IN CONFIDENCE

The Shrewsbury and Telford Hospital NHS Trust

Future Fit Clinical Model – Option C2

Purpose of this paper

As part of an external clinical review of Option C2, the Trust has been asked to provide the clinical view of Option C2. This view is from the perspective of clinicians and support teams currently delivering acute services within the Trust. This group of professionals and staff are also responsible for the development and delivery of the future acute model of care, of which C2 is one of four options.

This paper sets out a review of Option C2 undertaken by senior clinicians (nursing, midwifery and medical) within the Women and Children's Service. It has been developed in partnership and with input from clinical colleagues from all Care Groups within the organisation and has been written and developed over time through detailed discussion and debate.

In these discussions, teams have been challenged to give due consideration of what would need to be in place to 'make C2 happen'. This is set out within the paper.

The clinical body, without exception, within the Trust have drawn the conclusion based on evidence, discussion and consideration of scenarios that Option C2 cannot be delivered; that it is not safe or sustainable and would put patients, especially babies and children at risk.

Latest position

In the development and production of the Outline Business Case, Option C2 will be worked up, set out and detailed in the same way as the other three options: Do Nothing; Option B; and Option C1.

The Trust remains on plan to submit the draft Outline Business Case to the private session of the SaTH Trust Board in September 2016.

Option C2
Clinical Review Document

1. Introduction

Women and Children's Services at the Shrewsbury and Telford Hospital Trust (SaTH) reconfigured in September 2014 and moved into the purpose built Women and Children's Centre at the Princess Royal Hospital (PRH). This reconfiguration changed the site of the inpatient Gynaecology, Obstetric and Neonatal facilities and combined the two Paediatric inpatient facilities on one site. The paediatric unit is now the 10th largest in the country. The reconfiguration, sponsored and supported by both CCGs, was driven by estate issues at the Royal Shrewsbury Hospital (RSH) and a pressing clinical need to resolve the medical staffing issues surrounding duplication of Paediatric services across the two hospital sites.

During the final stages of the implementation of the reconfiguration of Women and Children's Services in 2014, the Future Fit programme was established. This started the vital discussion on how health care services can be better planned and delivered in the county. At this time, the Trust agreed to put on hold the final elements of the Women and Children's reconfiguration and specifically the development of new facilities for the Women and Children's Services remaining at RSH. This meant a delay in the final implementation of the schemes approved within the Full Business Case: Children's Outpatients; Children's Assessment Unit; Obstetric Outpatients; and Midwifery Led Unit.

Following the Future Fit appraisal process in September 2015, the Trust was asked by the Future Fit Programme Board to develop a Strategic Outline Case (SOC) to deliver a solution that would address the workforce challenges within the Trust's Emergency Departments, Critical Care Units and Acute Medical services.

In line with the Future Fit Programme, four options were included in the SOC:

- Do Nothing
- Option B – Emergency Site at PRH (including Women and Children's)
- Option C1 – Emergency Site at RSH (including Women and Children's)
- Option C2 – Emergency Site at RSH; Women and Children's remains at PRH

There have been detailed clinical discussions in relation to Options B and C1 within the Women and Children's Care Group. No overpowering argument has been put forward that favours one of these options over the other, although there are demographic advantages of the Emergency Site being PRH; recognising that this would result in increased travel times for patients predominantly on the West of the County.

The C2 option has created much debate and discussion amongst the professional groups within SaTH responsible for the delivery of care. Since it was proposed as part of the Future Fit Programme many clinicians within the organisation have disregarded it as a viable option on the grounds of safety and deliverability. These discussions have progressed into formal meetings with the various clinical teams and an appraisal of this option in relation to quality, safety and deliverability has taken place.

This paper will provide an objective account of the impact C2 would have on Women and Children's Services, Emergency Services and other departments and specialties within the Trust supporting Women and Children's Services.

2. Background

The Women and Children's Centre at PRH consists of a Local Neonatal Unit (Level 2), Children's Inpatients, Children's Assessment Unit, Antenatal Ward, Postnatal Ward, a Consultant-led Delivery Suite, a Gynaecological Ward and Women's Services (Ambulatory Gynaecology Care; Early Pregnancy etc). There is also a Children's Assessment Service at RSH which is open 9am-10pm Monday to Friday. There is a Midwifery Led Unit with post natal beds.

