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Why do parents bring children with minor illness to emergency and urgent care departments?

Literature review and report of fieldwork in North West London

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Executive Summary

Background

What makes a parent decide to bring a child with a minor illness to a hospital paediatric emergency department (PED) or urgent care centre (UCC), rather than go to a GP or pharmacy, or manage the illness themselves at home?

In 2013/14, almost 90% of paediatric emergency department (PED) attendances did not result in the child being admitted to the hospital.¹ The number of PED attendances in England has grown in recent years, rising from 3.9 million in 2008/09 to 5.1 million in 2014/15.^{2,3} High numbers of non-urgent attendances at PED (i.e. attendances for illness that could have safely been treated elsewhere) increases waiting times, inconveniences families, incurs significant costs to the NHS, and reduces the time hospital staff can spend treating severely ill children.

This report, produced by the Behavioural Insights Team (BIT) in collaboration with the Connecting Care for Children (CC4C) programme and funded by the Health Foundation's *Behavioural Insights Research Programme*, addresses this issue. We review the academic literature on why parents attend PED non-urgently, describe the results of our observations and fieldwork conducted in two London hospitals (St. Mary's PED and Northwick Park UCC), and analyse attendance data at these two hospitals. Ultimately, the information in this report will be used to the design a behaviourally-informed intervention which helps parents manage the health of their children outside the hospital and reduces their need to attend the hospital for non-urgent illness.

Our findings

Our fieldwork and review of academic literature identifies five main reasons parents attend PED non-urgently. Furthermore, it describes the role of several behavioural biases (mental rules-of-thumb which can lead to decisions a person would not make if they had the time and capacity to fully reflect on their options) as potential drivers of these reasons. The five reasons are:

(i) Parental worry

The negative emotions parents understandably feel about their child's illness (e.g. worry, fear, panic and anxiety) may lead them to attend PED nonurgently, either because they overestimate the danger of their child's illness, or because they want personal reassurance that they are doing the right thing. One consistent finding from behavioural science is that people's emotional states can influence how much risk they are prepared to tolerate. Parents who feel great anxiety about their child's health may be more likely to perceive the illness as being more serious than it really is; this may in turn motivate them to attend PED.

(ii) Perceived advantages of PED

Parents welcome the reassurance of being able to see a child specialist, and furthermore, explain that they are willing to wait as long as it takes to get the

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best care for their child. We observed positive encounters in PED, and it is likely that a positive experience in a child-friendly, specialist environment will reinforce paediatric attendance. This tendency may be partly driven by the messenger effect, a preference many people have for receiving healthcare advice from a source they perceive as authoritative. In the context of child health, many parents may prefer to see a paediatrician rather than a GP, even though both are likely to be equally well-equipped to diagnose and treat minor illnesses.

(iii) Perception that other healthcare services were not suitable

Parents and healthcare professionals reported that parents are often not fully aware of the range of healthcare services available to them for treating minor illnesses (e.g. NHS 111, pharmacies, out-of-hours GPs). Among parents who were familiar with these options, many regarded pharmacists as 'shopkeepers' rather than healthcare professionals and some reported dissatisfaction with the level of care available at their local GP. In contrast, PED was viewed as having a stable 'brand', where parents knew they could also access good quality healthcare at short notice. This appears to lead to a 'default bias' in some cases, where parents deal with their child's illness by quickly deciding to go to PED as their first port-of-call, rather than taking time to select another more appropriate healthcare service.

(iv) Social network influence

Several parents reported attending PED because they were encouraged to do so by people around them. This is in line with a vast behavioural science literature showing the power of social norms on behaviour. Parents may prefer to take the `safe option' of attending PED for illnesses they themselves regard as non-urgent, in order to be seen as a good parent by their peers, or because they are responding to pressure from relatives pushing them to attend.

(v) Lack of confidence and low health literacy

Our interviews found that many parents did not feel confident assessing their child's illness or selecting the appropriate healthcare service. Additionally, we did not observe procedures in place at PED to address this issue – parents that attended PED with a child with a minor illness typically received guidance about managing the illness, but this was almost always given verbally (i.e. no written information was provided). Furthermore, it was given at a time when parents were distracted and distressed, and therefore perhaps unlikely to fully absorb the information. Not improving the ability of parents to judge the severity of an illness means they may be more likely to be influenced by confirmation bias (i.e. evaluating any symptoms their child may have as confirming their preconceived idea of what the illness is) and availability bias (i.e. determining what their child's illness is by what examples come most readily to mind, rather than by what is most likely) when next evaluating their child's illness.

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Our analysis of attendance data from 2013 to 2016 at both hospitals found that around 55-65% of all attendances can be classified as non-urgent. Additionally, the majority of non-urgent attendances in both hospitals were by children aged 0 – 4 years. As such, we have decided that our future intervention will target this age group. We reasoned that an intervention aimed at this specific group is likely to have a greater chance of success than an intervention aimed at all non-urgent attendances generally (i.e. one including all children aged under 18). The reason for this is that the intervention could focus on the decision-making of parents who brought their child to PED, and could provide advice on managing the relatively small number of health complaints (e.g. fever, vomiting, rashes) that lead to young children attending the hospital non-urgently. Our data analysis also identified non-urgent reattendances as the main outcome measure of our future intervention.

Conclusion

Behavioural science can presume that the way people behave is 'irrational' or the result of poor logic.¹ However, for the majority of families included in this project this was not the case. In a rapidly changing and sometimes complex healthcare system it is understandable that parents will pursue the most 'risk-averse' or 'default' option. The decision to attend PED or UCC was usually because they thought it was the best option for them and their child compared to alternative services, and they did not feel equipped to deal with illness without reassurance and professional support.

During our interviews with parents, many expressed a desire for written information and healthcare education after or at the point of discharge, but this was rarely observed in PED and UCC. Reassurance through education offers an opportunity to influence parental behaviour and address parental worry and lack of confidence and low health literacy. This is supported by our review of the literature showing that educational interventions can reduce healthcare demand.

Using our observations of family behaviours and an understanding of behavioural science, other opportunities to influence behaviour are:

- emphasising the benefits of self-care;
- making costs to the health service more salient;
- creating peer-support mechanisms to offer parents social support from other parents; and
- supporting navigation of the healthcare system with decision-trees for unwell children.

We hypothesise that the introduction of a behavioural intervention either at the point of discharge, or shortly after, would reduce the pressure on the healthcare system. If parents had more confidence in managing minor illness, were reassured, knew the steps they could take at home, and were encouraged to attend more appropriate services (e.g. GP or pharmacy), this could prevent non-

urgent attendance at PED and UCC. This would give staff more capacity to care and educate those in the department with more pressing needs.

This exploratory work performed will inform a future report on the design of a behavioural intervention encouraging parents to manage minor illness at home and attend the most appropriate healthcare service. This is expected to reduce non-urgent paediatric reattendance at our two hospital sites (Northwick Park and St Mary's). We predict that the results of this will be scalable to other hospital trusts across the UK.

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1. Introduction

Families are increasingly making the decision to attend hospital emergency or urgent care departments with a child suffering from a minor, non-urgent illness. Often these children can be managed by a GP, trip to a pharmacy or through supportive care at home.

A recent study estimated that inappropriate Accident and Emergency $(A\&E)^i$ attendances cost nearly £100m in 2011-12, with children under 16 being the age group with the highest rate of inappropriate attendances.⁴ These costs could be reduced through alternative means of treatment: it currently costs between £57 and £83 per low acuity condition seen in PED⁵ compared to between £40 and £50 in a GP surgery⁶, and it is cost-free to the health system for families to selfmanage.

The Behavioural Insights Team (BIT) and the Connecting Care for Children (CC4C) programme at Imperial College Healthcare NHS Trust are working together to address this challenge. The work presented in this report was funded by The Health Foundation's *Behavioural Insights Research Programme* which seeks to generate new knowledge on how behavioural interventions can improve efficiency and reduce waste in health care services.

We also investigate how to equip the parents of children with a minor illness with the knowledge and confidence to manage their child's health after they leave hospital.

