was able to achieve several aims that I had set for myself:

- Gain first hand experience and insights into the practical implementation of services relating to early pregnancy and experience the vast array of other services that can be run concurrently with an early pregnancy unit.

- Learn how new research and evidence impacts on the guidelines and policies used and how this affects the care of early pregnant women. It also allowed me to compare our current early pregnancy services in Australia and what potential changes can be made to improve them.

- Establish relationships with leading clinicians and researchers within the area of early pregnancy care in order to have a continued source of support and education whilst we further develop our services in Australia.

It was reassuring to discover that most of the challenges we in Australia are facing were experienced by our overseas colleagues in the early stages of setting up such a service. It was evident that every service has challenges to balance staffing levels, equipment and facility resources and health system guidelines and regulations. There is also much to be learnt from a collaborative development and sharing of evidence-based resources, research networks and service guidelines from countries with well established protocols and procedures.

This was a career changing experience and the next challenge to face is improving our Australian services, to ensure that we continue to deliver the high level standards of care that Australia is renowned for.
6.1 - **Recommendations for improvements I could implement upon my return**

Within my working environment and with my team/colleagues I plan to:

- Undertake an audit of our current service, which will also include consumer feedback from the women and suggestions for improvements to the service.
- Explore the possibility of extending my skills with a more in-depth ultrasound course.
- With my team, attempt to further develop our easy-to-use and evidence based practice standards and protocols to better reflect current research findings. This also holds an opportunity to improve and/or consolidate the standardised forms used to record patient information, diagnostic images and discharge letters and other templates.
- To create, improve and/or re-write the information pamphlets available to women who utilise our service.
- Liaise with our current multidisciplinary team of medical staff, nursing/midwifery staff, ultrasound department staff and those in the leadership / administrative roles with the possibility of reading my findings and creating a dialogue to better improve our Early Pregnancy Unit.

6.2 – **Broader recommendations for improvements within Australia.**

It is important to recognize that each health care system and clinical setting is diverse and faced with resourcing challenges in relation to new/emerging patient services and as such I have tried to ensure my recommendations are broad to include all clinical settings.

- The most obvious recommendation is to continue the success and development of the existing early pregnancy units within Australia but also have support from local, state & national government to promote this as a positive service change occurring in our country and encourage all of our centres of health care excellence to open an early pregnancy outpatient clinic.

- It would be beneficial for Australia to develop the capacity for a national body/association (such as the Association of Early Pregnancy Units in the UK) to foster communication, sharing for resources and knowledge and also be an accurate sources of information for women in the community to access. As part of this organisation, it would be valuable to have a website developed & a yearly meeting/conference to foster relationships not only with Australian leaders in this field but also with fellow colleagues from around the world.
References


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26 American College of Nurse-Midwives, 2009, ‘Midwives’ Performance of Ultrasound in Clinical Practice – Positional Statement”, American College of Nurse-Midwives, Silver Spring, USA.


30 Australasian Society for Ultrasound in Medicine (ASUM), 2013, ‘Statement on the disinfection of transducers – Policy and statement B2, NSW, Australia  

31 Advanced Sterilisation Products (ASP), 2014, Cidex Product Information,  


Appendices
Appendix One – Study Tour Maps

Places visited in England highlighted
Places visited in Canada highlighted

Madison Avenue, Manhattan, NEW YORK
Appendix Two – Manual Vacuum Aspiration Equipment

- **Aspiration Chamber Syringe**

- **Manual dilators (various sizes)**

- **Suction catheters (various sizes)**
## Appendix Three – Suggested glossary of terms