Currently, acutely ill women and children are accepted on both sites via the Emergency Departments and the Children's Assessment Units; however, following the move of Women and Children's inpatient Services to PRH and pathway development with the ambulance services in conjunction with triage coordinated through the Care Coordination Centre fewer children, neonates, and obstetric and gynaecology patients are directed to RSH. Indeed public knowledge of services has also resulted in more patients choosing to go directly to the PRH Emergency Department where the full specialist teams, equipment and facilities await them.

The points set out below are those identified and agreed in the internal multi professional discussions:

3. Impact of C2 on Quality and Safety for Paediatrics and Neonates

3.1 Paediatric and Neonatal Emergency Support to ED at RSH

3.1.1 Acute care to children in RSH A&E – Skills and Staff

Separation of inpatient services from Emergency Medicine creates the potential of competency deficiencies for acute Paediatric and Neonatal Care[1]. It has been the experience since September 2014 that it has not been possible to maintain adequate training and skills in paediatric and newborn resuscitation for A&E staff to treat critically ill and injured children and neonates. Training plans are in place but challenging staffing levels and arrangements in A&E make reliable comprehensive delivery of training and skill maintenance a continued challenge. Patient safety is maintained by a 24/7 non-resident consultant paediatrician.

In Option C2 with the complete separation of all Emergency Medicine (EM) services from Inpatient Paediatric Services and staff and with a much greater number of paediatric attendances 24/7 it is clear that Emergency Medicine will not be able to provide the key skill sets for the attending critically ill and injured children. Specific paediatric support would therefore be required for the Emergency Department and Trauma Unit at RSH[2]. Managing a seriously unwell or critically injured child in these circumstances will require a full 3 tier paediatric team with appropriate nursing support at the Emergency Site (RSH). Even with this level of support there will also be no timely neonatal support to patients arriving at the RSH ED. This will increase the risk of poor clinical outcome for babies.

Please see Appendix A.

3.1.2 Facilities

The 30,000 paediatric ED attendances per annum would require adequate beds/ward space to accommodate their immediate clinical demands and on-going care. As acute surgery (abdominal, trauma, ophthalmology, head and neck etc) will be based at RSH and the Paediatric inpatient beds will be at PRH, Option C2 creates the need for a staffed (paediatric medical/nursing) paediatric surgical bed base at RSH or the development of a rapid transfer service with appropriate surgical (abdominal, trauma, ophthalmology, head and neck) staff (largely medical) 24/7 at PRH.

3.2 Paediatric and Neonatal transfer/transport

3.2.1 Internal transfer: site to site

Option C2 will require critically ill and injured children once stabilised in EM to be transferred from RSH to PRH.

[1] Royal College of Paediatrics and Child Health, National Recommendations – Best practice that directs patients to the right care, first time; and delivery of 7 day services, 24/7

[2] West Midlands Quality Review, Care of Critically Ill and Injured Children in the West Midlands, December 2013

There would be significant number of high-dependency paediatric patients transferring from RSH ED to PRH. Such transfers are known to carry an additional risk to the patient and are difficult to implement.

Safe delivery of transfer of critically ill and injured children would require development of a new SaTH paediatric retrieval team with appropriate medical and nursing staff, with appropriate additional rotas.

These HDU transfers would be part of a new transfer need which would include all paediatric patients considered by EM to require inpatient hospital admission.

The process of transfer to the inpatient unit at PRH will result in inherent time delays for patients presenting to RSH ED before transfer to the paediatric inpatient site for definitive care.

In conjunction with a site to site Paediatric transfer service there would need to be a neonatal stabilisation and transport retrieval service again requiring the appropriate staff for this and in view of the complexity of these transfers it is considered that a separate rota for Consultants/Neonatal Nurse Practitioners and Neonatal Nurses would need to be developed. The current good-will model carries an inherent risk and is fragile. The retrieval service (now combined Paediatric and Neonates) will not support intra-hospital transfers.

3.2.2 External

KIDS (Birmingham Children's Hospital Intensive Care) retrieval team collect paediatric patients admitted to SaTH requiring Paediatric Intensive Care Unit (PICU) admission. However, patients require access to local anaesthetic and paediatric staff and a Critical Care Unit (CCU) to initiate and maintain airway and breathing support until they arrive. The KIDS arrival can be subject to delays of 4-8 hours, especially during the winter months.

The local team (paediatrics and anaesthetics) is utilised for keeping these patients safe until the KIDS team arrive.

In Option C2, the majority of paediatric patients requiring this service (local stabilisation followed by transfer) are likely to present at the main ED at RSH but this group of patients will also include patients at the PRH main inpatient unit.