A future report will describe how BIT and CC4C will put this information into practice by designing an intervention at two London hospitals (St. Mary's Hospital and Northwick Park Hospital) with the goal of empowering parents to better manage their child's minor health needs, so that they do not need to return to the hospital soon afterwards.

The remainder of this report is structured as follows:

- The opening section provides background information on the growing trend in the UK of parents bringing children with minor illnesses to emergency and urgent care locations. It also describes the landscape of healthcare services available to these parents, and that emergency departments are supposed to be reserved for only the most serious health problems.
- Section 2 reviews the academic literature examining why parents bring their children to emergency departments for illnesses which turn out to be nonurgent. It also examines whether there are established best practices for minimising these types of attendances.
- Section 3 describes the results of BIT and CC4C's fieldwork at St. Mary's and Northwick Park hospitals. It provides a breakdown of what the `patient

ⁱ A&E is the term commonly used in previous literature and by parents and healthcare professionals during interviews. It is used interchangeably with the term Emergency Department (ED), but means the same thing.

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journey' through these hospitals looks like, and includes the results of interviews with parents and healthcare professionals offering their opinion on why parents attend the hospital with children with minor illnesses (as well as our own observations on the same topic).

- Section 4 provides descriptive analysis of St. Mary's and Northwick Park attendance data; it shows which times of day are particularly busy (or quiet), and how frequently parents who bring their children to hospital with minor illnesses return for the same reason.
- Section 5 discusses our overall findings, addresses limitations and unintended consequences before concluding with a plan for future work.

1.1 Background

Up to 40% of all emergency department (ED) visits in England are "non-urgent" attendances.¹ Non-urgent attendances are defined as situations where the unwell person could have self-managed their illness at home or been treated through alternate services such as a GP or pharmacy (see Box 1). This means that between 2.9 million and 8 million ED attendances in 2014-15 could potentially have been avoided, which would not only reduce pressure on the healthcare system, but also be more convenient for members of the public.⁷ This problem is not unique to the UK - a recent review of 15 countries found that the typical rate of non-urgent adult ED attendance was 32%.⁸

Many non-urgent attendances comprised of parents and carersⁱⁱ bringing their children to a paediatric emergency department (PED) with minor illnesses such as fever or diarrhoea.⁹ This is a growing trend - the number of children attending PED in England rose from 3.9 million in 2008/09 to 5.1 million 2014/15.² This 31% increase is six times larger than the UK population growth rate (5.3%) over the same period; hence this does not explain the sharp rise.ⁱⁱⁱ Rather, as this report will document, the increase in paediatric attendances appears to be driven by factors such as parental attitudes and expectations towards the management of sick children; issues with access to primary care; and the erosion of traditional support networks.

The issue of non-urgent hospital attendances looks set to persist: 61% of parents attending PED in non-urgent situations say they would attend again if faced with a similar situation.¹⁰ This is concerning because there are many potential benefits to reducing the number of non-urgent PED attendances. A less crowded PED can help ensure that severely ill children are treated more quickly and reduce hospital waiting times generally.¹¹ Children with non-urgent illnesses who do not attend PED are unlikely to be worse off given that, by definition, they could have

ⁱⁱ We use the terms `parent' and `carer' interchangeably throughout this document.

^{III} The population of the UK grew from 61.8 million in 2008 to 65.1 million in 2015.

⁻ Office for National Statistics (2016), Time series: United Kingdom population mid-year estimate. Retrieved December 22, 2016, from: https://www.ons.gov.uk/peoplepopulationandcommunity/ populationandmigration/populationestimates/timeseries/ukpop/pop

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safely been treated elsewhere. Reducing non-urgent attendances also represents a large potential cost saving for the NHS, estimated at around £100m in 2011-12.⁴

An unpublished prospective study by the Health London Partnership (HLP) reviewed paediatric activity across six London EDs in February and March 2016. Researchers explored the level of severity of illness in children presenting to EDs, the type of healthcare professional required to manage these children, and the follow-up care they required. In total 3,020 paediatric patients were observed in six hospitals over 14 days. The key finding from this work was that 42% of the children were identified as "the ED presentation might not have been necessary if the family had received prior education in the self-management of illness."^{iv}

Box 1: What is a non-urgent attendance?

The terms non-urgent, unnecessary and inappropriate attendances are often used synonymously in academic literature. They refer to hospital attendance for minor illnesses which could have been managed at a pharmacy, GP practice, walk-in centre, or at home.

Non-urgent attendances have been defined as "patients who attend A&E but whose injury or ailment does not require hospital treatment",¹² "patients who self-refer with low urgency problems that are unlikely to require admission and are more suitable for other services, such as primary care, telephone advice helplines or pharmacy",⁹ or attendances which "could have used a different care provider such as an urgent care centre, minor injury unit, walk-in centre, primary care service or self-care."¹³ Other studies define the term using clinical criteria, such as attendances which are "assigned to non-urgent triage categories"¹⁴ or "Category 4 and 5 [in the] Triage System."¹⁵

Whether an attendance is urgent or non-urgent is partly a matter of perspective. Parents feeling anxious and stressed about an unwell child may see the situation as an emergency, and seek out hospital care accordingly. This is supported by National Institute for Health and Care Excellence (NICE) guidance on the management of childhood fever which recommends that families should seek further help from healthcare professionals (although not specifically emergency care) when: "the parent or carer is more worried than when they previously sought advice" or "the parent or carer is distressed, or concerned that they are unable to look after their child."¹⁶

Healthcare professionals may feel that the illness could have been managed elsewhere. This report incorporates both perspectives, taking the view that parents often do not have the medical expertise to judge whether an illness is urgent or non-urgent, and may benefit from information which helps them to make more informed decisions about managing the health of their children.

^{iv} The Healthy London Partnership (HLP) children and young people's transformation programme is designing easier access to more streamlined and reliable care with the aim of reducing variation across London.

1.2 What healthcare services are available for the parents of unwell children?

There are many healthcare services which parents might use to manage the health of their unwell children. Figure 1 shows a leaflet produced by the NHS which summarises six main services (self-care, NHS 111, pharmacies, GPs, minor injury units, and A&E and 999) and provides advice on when to use them.¹⁷ This guidance covers mild illnesses, like a cough or sore throat, to life-threatening situations such as chest pain or serious blood loss.

Self-care	Grazed Knee Cough or cold Sore throat Make sure your medicine cupboard is stocked up with over the counter remedi			
NHS 111	Unsure Unwell Confused Need to know where to go	When you need medical help fast but it's not a 999 emergency		
Pharmacy	Diarrhoea Runny Nose Headache	For advice on common illnesses and medicines to treat them		
Your GP and Out of Hours	Ear pain Backache Throat infection	If you have an illness or injury that won't go away make an appointment to see your GP. If it's outside your GP's opening hours, you can telephone your GP surgery to be directed to the local 'Out of Hours' service.		
Minor Injuries Unit	Strains Sprains Stitches	For minor injuries		
A&E and 999	Choking Chest pain Blackout Blood loss	Life threatening situations and emergency		

Figure 1: A page from a "Choose Well" leaflet¹⁸

The 111 telephone service is the NHS's non-emergency number. NHS 111 call handlers are not clinically trained but are supported by nurses and paramedics. A recent report from the Nuffield Trust acknowledges that between 2015 and 2017, the number of people calling NHS 111 that have been advised to attend their local emergency department, or been sent an ambulance, increased from around 150,000 a month to over 200,000. However, surveys asking callers what action they would have taken had they not been able to ring the service indicate that 111 appears to steer people away from emergency and urgent care, with 20% of callers advised to go to A&E or sent an ambulance, compared with 45% who say they would have pursued emergency and urgent care had 111 not been available.¹⁹

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The inclusion of pharmacists in this leaflet highlights the important role they play in the healthcare system as community-based specialists. However, as illustrated in the fieldwork section of this report, many parents do not consider pharmacists when seeking treatment for unwell children, even though many pharmacies offer a walk-in minor ailment service which diagnoses and treats minor childhood illnesses.²⁰ The leaflet highlights that out-of-hours GP services are also often available (these can also be accessed through the 111 service). Minor injuries units are a type of walk-in clinic service that is usually staffed by emergency nurse practitioners who can work autonomously (without input from doctors) to treat minor injuries. Urgent care centres (UCCs) offer a similar service to minor injuries units, but were omitted from the leaflet. UCCs are medical facilities located near emergency departments. Their purpose is to treat health conditions which need immediate care but which do not need to be seen in an emergency department.