### Table 1. Glossary of terms and early pregnancy events

<table>
<thead>
<tr>
<th>Term</th>
<th>Preferred Term</th>
<th>Ultrasound Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egg</td>
<td>Oocyte</td>
<td>Ultrasound-based definition to include fetal heart activity and/or crown-rump length &gt;10 mm</td>
</tr>
<tr>
<td>Embryo</td>
<td>Fetus</td>
<td></td>
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<tr>
<td>Embryonic age</td>
<td>Gestational age based on last menstrual period and/or ultrasound fetal measurement</td>
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<td>Postovulatory age</td>
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<tr>
<td>Conceptual age</td>
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<tr>
<td>Menstrual age</td>
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<tr>
<td>Therapeutic abortion</td>
<td>Threatened miscarriage</td>
<td></td>
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<tr>
<td>Spontaneous abortion</td>
<td>Spontaneous miscarriage</td>
<td></td>
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<tr>
<td>Medical abortion</td>
<td>Termination of pregnancy</td>
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<tr>
<td>Legal abortion</td>
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<tr>
<td>Recurrent abortion</td>
<td>Recurrent miscarriage consisting of 3 early consecutive losses or 2 late pregnancy losses</td>
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<tr>
<td>Maternal abortion</td>
<td></td>
<td></td>
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<tr>
<td>Prematurity</td>
<td>Serum/urine level of HCG</td>
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<tr>
<td>Preclinical embryo loss</td>
<td>Biochemical pregnancy loss with description of falling low positive serum/urine HCG</td>
<td></td>
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<tr>
<td>Trophoblast regression</td>
<td>Biochemical pregnancy loss</td>
<td></td>
</tr>
<tr>
<td>Menstrual abortion/preclinical abortion</td>
<td></td>
<td>Pregnancy not located on scan</td>
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<tr>
<td>Early embryonic demise</td>
<td>Empty sac</td>
<td>Gestation sac with absent structures or minimal embryonic debris without heart rate activity</td>
</tr>
<tr>
<td>Anembryonic pregnancy</td>
<td></td>
<td>Previous identification of crown–rump length and fetal heart activity followed by loss of heart activity</td>
</tr>
<tr>
<td>Embryonic death</td>
<td>Fetal loss</td>
<td>Ultrasonic definition of intrauterine pregnancy with reproducible evidence of lost fetal heart activity and/or failure of increased crown-rump length over one week, or persisting presence of empty sac, at less than 12 weeks gestation.</td>
</tr>
<tr>
<td>Early abortion</td>
<td>Early pregnancy loss</td>
<td>Same as for early pregnancy loss (see above)</td>
</tr>
<tr>
<td>Missed abortion</td>
<td>Delayed miscarriage</td>
<td>As for early pregnancy loss (see above)</td>
</tr>
<tr>
<td>Late abortion</td>
<td>Late pregnancy loss</td>
<td>After 12 weeks gestational age where fetal measurement was followed by loss of fetal heart activity</td>
</tr>
<tr>
<td>Hydatidiform mole</td>
<td>Gestational trophoblastic disease</td>
<td></td>
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<tr>
<td>Partial mole</td>
<td>Complete or partial</td>
<td></td>
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<tr>
<td>Molar pregnancy</td>
<td>Heterotopic pregnancy</td>
<td></td>
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<tr>
<td>Pregnancy of unknown location (PUL)</td>
<td></td>
<td>Intracranial plus ectopic pregnancy (e.g. tubal, cervical, ovarian, abdominal)</td>
</tr>
</tbody>
</table>

Reproduced with thanks to:

Appendix Four – Cost Analysis of transducer probe disinfection

Reproduced with thanks to:

<table>
<thead>
<tr>
<th>Agent</th>
<th>Quantity</th>
<th>Cost</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cidex</td>
<td>$1152.00 – 14 days</td>
<td>$21.63</td>
<td>$25.43</td>
</tr>
<tr>
<td></td>
<td>Enzymatic cleaner x 1</td>
<td>$3.80</td>
<td></td>
</tr>
<tr>
<td>Tristel</td>
<td>$452.00 – 50 cycles</td>
<td>$9.50</td>
<td>$9.50</td>
</tr>
<tr>
<td>Perasafe</td>
<td>$189.50 – 50 cycles</td>
<td>$3.79</td>
<td>$7.59</td>
</tr>
<tr>
<td></td>
<td>Enzymatic cleaner x 1</td>
<td>$3.80</td>
<td></td>
</tr>
</tbody>
</table>