Both sites would therefore require skilled consultant anaesthetic & CCU support able to respond to these paediatric emergencies. This dual requirement is current within the SATH set up but there is grave concern over the sustainability of the maintenance of anaesthetic skills on the non-inpatient site (RSH) in the longer term.

3.3 Paediatric and Neonatal trainees

There is a high risk of losing trainees in option C2 as their time in a recognised training unit (PRH) covering Paediatrics and Neonates will exclude experience of acutely unwell paediatric and neonatal patients who arrive in the ED at RSH.
Examples include:

- status epilepticus
- respiratory and cardiac arrests
- severe asthma
- trauma
- head injury
- sudden unexpected death in infancy (SUDI)
- severe physical and sexual non-accidental injury.

Rotation between sites would require considerable tier 2 work force expansion and there is a national absence of suitable candidates.

Support and approval of this model by the RCPCH has not yet been sought. Concerns regarding sustainability; specialty separation; and an inability to provide and sustain tier 2 support 24/7 across the two sites are likely to impact on their position. If training posts were considered unsuitable there would be a loss of trainees within the county making the current paediatric services unsustainable. In addition the projected number of speciality trainee numbers in the future is highly likely to decrease.

3.4 Anaesthetic support for paediatric emergencies

Having the main inpatient paediatric unit at PRH and 30,000 paediatric ED attendances at RSH would result in a requirement for 24/7 paediatric anaesthetic support on both sites as described above. This would require a full time rota of anaesthetists with competences and confidence in managing children on both sites. They will need regular exposure to paediatric lists in order to maintain their skills and competencies. This is currently not sustainable due to capacity challenges within the anaesthetist workforce.

The Centre for Workforce Intelligence (CFWI) undertook an in depth review on the anaesthetic and Intensive Care Medicine (ICM) workforce. The review focused on fully trained anaesthetists and ICM specialists who hold a certificate of completion of training ('CCT holders'), and typically are employed as consultants**.** This review suggested there is a significant future risk to the supply of anaesthetist and intensivist CCT holders with impact on all middle and training grades. It is therefore envisaged that this problem would only worsen in the future with Option C2.

3.5 Effects on other services within Option C2

3.5.1 Trauma

There is a risk that patients will self-present at the W&C Unit with the expectation that they can be treated for trauma. Therefore, trauma services would need to support both sites 24/7 as there is the likelihood that patients will be attending both sites.

3.5.2 Abdominal, Urological and General Surgery

There is currently considerable difficulty in staffing and safely sustaining on site surgical support for paediatrics at PRH with the surgical inpatient base at RSH. Currently there is speciality presence 0900-1700 Monday to Friday but delivery of acute abdominal surgery to children out of hours already presents considerable challenges and puts at risk the surgical centre at RSH. This matter will continue with C2.

3.5.3 Head and Neck and Ophthalmology

Head and Neck and Ophthalmology will be required to provide emergency cover for both sites (RSH/PRH) within a workforce that is not sufficient for this dual service

3.5.4 Pathology and Blood Transfusion Services

Blood bank would need to be located at the main emergency ED site at RSH and at the PRH site (support of paediatric oncology and obstetrics predominantly). This currently produces extremely challenging workforce issues which would be perpetuated with a workforce with considerable recruitment challenges.

3.5.5 Radiology and Imaging

There will be a requirement to have contrast/interventional radiology and urgent paediatric/neonatal radiology expertise on both sites.

3.6 Recruitment and retention of medical and nursing staff

Recruitment within all disciplines of paediatrics and neonates is currently challenging except at consultant level. This concurs with the information available from medical workforce planning within West Midlands Deanery; there will continue to be challenges at middle and training grades. Option C2, with the potential for split site care would require workforce expansion which would not be met within current provision within the West Midlands and it is believed by the professional body that SaTH would be less likely to attract candidates in both nursing and medical professions at all grades when considering the model of care delivered by C2.

Having the 10th largest paediatric service in the country following 2014 reconfiguration has provided an opportunity to appoint consultants, although currently nursing staff have been difficult to appoint to template; it is believed that this advantage in consultant recruitment will be lost.

The potential for the RCPCH to not support this model would result in inability to provide and sustain tier 2 support 24/7 across the 2 sites.

3.7 Conclusion

The consultant body do not feel Option C2 is achievable or sustainable with the inability to recruit the required expanded work force within a split site option. The consultant body believe that C2 offers too many challenges to the provision of effective and safe services, in relation to having the right clinical skills in the right place to ensure children are cared for in line with best practice and guidance to deliver the best possible outcome for children. These challenges are not only to the specialists in paediatrics but also other specialities involved in the care of children and the new born.