Figure 1 also recommends self-care as an appropriate way to manage certain mild illnesses. It is worth noting that the way that parents manage the health of their unwell children can be influenced by their interactions with healthcare professionals over time. In the fieldwork section of this report, we quote parents who report a strong preference for attending PED because of a negative encounter with a GP. It is also easy to imagine the opposite situation, where a young parent develops greater self-confidence in their ability to manage their child's health because they receive good guidance and coaching from a GP or pharmacist. Such a parent may consequently feel less of a need to attend PED when their child is unwell.

Another way parents might improve their ability to self-care for their children is by studying material which shows them how to identify signs of serious illness in children. However, there are currently no professionally-validated standardised materials along these lines which are consistently provided to UK parents. NICE guidelines do provide information about identifying signs of serious illness in children (e.g. Appendix 1), but these are aimed at healthcare professionals rather than parents.¹⁶ One ongoing effort to produce similar materials designed specifically for parents is the ASK SNIFF^v program, which is currently developing video resources to help families identify the signs of serious illness in their children.²¹

In addition to the services described in Figure 1, parents can also access health advice online. For example, the website NHS Choices, which received 538 million visits in 2015 and accounts for a quarter of all health-related web traffic in the UK,²² provides health information through articles and videos. For example, a parent who searches "fever" on NHS Choices can access text and video resources describing the causes of high temperature, guidelines on when to seek medical advice, methods of treatment, and advice on when fever may indicate serious illness.²³ Other popular informal services are the forums Mumsnet²⁴ and

^v ASK SNIFF stands for "*Acutely Sick Kid Safety Netting Interventions for Families*"

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Netmums.²⁵ Both websites offer parenting advice, including information about child health, and combined receive over 1 billion views per year.²⁶

1.3 Project team

This project combines BIT's rich understanding of the behavioural sciences and its experience testing behavioural interventions with CC4C's clinical expertise and context, whole-healthcare system networks and understanding of the public health and policy landscape.

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1.4 Project sites

For this report, we will be collecting data and conducting fieldwork at two different hospital sites, which both cover disparate patient populations.

St Mary's Hospital is part of Imperial College Healthcare NHS Trust and is one the specialist major acute hospitals for north west London. It is a major trauma centre which provides a full range of services including paediatric and adult emergency departments, general paediatric inpatient wards and tertiary specialist paediatric services. There is a UCC on the hospital site, run by a company separate to Imperial College Healthcare NHS Trust which we were unable to visit. There are around 27,000 attendances of children aged 17 and below at St Mary's PED and UCC.

Northwick Park Hospital is part of London North West Healthcare NHS Trust and a major acute (general) hospital in the London Borough of Harrow. The hospital provides a full range of services including paediatric and adult emergency departments, and paediatric inpatient wards. Northwick Park Hospital UCC is part of Greenbrook Healthcare and is located within the Northwick Park Hospital



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building, co-located with the paediatric and adult emergency departments. There are around 36,000 attendance of children aged 17 and below at Northwick Park PED and UCC.

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2. Literature Review

In this section, we review the literature examining why parents bring their children to emergency departments for illnesses which turn out to be nonurgent. In addition, we evaluate existing evidence on interventions targeting emergency reattendance in parent and child populations and look for any lessons that could be learned from adult populations.

2.1 Why parents bring children to PEDs

Key findings:

Our literature review helped us to understand the reasons why parents bring their children to PED. These reasons fall into four broad categories: (i) parental worry, (ii) perceived quality of PED/issues with primary care, (iii) impact of social networks and (iv) structural factors.

There are many drivers of non-urgent PED attendance. We identified six recent surveys (described in Appendix 2) from the UK, Australia, USA and France which examine the motives of almost 1,500 parents who attended PED with non-urgently ill children.^{1, 10, 14-15, 27-28} We only selected surveys from the last decade.

We used these six surveys to identify 12 key reasons that explain why parents attend PED for non-urgent childhood illness. We have grouped these reasons into four categories, shown in Figure 2. We now explore these reasons in more detail, drawing on the six surveys in Appendix 2 as well as broader literature.

Figure 2: Why parents bring children to PED in non-urgent situations

Reasons why parents bring children to PED	Identified from <i>Appendix 2</i> studies
(i) Parental worry	
1. Perception of the seriousness of the child's illness	A, B, C, D, E
2. Need for reassurance	Α, Β, Ε
3. Lack of health literacy ^{vi}	В, Е
4. Lack of understanding about healthcare services	В, Е
(ii) Perceived quality of PED / issues with primary care	
5. PED staff have greater expertise with children	D, F
6. PED is convenient and provides better quality of care	D, F
7. Lack of access to primary care services	C, D, E, F
8. Dissatisfaction with quality of primary care	A, F
(iii) Impact of social networks	
 Desire to be considered by others as a responsible parent 	В
10. Pressure from family, friends and social media	В, Е
11. Erosion of traditional support networks	E
(iv) Structural factors	
12. Referred by a healthcare service	C, D, E

^{vi} Health literacy refers to the degree to which people obtain, process, and understand basic health information and services.

(i) Parental worry

Parents who are particularly worried about their child's illness are more likely to attend PED non-urgently. This worry often arises because parents misdiagnose their child's illness as requiring urgent treatment. Indeed, Williams et al. (2009) found that 60% of parents rated the perceived severity of their child's illness as the primary or secondary reason for their PED attendance, even though all the children in that survey were ultimately classified as having non-urgent illnesses.¹⁵ Another survey found that 63% of 106 parents whose child was triaged as non-urgent described the child's condition as "very" or "extremely" urgent.²⁸ Another found that 94% of 800 parents considered their child's illness to be urgent, but only 27% of these cases were classified as urgent by physicians.²⁹ Lastly, 64% of parents making non-urgent presentations at PED in Edinburgh reported the highest degree of worry about their child's condition on a scale of one to five.³⁰ These studies show that parents often perceive PED as the most appropriate place for their child's illness, even when this illness turns out to be non-urgent.¹⁴

How much a parent worries about their child's health can vary depending on the parent's age and how much childcare experience they have. For example, Ogilvie et al. (2016) found that young parents (aged 24 and under) reported much higher levels of stress when attending PED than older parents in the same situation.¹⁴ They also reported higher levels of worry, and less confidence in their ability to manage their child's illness. This pattern was also observed by Neill et al (2014), who found that first-time parents tend to seek advice from healthcare professionals more readily because they have less confidence in their ability to self-manage their child's health.³¹ Costet Wong et al. (2015) found that parents of a single child, who also tended to be less experienced with managing unwell children, were more likely to rate the concern they felt for their child's suffering as an important reason for their PED attendance.²⁷ The age of the child also influences parental perceptions of illness. For example, Ogilvie et al. (2016) found that parents tended to be particularly worried about non-urgent illnesses when the child was under the age of one.¹⁴

These feelings of worry and anxiety can encourage parents to attend PED, partly out of a desire for reassurance that they are doing the right thing. Rowe et al. (2015) quote one parent as saying "*When you go into A&E you think 'am I worrying about nothing?' but they always reassure you – they tell you that you've done the right thing and that you're not wasting their time.*"¹ Costet Wong et al. (2015) found that two of the most strongly endorsed reasons for attendance were "*I was anxious for my child*", and "*I wanted quickly to have a diagnosis for my child*".²⁷

Rowe et al. (2015) found that parental anxiety can be particularly acute at night, quoting one mother of a young child as saying "*It feels incredibly isolating when you have a crying baby at night with no-one around to help. The responsibility can be overwhelming.*"¹ A parent's level of health literacy can also affect how much they worry about a child's illness.³² People with low levels of health literacy tend



to make less appropriate medical decisions, such as routinely considering all fevers to be harmful regardless of their severity.³³

In summary, the negative emotions parents feel about their child's illness, such as worry, fear, panic and anxiety, may lead them to attend PED non-urgently, either because they overestimate the danger of their child's illness, or because they want personal reassurance that they are doing the right thing. These emotional factors may result in parents going to PED even when they are advised not to attend. For example, one analysis of 76,000 calls to NHS 111 found that 30% of callers with a child under five years old went to PED despite receiving advice to use another healthcare service.³⁴

(ii) Perceived quality of PED / issues with primary care

Parents often reported attending PED non-urgently because they thought PED staff had the training and resources to treat sick children to a high standard. For example, Rowe et al. (2015) found that "*when it came to seeking medical attention for their children, some parents felt that GPs may lack the kind of specialist paediatric knowledge needed to be able to diagnose and treat their child appropriately*".¹ Williams et al. (2009) found that 18% of parents cited their perception of PED as a 'one-stop shop' where their child could receive a large array of medical treatment and tests as a main reason for attending.¹⁵ The PED environment is also seen by some parents as being more child friendly than local health services. Berry et al. (2008) quote one parent as saying that attending PED means "*a better interaction with children than if you go to just any clinic, because I think [PED is] prepared for children.*"²⁸ Other surveys find that some parents report feeling more comfortable in a place where all the other attendees are parents with sick children and they do not have to 'compete with' unwell adults for medical attention.²⁹

Parents often contrast this perception of PED as a high-quality provider of child health care with the issues they face when accessing or using primary care. Of the six surveys described in Appendix 2, four highlight a lack of access to primary care as a main reason parents attended PED non-urgently. Parents who did receive a GP appointment sometimes reported dissatisfaction with the quality of care they received. Rowe et al. (2015) found that "*when it came to seeking medical attention for their children, some parents felt that GPs may lack the kind of specialist paediatric knowledge needed to be able to diagnose and treat their child appropriately*".¹ This can lead to parents preferring to attend PED, where they feel that they have access to more specialised medical care.³¹ For example, Williams et al. (2009) found that 24% of parents cited the expertise of doctors at PED as a key reason for attendance.¹⁵ A positive past experience in PED can also encourage parents to reattend in the future.²⁸

The majority of the surveys highlight that parents and carers attend PED because of a lack of access or perceived lack of access to other services (particularly

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primary care).^{1,10,15,28} A commonly reported reason by parents for PED attendance is because they are unable to get a GP appointment.³⁰

(iii) Impact of social networks

Parents may attend PED because they feel pressure to 'do the right thing' both for their child and in the eyes of others, or because they are searching for recognition of parental competence.³⁵ Costet Wong et al. (2015) found that some parents viewed going to PED as a sign of responsible and loving parenthood, although this was not among the main reasons for attendance.²⁷ Rowe et al. (2015) found that a minority of parents attended PED partially to placate their family members' concern, quoting one parent as saying "*I wasn't too concerned when [the child] started wheezing as he had a cold at the time...but I felt I should go [to PED] because my sister was so worried."¹*

Reaching a decision on where and when to seek medical attention is often a social process,³⁶ meaning that parents often attend PED after receiving advice from a friend or relative.²⁸ For example, Ogilvie et al. (2016) found that 29% of parents reported advice they received from someone as being an important reason for their attendance at PED.¹⁴ Rowe et al. (2015) identified some social factors explaining why concern for an unwell child may be more likely to translate into attending PED compared to in the past.¹ For example, modern family structures tend to be more dispersed compared to previous generations, meaning that parents are less able to draw on grandparents for help when their child is unwell.

Another issue is that modern parents have access to online forums and search websites. Although these websites can provide parents with valuable healthcare information, they also rely on the reader to curate their contents and judge which sources of information are reliable and relevant to their own situation. In some cases, these websites increase parental anxiety. For example, Rowe et al. (2015) quotes one parent as saying "*Google is very useful sometimes but it can also be dangerous – you put in a symptom and it tells you that your child has meningitis.*"¹ Similarly, some respondents in that survey reported being confused by conflicting healthcare advice on forums like Mumsnet compared to official websites like NHS Choices.

(iv) Structural factors

Parents may attend PED because of external or structural reasons. For example, parents may have followed the advice of a medical professional to attend PED, or they may have limited access to primary healthcare services because of work commitments or a lack of out-of-hours services in their area.³⁷ Another potential issue is whether parents receive advice from a GP who unnecessarily refers non-urgently ill patients to PED. For example, one study examining GPs working for the same out-of-hours service and caring for the same patient population (adults and children) found that some of them were five times more likely than others to

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recommend patients go to an emergency department.³⁸ However, although physicians and healthcare experts often cite structural factors as an important reason for non-urgent PED attendances, only 6% of parents in Costet Wong et al.'s (2015) survey stated they attended PED because of these factors.²⁷

2.2 Interventions to reduce non-urgent hospital attendance and improve health behaviours

Key findings:

This area is moderately well studied and the literature shows that educational information related to specific childhood illnesses delivered to families in the community can be successful at reducing PED reattendance rates, while video education and other interventions delivered in PED or at the point of discharge are ineffective. Studies in adult populations demonstrate personalised discharge instructions and telephone follow-up are effective at reducing hospital reattendance rates, although these are expensive and complex to introduce.

This section reviews studies which have attempted to reduce the number of nonurgent hospital attendances, or improve health behaviours more generally. As the methods of these studies often differ depending on the age of the people being targeted, we have separated the reviewed studies into those targeting child versus adult populations. Studies with adult populations were included to examine transferable lessons. These studies include both comprehensive programs which modify entire discharge hospital procedures, and less resourceintensive interventions which may involve a text message or letter.

One motivation for interventions like these is that around 20-30% of patients leave hospital not understanding the instructions they receive concerning follow-up care.^{39,40} This is concerning, because patients with clear guidance on how they should manage their health should be less likely to return to the hospital non-urgently.⁴¹ A related issue is the fact that many patients often forget the information they are given, especially when the patient is anxious.⁴²

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2.2.1 Interventions targeting child and parent populations

Key findings:

- There is moderate evidence that providing tailored discharge plans to families attending PED improves a child's health outcomes and improves parental knowledge of child illness.
- There is high quality evidence that face to face educational interventions targeting specific childhood conditions (e.g. asthma) are effective at reducing PED reattendance rates and reduce the rate of hospital admissions.
- The effect of education booklets on minor childhood illness is mixed. The evidence demonstrates that they have been effective at reducing hospital reattendance in some specific populations and ineffective in others. There is an absence of evidence assessing why this is the case.
- Literature shows that video education in PED or at the point of discharge had no significant effect on reattendance rates.

A recent review concluded that providing tailored discharge plans to families attending PED improves patient health outcomes.⁴³ However, only four studies, of which three used randomised designs, were included and only one measured hospital reattendance rates as a main outcome. Additionally, all four of these studies were based in the US. We describe these four studies in greater detail below.

Hussain-Rizvi, Kunkov, and Crain (2009) conducted an RCT in a New York PED which gave the parents of asthmatic children the chance to practise administering inhaler treatments before discharge. Children in the treatment group reported a reduction in the frequency of cough after two weeks compared to parents who did not receive these instructions.⁴⁴ Yin et al. (2008) report another RCT in a different New York PED which gave parents pictograms showing dosage instructions and the preparation method for their children's medication. These parents were also asked to repeat back their understanding of how to follow these instructions (the 'teachback' method). These parents showed significantly improved knowledge of medication preparation, higher adherence rates, and lower dosing error rates.⁴⁵

Zorc et al (2003) conducted a RCT which involved helping parents to book primary care follow-up appointments during and after their PED visit; this study measured hospital reattendance as one of the outcome measures. The intervention led to significantly more parents seeing their primary care physician for a follow-up appointment, but did not affect their future likelihood of returning to PED.⁴⁶ Patel et al. (2009) describe a non-randomised trial in which a discharge facilitator reinforced the written instructions issued to families in the

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parent's preferred language. This intervention improved the ability of non-English speaking families to identify warning signs and symptoms in their children.⁴⁷

Other reviews in this area have focused on interventions targeting specific conditions such as asthma, fever, and respiratory infections. In one review of 38 RCTs, Boyd et al (2009) examined the effect of providing asthma education to parents whose children had recently attended PED.⁴⁸ This intervention gave families individual written action plans; education about environmental asthma triggers; and materials to improve their ability to identify warning signs and negative symptoms in their children. The authors found that children whose parents received these interventions were, in follow-up periods ranging from 12 weeks to two years, 27% less likely to reattend PED and 21% less likely to be admitted to the hospital.