4. Obstetrics, adjacencies and Critical Care

Building on work done at Liverpool Women's Hospital, the clinical community recognised the essential immediate clinical adjacencies of a Consultant Obstetric service; these are:

- gynaecology
- neonatology
- obstetric anaesthesia
- staffed obstetric theatre (option for x2)
- level 2 adult HDU
- level 3 Adult ITU
- emergency medicine
- haematology and blood transfusion
- microbiology
- non obstetric ultra sound
- radiology (with access to intervention radiology)
- acute medicine; and resuscitation services
- the obstetric service would require access to the full suite of speciality medicine and abdominal surgery within 1 hour.

4.1 Specialty and service links

4.1.1 Support Services

The clinical working groups within SaTH recognised that C2 creates significant issues for the staffing of an appropriate 24/7 pathology and blood transfusion service on two sites[3]. The Trust is already experiencing significant challenge in recruiting to current vacancies and has already embraced development of innovative employment and training packages to support service delivery. However, there is no further capacity to increase our internal opportunities to grow our own workforce; C2 would instigate further fragility to the service.

Acute CT, MRI, Ultrasound imaging is required by obstetrics with the infrequent need for intervention radiology. C2 will therefore put specific pressure on radiology staffing to supply appropriate care on 2 sites.

4.1.2 Surgery and Medicine

The requirements of obstetric patients of medical and surgical services would create significant workforce pressures. If there is to be appropriate and timely attendance to the obstetric patients (PRH) then rotas would need to be constructed to supply this support without putting patients at risk at the EM site (RSH).

[3] Care Quality Commission Core Standards, Co-location of a transfusion laboratory

4.1.3 Emergency Medicine

The obstetric link with ED is small, but the critically ill or injured obstetric patient does create significant complexity for an ED distant from a maternity unit or neonatal unit as delivery (usually immediate Caesarean section) forms part of adult resuscitation. This scenario also presents ED with the on-going care of a neonate (who will often be preterm). There will be the requirement of skills to undertake a caesarean section as well as neonatal resuscitation. As with the paediatric/neonatal support to ED model there will need to be a staffed retrieval team attending from PRH for the neonate and the mother.

4.1.4 Critical Care

The link with Critical Care and Critical Care outreach is identified as key to a safe Obstetric service[4].

On occasions there is the need for women pre- and post-delivery to require immediate and longer term critical care support. Women admitted onto the Consultant-led Delivery Suite may have a number of co-morbidities that make them a high risk patient, requiring critical care outreach support but their obstetric needs determine the site where care is delivered with a key relationship between obstetric anaesthesia and critical care. Critical care admission numbers are therefore not a marker of Critical Care need.

In Option C2, for the Obstetric Unit there will need to be on site critical care support to PRH[5].

An alternative model may be having no critical care support but with a retrieval service from RSH to Obstetric and all other inpatients who may be at low risk of needing Level 2 or 3 care. However women requiring critical care both directly and from outreach support whilst they have acute obstetric needs will need to remain at PRH and this creates a staffing issue where critical care retrieval does not solve the problem.

In order to deliver critical care using a retrieval model, mothers would need to be stabilised and transferred to the Critical Care Unit at RSH. The patient would still have on-going obstetric care needs at RSH with no on site Obstetric or Neonatal support. Furthermore if she had already been delivered when her critical care needs were identified, it is likely that her baby would be on the Neonatal Unit at PRH and therefore on a different site to the mother, creating problems of separation from family and baby. Please see Appendix B.

4.1.5 Theatre staffing

Overnight theatre staffing with attendance within 10 minutes for the 2 obstetric theatres without the ability to share with other emergency systems (as is currently the process in PRH) will produce considerable theatre staffing pressures for the obstetric unit aligned with a treatment centre.

[4] Care Quality Commission Core Standards, Access to Level 3 Critical Care
[5] Liverpool Women's Hospital – essential clinical adjacency matrix

4.1.6 Recruitment

Midwives and Obstetricians have strongly indicated they would feel isolated with their patients vulnerable to delayed and poor care. This is likely to result in recruitment and retention issues.

4.2 Conclusion

The midwifery and medical professional clinical body within SaTH do not consider option C2 to be deliverable or sustainable for effective and safe consultant obstetric practice.

5. Mitigation to deliver a clinically safe C2

In order to reduce some of the risk to patients, the following mitigating actions could be taken:

5.1 Mitigation model 1 for Paediatrics

Revert back to having two paediatric inpatient units on each site, both able to deliver initiation of paediatric intensive care, stabilisation and ongoing high-dependency level support. This would work against the CCG sponsored reconfiguration of 2014 supported by the RCPCH and would maintain the pressure on acute anaesthetic and critical care services for both sites which the Sustainable Services Programme is tasked to resolve.