A similar review by Walsh and Edwards (2006) of studies published from 1980 to 2004 found that educational interventions can improve parents' ability to manage feverish children.⁴⁹ For example, Robinson and Magwene (1989) describe a US RCT targeting over 500 children who attended a paediatric clinic because of fever.⁵⁰ Half of the parents were shown a ten-minute slide-show entitled "Fever in children: Fears and facts". All parents were given a pamphlet which covered the main points in the slide-show. Compared to parents who only received the pamphlet, parents who also saw the slide-show itself had significantly better fever knowledge after three months, and after six months had 35% fewer fever-related reattendances.

Francis et al. (2009) examined the effect of training clinicians in the use of an eight-page interactive booklet about respiratory tract infections in children.⁵¹ This booklet was designed to improve communication during consultation with patients and act as a take home resource for parents. Using a cluster RCT design involving 61 GPs across England and Wales and 558 parents, the authors found 55% of parents who received the booklet self-reported being likely to attend the GP in the future for a similar illness compared to 76% of parents who did not receive the booklet.

Another study from 2010 involving almost 600 parents in 35 US states evaluated an easy-to-read self-help guide called 'What to Do When Your Child Gets Sick'.⁵² Parents who received the booklet self-reported to be 58% less likely to attend PED and 42% less likely to attend a GP over a 3-year period. Another RCT from 1990 involving 98 families attending a Danish GP examined the effect of a 15-page booklet for managing childhood illness.⁵³ The authors found that parents who received this booklet were significantly more likely to undertake self-treatment at home. Lastly, an RCT reported by Thomson (1999) tested the effect of providing parents with an illustrated 'Baby Check' booklet for evaluating illness in very young babies.⁵⁴ This study found that the booklet did not affect the mothers' use of healthcare services.

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An alternative intervention delivery mechanism that has been studied is video education. One RCT involving 280 parents presenting to PED with feverish young children tested the effect of providing a brief educational video on the home management of fever (during their time in PED).⁵⁵ While parents who watched the video were measured to have improved knowledge about childhood fever, they were as likely to return to PED because of fever as parents who had not seen the video. Another RCT involving 130 parents tested the effect of providing both a video resource and information booklet.⁵⁶ The authors found that giving parents a ten-minute video on child healthcare and a booklet on minor child illnesses had no significant effect on their likelihood of contacting a primary care physician or returning to PED after six months, compared to parents who received standard discharge advice.

A similar RCT in Canada involving 246 children exposed parents in a PED waiting room to a video about managing common childhood illness.⁵⁷ These parents were also provided with a pamphlet containing similar information. This intervention had no significant effect on PED reattendance rates measured through number of repeat visits to PED. We can conclude from this that video education in PED or at the point of discharge had no significant effect on reattendance rate.

Although not all of these educational interventions were successful we have identified positive findings with regards to adherence to medication, identification of warning signs of illness in children and child health literacy. This indicates that parents' attendance behaviour can be influenced with the introduction of a healthcare intervention targeting these areas. Adaptation of interventions that are both acceptable to parents and successful is likely to help address non-urgent reattendance of children at emergency and urgent care.

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2.2.2 Interventions targeting adult populations

Key findings:

- High quality evidence demonstrates adult discharge planning interventions (such as giving personalised discharge plans, teaching self-management techniques and written or telephone follow-up) are effective at reducing hospital readmission rates. However, these discharge planning interventions are complex and expensive, and it is difficult to ascertain which of their individual components changed patient behaviour.
- Good evidence shows telephone follow-up reduces emergency attendance and hospital readmission rates of adult patients.
- Text messages have a significant, modestly positive effect on many adult health behaviours. The effectiveness of different frequencies of text message reminders is context dependent and needs further testing. Empathetic text messages are more effective than messages stating financial costs to the health service.

This section reviews discharge interventions aimed at adults to identify any transferable lessons that we can apply to parent and child populations. Interventions targeting these adult populations differ from those targeting child populations in important ways. For example, many of the studies reviewed in this section target patients already admitted to hospital, a group which tends to take a longer time to discharge, and require more follow-up care and self-management. Additionally, some of these studies focus on reducing readmission rates, rather than reattendance rates. Readmission refers to a patient who is admitted to a hospital after being discharged from an earlier hospital stay – it therefore differs from reattendance, which measures whether a person returns to the hospital (but is not necessarily admitted) after attending recently. Lessons which are relevant for the PED context can be drawn from studies examining both types of outcomes.

Leppin et al.'s (2014) meta-analysis of 42 RCTs found that discharge interventions reduced 30-day readmissions by 18% on average, and that multifaceted trials were 40% more effective at reducing readmissions than other interventions.⁵⁸ Another meta-analysis of 24 RCTs of discharge planning interventions concluded they can reduce the length of hospital stays and the hospital costs caused by readmission, and improve patient satisfaction.⁵⁹ Lastly, a review of 21 RCTs found that interventions which gave patients personalised discharge plans, taught self-management techniques and reinforced learnings through follow-up were the most effective at reducing readmissions.⁶⁰

A particularly successful example of a hospital discharge intervention is the ReEngineered Discharge program (Project RED), which successfully reduced

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readmissions by 32% over a four-month period in a US hospital.⁶¹ Project RED is a comprehensive training program designed to improve hospital discharge processes by having patients and nurses work together to produce a personalised discharge plan. This plan typically includes some high-level information to help the patient manage their health as well as possible, after they leave the hospital. For example, a plan may include specific strategies for overcoming problems likely to arise (e.g. the patient may have transportation issues for follow-up appointments, which they can plan to address by travelling with a friend). The plans also include specific written recommendations for how the patient should manage their health condition. There is also a follow up phone call to the patient within three days of discharge to reinforce the discharge plan and resolve any problems (e.g. provide advice on medication side effects).

The Care Transitions Initiative (CTI)⁶² and Transitional Care Model (TCM)⁶³ use a similar approach to Project RED. Both programs deploy a dedicated nurse to manage and personalise the discharge process, and both include follow-up home visits and phone contact shortly after the patient leaves the hospital. Both have also been well-evaluated; a RCT of the TCM program found that it led to fewer readmissions, and a trial evaluating the CTI program found that it decreased readmission rates in one hospital from 17% to 7% at 30 days and 31% to 9% at 90 days.⁶⁴ One caveat relating to these findings is that both programs targeted geriatric patients, who face different post-discharge challenges to parents minding sick children. Nonetheless, they suggest potentially large benefits from personalising discharge instructions and providing patients with follow-up contact.

One drawback of interventions like Project RED and the Care Transitions Initiative is that they are complex and expensive. Additionally, these programs change many parts of the hospital discharge process at the same time, making it difficult to ascertain which of their individual components most effectively changed patient behaviour. For example, it may be that follow-up contact with patients is an effective way to improve post-discharge health behaviours. Or, it is possible that receipt of written information, or the phone call after discharge made an impact.

Box 2: Reducing non-urgent Emergency Department reattendance by adults in East Kent

In 2015-16, BIT ran a RCT to reduce non-urgent reattendance at East Kent Hospitals University NHS Foundation Trust. This intervention targeted almost 11,000 adults who recently attended the Emergency Department, but whose health concerns could have been addressed elsewhere. Half of this group were sent letters reminding them that "*there are easy, local ways to get medical advice, without having to wait in A&E*" – these other healthcare options were detailed in an information box (shown below). A leaflet was also provided which listed locations and contact details for GP clinics and minor injury units.

HEALTH	If you need to get advice and find the right local health service for you				
helpNOW.	 Health Help Now is a free website and app to find the most appropriate local health service for common symptoms, and to get medical advice for people of all ages. Visit <u>www.healthhelpnow-nhs.net</u> 				
	If it's not an emergency, but you need medical help fast				
1111	 NHS 111 is available 24 hours a day. Calls are free from landlines and mobile phones. 				
	 111 will give you advice and directions to any local health service that you need. 				
Go to a Minor	If you need to see someone today for minor illnesses and injuries				
Injuries Unit	 A Nurse Practitioner can give advice and treatment for minor illnesses and injuries in adults. You do not need an appointment. 				
	 Please see the enclosed leaflet to find the centre closest to you. 				
Call your GP	If you need to see a doctor for an illness or injury that won't go away				
	 If you need to see a GP urgently when your GP practice is closed, call 111. 				
L The letters were sent from January to September 2015, and reattendance data					
significant effect on reattendance rates: people who received the letter were					

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Included with the letter was a leaflet that identified local GP clinics and minor injuries units. We speculate that this study did not detect a significant difference because of the confusing names of different NHS services in the leaflet. For example, one healthcare site was called an 'emergency care centre' but did not offer a full emergency department service. Plus, patients that attended that 'emergency care centre' were contacted to be told they could have gone elsewhere, however the leaflet recommended the same 'emergency care centre' they had already attended (because it was also a minor injuries unit).

Phone calls have been tested in isolation to determine whether they can improve patient health. Two reviews involving over 35,000 patients in total found that people who received a follow-up phone call within 72 hours of discharge from an inpatient hospital unit were 26% less likely to be readmitted after 30 days, compared to those who did not receive a phone call.^{65,66} Nurses in these studies contacted the patient (or their carer) by phone and reviewed the hospital discharge summary. During the conversation, the nurses followed a script containing a series of open-ended questions designed to address issues associated with hospital readmission. They were also given information about the patient's discharge instruction and medications; their ability to fill prescriptions; their follow-up plan; and details of who to contact with questions about recovery and homecare services.

A US study involving almost 200 parents tested the effect of providing standardised discharge instructions with phone follow-up. These instructions were delivered in-person by staff during discharge and followed up by phone one and three days later. The group which received these instructions were significantly less likely to return to ED by day three (3.1% reattendance) compared to a control group which did not receive the discharge instructions (10.1% reattendance).⁶⁷

Perhaps the lowest-cost way to coordinate follow-up patient contact is through text messaging. Three meta-analyses of 65 RCTs targeting 33,000 participants conclude that text messages have a significant, modestly positive effect on many health behaviours,⁶⁸ including medication adherence; appointment attendance; and management of chronic disease.⁶⁹ These studies identified two important ways the effectiveness of the messages varied. Firstly, Orr and King (2015) found that sending multiple texts per day was around 60% more effective than sending one per day, several times per week or once only.⁶⁹ In contrast, Pop-Eleches et al. (2011) found that weekly text messages that reminded people to take HIV medication increased adherence, but daily text messages were ignored and did not change behaviour, suggesting that overly frequent text messages can backfire in certain contexts.⁷⁰

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Head et al. (2015) found that using a mix of text messages (i.e. ones tailored for particular individuals and ones tailored for a particular target audience) were 60% more effective than those using individual messages only, and six times more effective than those using targeted messages only. Head et al. (2015) also found that the effects did not notably differ depending on the different population or health behaviours, suggesting that texting is a robust way to change behaviour.⁶⁸ Finally, Hallsworth et al. (2015) identified that the content of text message reminders constitutes a major part of their overall effect, with empathetic messages having more of an impact than stating financial costs to the health service.⁷¹ This suggests that empathetic communication is more likely to influence health behaviours.

In this section, we have reviewed the reasons why parents bring children to PED in non-urgent situations. We have also examined previously evaluated interventions that aim to address this issue. This review will allow us to identify aspects of successful initiatives that are likely to be effective in our North-West London parent and child population. Our next step is to understand the local context (and how this compares to the literature) and observe the behaviours at play through fieldwork.

3. Fieldwork at St. Mary's and Northwick Park

Key findings:

We determined five main reasons parents attend PED non-urgently through observations and semi-structured interviews. These were closely aligned with our literature review findings. During our fieldwork, we observed a number of behavioural biases that influence parents' decision-making when managing an unwell child. These are:

- risk aversion;
- default bias;
- availability bias;
- hot and cold decision-making;
- social norms;
- messenger effect; and
- confirmation bias.

Parents and healthcare professionals identified the improvement of discharge information as an opportunity for addressing some of these behavioural biases.

This section describes the results of our fieldwork at St. Mary's PED, Northwick Park PED and Northwick Park UCC. Although there is also a UCC at St. Mary's Hospital, we were unable to conduct fieldwork here.

The fieldwork was conducted from October 2016 to January 2017 by five different members of the research team. We conducted two types of fieldwork: the first was observation sessions, which involved shadowing healthcare professionals working at the three sites and observing interactions between parents, doctors and nurses; the second was semi-structured interviews with parents and healthcare professionals. The main goals of the fieldwork were to understand how parents with unwell children proceed through the hospital system (i.e. to understand the 'patient journey'), to ask parents and healthcare professionals why they thought parents attended the hospital non-urgently, and to hear from these groups about what changes they thought would reduce non-urgent reattendances.

In order to ensure our observations and interviews were as effective as possible, we tried to limit common biases in our fieldwork methodology. They include:

- being aware of how psychological bias on our part may affect the way we gather and interpret information (e.g. confirmation bias may lead us to seek support for our preconceived ideas about why parents attend PED);
- an understanding of how the context in which people provide information may influence their behaviour (e.g. a doctor who treats a patient differently

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because they are conscious of being observed, or a parent who feels more comfortable speaking honestly in a 1:1 setting rather than in a group);

 a careful framing of our questions so that they do not encourage certain types of inaccurate responses (e.g. avoiding leading or charged questions).

3.1 Methodology

3.1.1 Observation sessions

Between October 2016 and January 2017, we conducted 14 observation sessions across St Mary's PED, Northwick Park PED and Northwick Park UCC. These observations covered parts of 29 different shifts, spread over the days of the week (see Appendix 3 for a detailed breakdown of observation sessions). Of these 29 shifts, 16 were in the 'out-of-hours' period when GPs are closed, meaning weekdays from 18:30 to 08:00, or weekends. This meant that we observed both busier and quieter times, allowing us to see whether the dynamic between parent and healthcare professionals changes depending on time pressure. For all observation sessions, Ben Holden (Clinical Research Fellow, CC4C) accompanied a researcher from BIT to make introductions, answer clinical questions and appropriately escalate any medical concerns observed.

During the observation sessions, we recorded how parents interacted with the hospital environment and how doctors and nurses interacted with parents. We also followed patients through the PED and UCC process; reviewed existing materials given to patients; and reviewed the ICT systems used by staff members. We attempted to limit possible effects of social desirability bias (the tendency for people to answer questions or behave in a way which shows them in a positive light) and Hawthorne effects (the tendency for people to behave differently because they know they are being watched) by remaining unobtrusive and emphasising that we were there to observe the service, not to judge the people working in it.

3.1.2 Semi-structured interviews

We developed two interview guides for semi-structured interviews: one for healthcare professionals, and the other for parents. All participants gave informed consent to take part in an anonymous interview. The interviews lasted an average of 30 minutes and were conducted in person by Ben Holden, alone or jointly with a member of the BIT research team, at a location convenient for the interviewees. In total, 8 parents and 12 healthcare professionals were interviewed (see Figure 3 for details).

The interview guide for parents asked their views on managing childhood illnesses; where they normally find healthcare information; and their opinion about PED. The interview guide for healthcare professionals, asked about their

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experiences of non-urgent attendances; their opinions on why families attend non-urgently; and what tools they think would improve the decision-making of these families. Both interview guides incorporated elements of previous guides published in Walsh et al (2007)⁷² and Jones et al (2014)⁷³ and are available in full in Appendices 4 and 5.