This would result in the loss of the benefits of the first reconfiguration which includes:

- comprehensive paediatric specialty provision for patients
- stable medical workforce
- reduced length of stay
- consultant presence for emergencies in line with 7/7 working and immediate access to resident consultant opinion during the peak activity hours for critically ill children – 7 days a week

The two units would require resident staff with RCPCH level 2 competencies covering 24/7 (middle grade or Consultant) as well as tier 1 staff and non-resident consultant cover. Meeting the need for resident staff with these competencies will mean an increase in Consultant numbers due to the limitations set by the college on training numbers and unavailability of non-training grades senior posts.

To cover RSH 24/7 at tier 2 level we would need at least an additional 5 WTEs on the tier 2 rota, who are likely resident consultants. Based on current recruitment challenges it is thought that this would be unachievable at trainee/SAS level and would result in a return to previous consultant recruitment problems.

Recruitment of the number of nursing staff with appropriate skills required for a second paediatric ward would also be challenging. Development and maintenance of HDU skills would not be feasible due to inadequate throughput of patients on each site. The service would need at least 2 x trained nurses overnight at RSH and 1 x Advanced Paediatric Nurse Practitioner (APNP). This would equate to an additional 7.2 WTE nurses and 4 APNPs (as a minimum).

The specialty support required on each site is given in the table in Appendix D.

This does not resolve the issues of **obstetrics and critical care.**

5.2 Mitigation model 2:

Develop a paediatric ED at PRH and not accept children to the RSH site. This is not thought to be possible because this would require the professional and workforce infrastructure needed for an emergency department as well as:

- ED consultants and medical staff
- ED nursing staff with paediatric training
- resident Anaesthetic team with paediatric skill
- resident trauma team
- resident surgical team
- blood transfusion, full blood chemistry and haematology service

The majority of ED attendances are with injury and therefore even though paediatric illness could be managed, the injury workload could not be accommodated by a purely paediatric led service; therefore additional support in these areas would also be required on the PRH site.

This does not resolve the issues of **obstetrics and critical care.**

5.3 Deliverability

If the mitigating actions are implemented under mitigation models 1 and 2 there is still the question as to whether or not it is deliverable within the current health economy. There are two key elements that impact on deliverability which are workforce and finance.

5.3.1 Workforce

The inability to cover 2 ED sites currently makes mitigation model 2 unlikely. It would require full ED, surgical and anaesthetic support on both sites. It is acknowledged that there is a high turnover of paediatric patients through ED accounting for 25-30% of A&E attendances. The creation of one ED for children would require appointment of an Emergency Medicine Consultant with an interest in paediatrics, but not a full rota of Paediatric ED doctors.

It has to be acknowledged that taking the Paediatric ED attendances away from the main ED would make the one large ED unsustainable as a training unit due to no paediatrics going to the site. Therefore, the loss of trainees would impact on the workforce.

As previously mentioned in section 3.3, there is a high risk of losing paediatric trainees as their time in SaTH would exclude experience of acutely unwell paediatric & neonatal patients who arrive in ED, which is a vital part of their training programme. The loss of trainees within the county would make our current paediatric services unsustainable and have a further impact on our ability to recruit in the future.

Recruitment and retention of staff within all disciplines of paediatrics is currently challenging. This model with split site care would make SaTH less likely to attract the candidates we would wish to recruit in both nursing and medical staff at all grades.

Given projected contraction in trainee numbers and dwindling Associate Specialist /Specialty Doctor workforce there is a concern that trainees in paediatrics are falling in number with fewer available for consultant appointment; those remaining are more likely to choose a job non-resident overnight so recruitment to a resident post is likely to be poor.

Appointment of tier 2 doctors has been problematic and is increasingly so, with the loss of the Associate Specialist grade and lack of specialty doctors. Paediatrics currently has approximately 30% of tier 2 daytime shifts covered by locum consultants. Therefore, it is likely that this cover will have to be provided by resident consultants overnight.

The C2 model of services is likely to further reduce the attractiveness of working in the ED and the Women and Children's Centre, putting the retention of the current workforce at risk.

Sustaining on site surgical support for paediatrics at PRH is a challenge now and will continue.

The high possibility of non-approval of Option C2 by the RCPCH, due to unsustainability and an inability to provide and sustain tier 2 support 24/7 across the 2 sites.

5.3.2 Financial Impact

If the workforce is available, the cost implications for the workforce alone are approximately £6.5 million recurring. This does not take into account the additional equipment and facilities required should a second paediatric unit be provided at RSH. Due to the current health economy's financial position it is unlikely that this would be available.

6. Concluding Residual Risk

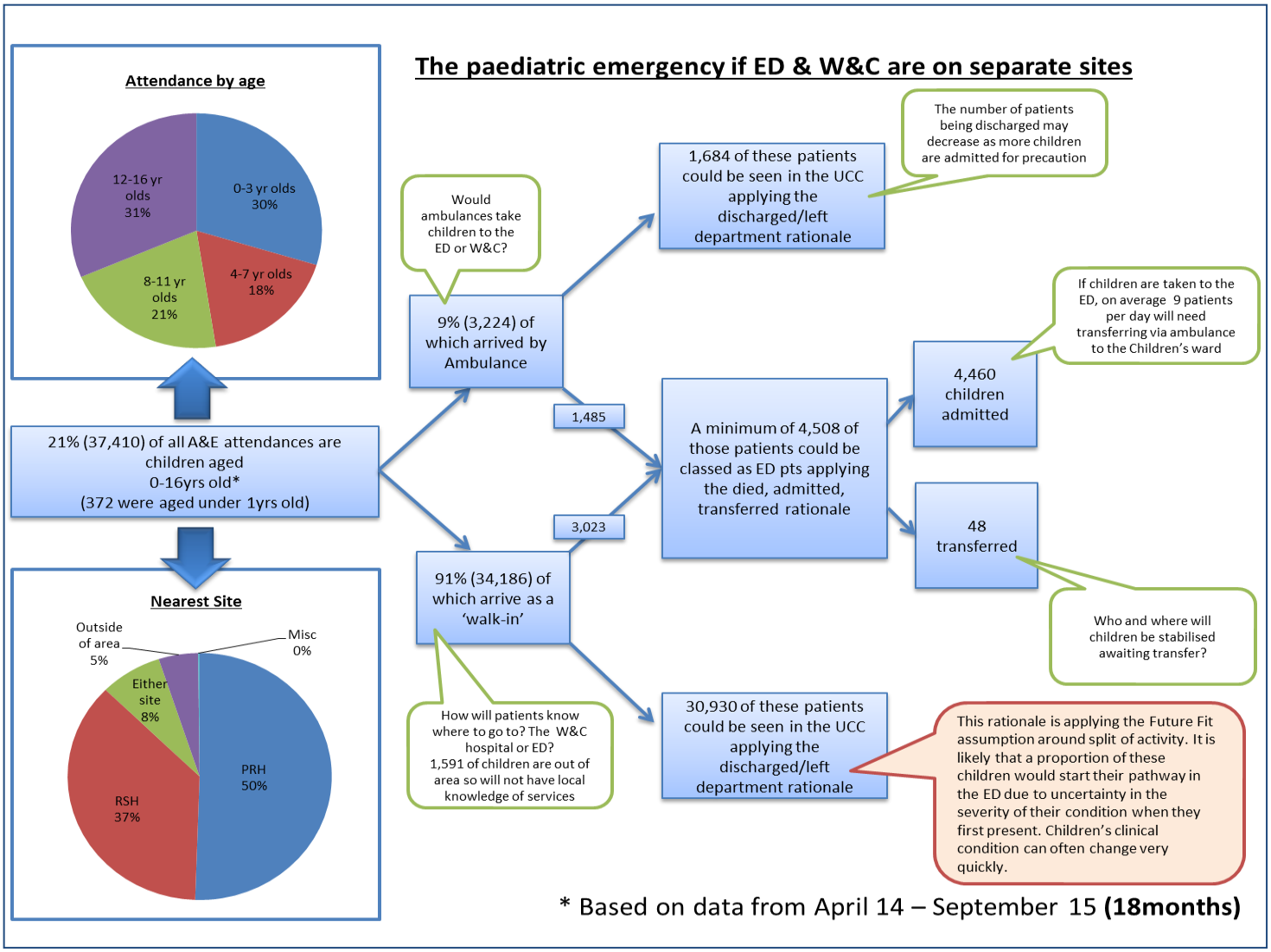
There are a number of high risks identified that would have a potentially grave impact on the safety and quality of services for patients. The mitigating actions that have been explored require large additional investment in the workforce and infrastructure.