Although the healthcare professionals interviewed were recruited from St Mary's PED, Northwick Park PED and Northwick Park UCC, we did not interview parents in the hospital environment itself. This was because we wanted to avoid the potential risk of causing emotional distress to the families. Instead, parents for the interviews were contacted through local community events such as 'Mother and Toddler' groups and 'Enjoy your baby' classes, where they were asked if they were willing to take part in a longer interview. All the parents interviewed lived in White City, a district in the London Borough of Hammersmith and Fulham.

	Number of interviews at each site			
Interviewee	St Mary's PED	Northwick Park PED	Northwick Park UCC	Local community
Parent				8
Healthcare Professional (breakdown below)	6	3	3	
PED Consultant	1	1	n/a ^{vii}	
PED Registrar	1	1	1	
Paediatric nurse	4	1	n/a	
UCC GP	n/a	n/a	1	
Emergency Nurse Practitioner	n/a	n/a	1	

Figure 3: Summary of semi-structured interviews

^{vii} These are stated as `n/a' (not applicable) because of the difference in set up at UCC and ED departments. Where `n/a' is listed against a department, the department does not employ these particular healthcare professionals.

3.2 The patient journey at St. Marys and Northwick Park

One key goal of the fieldwork was to understand how parents with unwell children are processed through the hospital system at St. Mary's and Northwick Park. Both are representable of other PEDs and UCCs and allow our findings to be relatable and scalable. This understanding was developed through both our observation sessions and interviews with staff at the hospital sites. Our representation of the patient journeys at both sites are grouped into three phases and shown in Figure 4 (St. Mary's) and Figure 5 (Northwick Park).

Phase A - Arrival

As you will see from the flowcharts describing the patient journeys (Figure 4 and Figure 5), paediatric patients enter the emergency and urgent care pathway by arriving via ambulance, self-referring to the departments or by being referred by their GP or NHS 111. Our report focuses on non-urgent attendances excluding those that arrive by ambulance or are referred by another healthcare professional. However, for completeness we include these in our overview of the pathway.

Phase B - Initial assessment and service allocation

Families that self-refer initially register at a reception desk and then wait to be assessed by a healthcare professional. At St Mary's this encounter with a professional is called 'paediatric triage' – all children that present see a specialist paediatric nurse. This nurse assesses the severity of the child's illness and decides whether they should stay in PED or be sent to UCC. This decision is made based on certain exclusion criteria.^{viii}

At Northwick Park this initial encounter with a professional is called `streaming' – all children see an emergency nurse practitioner (ENP) who has no specialist paediatric training. The ENP decides whether they should stay in UCC or be sent to PED. Once the child has been allocated to either UCC or PED the processes are largely similar between the hospital sites.

Phase C - Medical assessment and decision to admit

In PED, depending on the severity of the child's illness, they are allocated a bed or remain in the waiting room. Once they have been reviewed by a doctor and received any required tests or treatment (medical assessment), they are either admitted, observed for more time or discharged from PED. In UCC, they wait to be seen by a GP or primary care paediatrician^{ix}. After their medical assessment,

^{viii} The full list of exclusion criteria for St Mary's Hospital UCC can be found in Appendix 6.

^{ix} Paediatrician in Northwick Park UCC: St. Mary's UCC and Northwick Park UCC differ slightly in staffing. Whilst both sites employ GPs and nurses, Northwick Park UCC also employs a paediatrician who covers a variety of shifts and will see all patients under 15 when he is available. This role was introduced several months ago in response to rising paediatric demand, and it appears to be working well. However, it seems plausible that parents may become more likely to attend the UCC once it is commonly known that a paediatrician is available here, which may in turn raise demand. Another unintended consequence we noted during our observations was that the GPs at Northwick Park UCC no longer routinely see children when the

langle connecting care for children

they are either discharged or, if they require hospital-level care, they are referred to PED for further management by hospital specialists.

A detailed description of the patient journeys through UCC and PED at both St Mary's and Northwick Park Hospital can be found in Appendix 7.

paediatrician is working a shift at Northwick Park UCC, leading to longer waiting times during busy periods and de-skilling of the GPs.



Figure 4: The patient journey at St Mary's Hospital PED and UCC *Note: the key illustrates the parts of the pathway that belong to each service (either UCC or PED).*





Figure 5: Northwick Park Hospital PED and UCC

Note: the key illustrates the parts of the pathway that belong to each service (either UCC or PED).



3.3 Comparing St Mary's Hospital and Northwick Park Hospital processes

In this section, we compare the patient journeys at St. Mary's and Northwick Park Hospitals.

Determination of suitable department

The two hospitals have a different approach to and relationship with the UCCs. The main difference is that, at Northwick Park, children are first seen by a nurse in the UCC (streaming) who decides if the patient's illness is severe enough for PED. This process is almost reversed in St Mary's, where patients are first seen by a nurse in PED (triage) who determines if a patient is non-urgent enough to be seen in UCC.

One benefit of an additional streaming process is that it takes the responsibility to choose the right service (UCC or PED) away from the parent, as that decision is made by a healthcare professional. Furthermore, the streaming process is very quick which decreases potential waiting times to see a healthcare professional. The downsides of streaming are that although the ENPs that conduct streaming are very experienced in emergency medicine, they are not trained specifically in paediatrics. Furthermore, because of the rapid nature of streaming, this means that clinical details can be missed; this can lead to incidents requiring investigation. Streaming takes place in an open space close to the waiting room which means that sensitive information may be less likely to be discussed; background noise can prevent correct understanding; and nurses are interrupted by other patients.

Triage takes much longer than streaming and can mean, at busy times, there is a longer wait for an initial assessment by a healthcare professional. The additional waiting time for children to see a healthcare professional risks delay in seriously unwell patients being identified, which could delay immediate treatment.

Written information provided at the point of discharge

There is substantial variation in the amount of information delivered to families at the point of discharge at both hospital sites. Occasionally families receive detailed discharge instructions and information; at other times they are just told that their child is well and can go home. This variation is dependent on:

- the reasons for the attendance;
- the number of staff working in the department during a particular shift;
- the number of patients in the department at any one time;
- the severity of the child's illness; and
- the need for further follow-up.

We noted that discharge plans and condition-specific information leaflets are available in the PED. These leaflets varied in quality and were rarely given to parents during our observation sessions. Examples of these from both hospital sites can be found in Appendices 9-11.
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Co-location

St Mary's UCC is located 5-10 minutes' walk from the ED and cannot be accessed directly through the same hospital building. In contrast, Northwick Park ED and UCC are located within the same building. Variations in the location of emergency and urgent care services may affect families' experiences and perceptions of urgent care. For example, it is likely that patients at Northwick Park do not realise they are being seen by the UCC instead of the ED.

At Northwick Park, we are unable to distinguish patients who had intended to be seen by UCC in order to receive urgent primary care from those who intended to be seen by PED. However, at St Mary's it is clear that that all patients intended to go to PED.

Emergency and Urgent Care Policy

The current UK political climate appears to be shifting in favour of the Northwick Park model of assessing patients first in UCC rather than the St. Mary's model. In March 2017, the Chancellor of the Exchequer announced that the NHS in England will receive an extra £100m in 2017-18 to invest in triage by GPs and other measures to ease the flow of patients into hospital emergency departments and ensure that patients were seen quickly in the appropriate setting.⁷⁴

3.4 Why parents attend St. Mary's and Northwick Park Hospitals with children with non-urgent illnesses

In addition to understanding the patient journey at St. Mary's and Northwick Park Hospitals, another goal of our fieldwork was to understand why parents attend these two hospitals with non-urgently ill children. This section summarises the findings of our interviews with 12 healthcare professionals and 8 parents, as well as our own observations of interactions between parents and PED staff. We also supplement these observations with our analyses of how behavioural biases may be affecting the decision-making of parents in a way which encourages them to attend PED (these biases are detailed in Box 3). While the number of people we interviewed is small, it is worth noting that our findings are similar to those found in the surveys of 1,500 parents described in Section 2.

(i) Perception of other healthcare services

Key findings:

- There is a large variation in parents' knowledge of available healthcare services for children.
- Parents are generally not aware of the existence of out of hours GP services.
- Families are sceptical about the medical knowledge of pharmacists and would rarely consider seeking healthcare advice from them.
- In many cases, families attend because they were either dissatisfied with their GP or perceived a lack of availability of GP appointments. Some parents perceive that GPs are not equipped to deal with specialist nature of childhood illness.
- Distrust of other healthcare services, combined with a positive perception of PED means that PED is considered the default option.