The principle aim of the Future Fit and the Trust's Sustainable Services Programme is to address issues within the Emergency Department and Critical Care due to a historic issue. The mitigating actions would further exacerbate the very issues the SSP is trying to address; therefore suggesting the mitigating actions would be undeliverable.

Without the mitigating actions there remains a severe risk to the quality and safety of services for patients and has the potential to destabilise Women and Children's Services in the county.

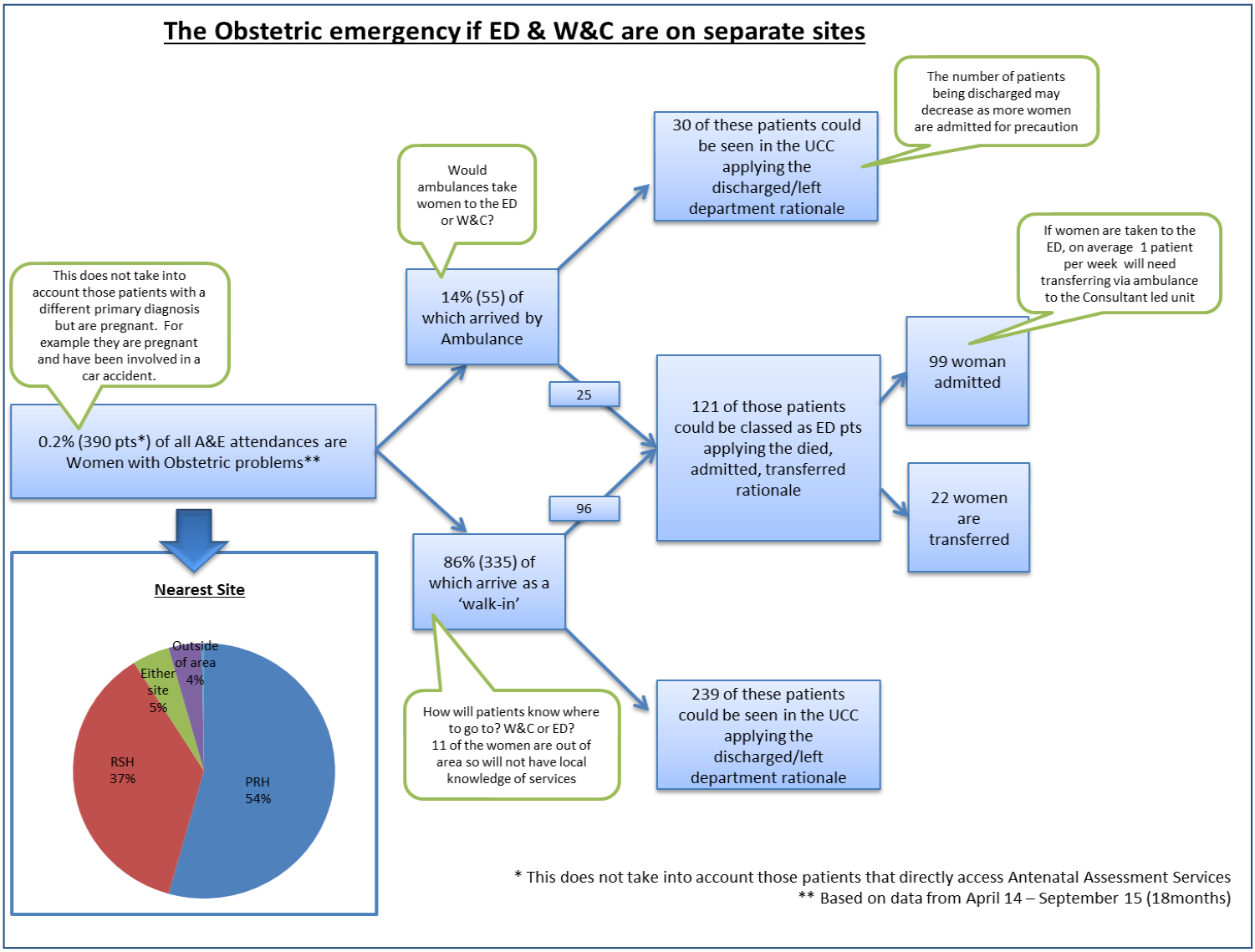
Appendix A:

Paediatric activity



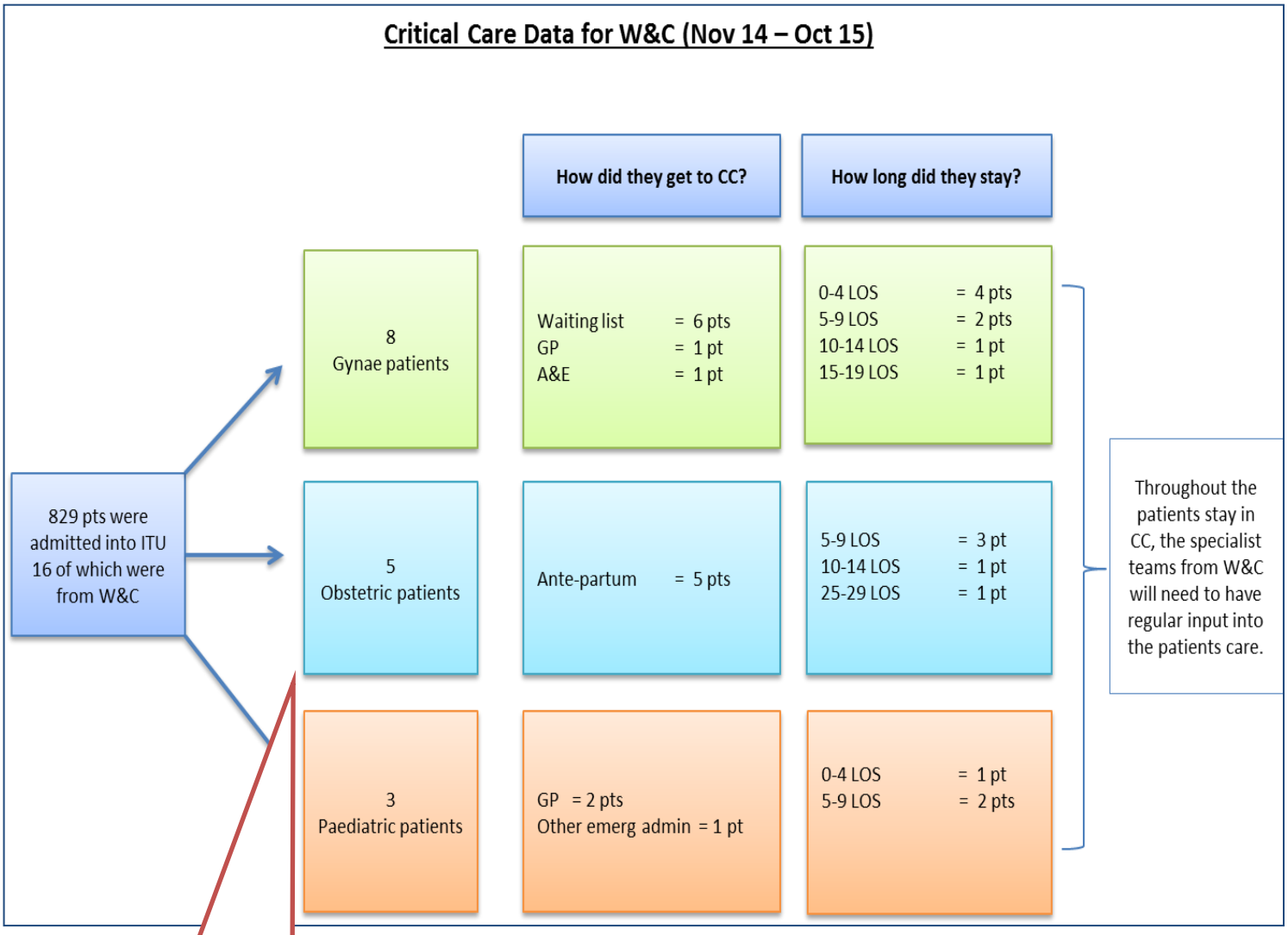
Appendix B:

Obstetric activity



Appendix C

Women and Children's Critical Care Unit admissions



N.B. This is in addition to the women who are supported by the Critical Care Team on an outreach basis whilst staying on the Consultant led Obstetric unit.

Appendix D

Speciality support required on each site under mitigation model

RSH site Paediatric Ward	PRH site Paediatric Ward
Emergency medicine	-
ENT	ENT
Surgery	Surgery
Pathology	Pathology
Trauma	-
Blood bank	Blood bank
Radiology incl CT & USS	Radiology incl CT & USS
HDU	HDU
Neonatal support	Neonatal Unit
HDU nurses	HDU nurses
EPLS trained nurses	EPLS trained nurses
Paediatric nurses	Paediatric nurses
T2 level competencies Consultant resident	T2 trainees/associate specialists/some resident consultant shifts
T1 apnps	Tier 1 trainees
Therapies & dietetics	Therapies & dietetics
Anaesthetic support	Anaesthetic support