We observed considerable variation among parents in terms of their knowledge of available healthcare services. One parent said "it feels like the NHS is constantly changing but A&E is always open, so we come here." Healthcare professionals also described parents having "a poor awareness of what services are available", citing examples of cases where parents were not aware of the NHS 111 service or had not visited a pharmacy for over the counter medications. Several parents reported scepticism about the medical knowledge of pharmacists, with one parent saying "I wouldn't ask a pharmacist for health advice, the only time I go to the pharmacy is if my children get new medication prescribed by the GP and I'm not too sure about it." Another said "I just see [pharmacists] as being there to dispense medication, I don't see them as there to help advise on medical issues." A healthcare professional said that "most people think [pharmacists] are shopkeepers. They don't recognise their clinical skills." From a behavioural perspective, this distrust in other healthcare services, combined with a positive perception of PED, may encourage parents to think of PED as the default place they should go to when their child is unwell. This 'default bias', expanded on in Box 3, may mean that parents do not appropriately evaluate the healthcare services available to them when their child is unwell and instead, attend PED as their first port-of-call, even when their child's illness is nonurgent.

A majority of interviewed parents reported dissatisfaction with their GP as a reason for attending PED. Several families stated that they attended because they had been unable to get a GP appointment. One parent said that "*it's easier to walk in at A&E than to get a GP appointment.*" A healthcare professional gave the example of a patient who, unable to secure a GP appointment, "*couldn't get the rest of [their antibiotics] course so they ended up back in [PED].*" At some times during the week, parents and healthcare professionals reported that GP surgeries were closed. For example, a number of parents in PED expressed dissatisfaction

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that their GP was always closed on a Thursday afternoon. Although GPs are required to offer an out-of-hours service through NHS 111, many parents we spoke to were not aware this existed.

Another criticism parents had of GPs was that they did not have the skills to treat a sick child. One parent said "There is no point in calling your GP as the GPs are not helpful at all with children... there are lots of parents that are all saying the GPs are rubbish." Another, talking about a time when their child was unwell, said "the GP was hesitant about further treatment; I came away without really knowing what I could do." Another said "I went to the GP and she started googling what [the illness] might be...and I didn't trust anything she said. I never went back to the GP." Some healthcare professionals agreed with these assessments. One said "not all GPs have had paediatric experience." Another said "GPs aren't adequately trained for children. I'm not surprised parents don't trust them." Another said, "some parents have had quite a bad previous experience with their GP." Lastly, one parent who also trained as a nurse noted that many parents she speaks to "don't have confidence in their GPs, especially with children". Observing conversations between healthcare professionals and parents, we noted that if parents had previously had negative primary care experiences with the same type of illness, they were more likely to take a child to PED rather than return to a GP. Despite these complaints, some parents reported more positive primary care experiences. One mother said "I would say [GPs] are better now than they used to be, but they were pretty bad when my children were younger." A father, talking about his experience when his daughter was ill, said "we were given sufficient means to cope with the situation... the advice from the GP was good."

On several occasions, we observed families in the hospital that had already seen a GP for the same episode of illness, sometimes even on the same day. In one case a parent attended Northwick Park UCC with a feverish child after visiting the GP for the same reason that morning and obtaining a prescription for antibiotics. The child had started the antibiotics but remained feverish and the parent decided to take the child to the UCC for another opinion. Similar behaviours were observed for other conditions, such as wheeze. It is possible that the parent either did not receive adequate instructions on how long it will take the treatment to work, or misunderstood the information. We also saw some families that attended the GP with an unwell child, and were told that antibiotics were not required for their child's illness. These families were not happy with this advice, or disagreed with the GP's assessment, and subsequently attended UCC or PED to request an antibiotic prescription. In the vast majority of these situations the GP was correct not to prescribe antibiotics. Some parents told us that they sometimes went to multiple PEDs until they received the treatment they wanted for their child.

Several parents also reported dissatisfaction with the NHS 111 service. One parent stated that a GP who had contacted her through NHS 111 was rude and dismissive

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about her concerns. As a result, she said, "*I certainly wouldn't necessarily go to NHS 111 again, I might go quicker to A&E next time*". Another parent reported frustration with long waits for NHS 111 when she was concerned about her child and stated that she preferred to call 999. Another parent still described how they had used NHS 111 for advice on services available in her area, but had not used it for clinical advice when her child was unwell.

The combination of our observations and interviews support that access and quality of primary care is perceived to be poor by parents and carers we sampled. However, there is also a degree of mistrust in relation to GPs which does not appear justified.

(ii) Perceived advantages of PED

Key findings:

- Parents indicated a wish to see a paediatrician rather than a GP when their child was unwell. This is reflective of the `messenger effect' which refers to a person's preference for receiving healthcare advice from a source perceived as authoritative.
- Both parents and professionals perceive that attendance at PED is the easiest route to healthcare. It is considered the most convenient option available to families.
- Professionals expressed concern that unduly thorough examinations and investigations by staff in PED and UCC give parents high expectations of the levels of care required to manage minor illnesses, and may reinforce the need for hospital attendance.
- Parents preferred the child-friendly environment offered by PED, as well as staff that are used to interacting with children.

Several parents reported attending PED because they viewed it as the best place to bring their sick child. One parent said that "this place is called 'Children's *Emergency Department' - this is the right place to go for children when they are sick."* In contrast to the literature, we noted few cases of parental worry and overestimations of the severity of their child's illness. Other parents reported a preference for seeing a paediatrician rather than a GP – one parent said "*l always want to see a paediatrician with my child, not a GP."* This preference may be reflective of the messenger effect. This behavioural tendency, described in Box 3, refers to a preference for receiving healthcare advice from a source perceived as authoritative. In this context, many parents may prefer their child to be seen by a paediatrician rather than a GP, even though both healthcare professionals should be appropriately trained to deal with minor illnesses.

Another reason parents saw PED as the best place to go was convenience. We observed several parents telling PED staff that they came because it was the

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quickest way of getting treatment; one parent called it the "*path of least resistance*". Another parent noted that "*results [at PED] for any tests are available immediately; at a GP we have to wait for scans or blood results.*" Several healthcare professionals agreed with this sentiment. One said that "*I can see how the easiest perceived route to care would lead them to our door*". Another noted that PED is "*a really trusted brand.*" However, one healthcare professional remarked that this perception had changed over time, noting that "*we live in a society now when people want things fixed instantly.*" Another referred to families attending PED non-urgently as the "*Amazon generation*", meaning they were used to being able to access goods on-demand, and were now applying these expectations to healthcare.

With regards to parent expectations, one practitioner expressed that overly thorough examinations by healthcare professionals gave parents incorrect ideas about the level of care needed to treat an unwell child with a minor illness, saying "some professionals tend to take far too long and are far too thorough ...they subtly undermine ... your very good doctor who can bash through the work [and] look quite amateurish compared to a very good nurse practitioner. To be a really good doctor, you have to learn to discharge without all the information". We noted this same issue during our observations at St Mary's triage: all patients received the full assessment even if this was irrelevant to the reason for attending (e.g. a grazed knee). Though there are many advantages of this, it is possible that this may influence the parent's perception of the severity of the illness.

Another reason parents reported preferring PED to alternative healthcare services was that they had had positive experiences there in the past. Many said they valued the child-friendly environment (e.g. brightly coloured waiting room with toys, a dedicated play-specialist), dealing with staff used to interacting with children, and being around other parents with sick children rather than waiting in a place with sick adults. Even though parents typically wait many hours in PED, several reported that they didn't mind waiting because the environment was pleasant and they knew they would see highly-qualified healthcare professionals.

(iii) Lack of confidence

Key findings:

- Parents attend because they may not be confident in their ability to manage the health of their sick child.
- First-time parents are more likely to attend PED seeking advice regarding the health of their unwell child. Experience caring for multiple children reduces the likelihood that parents will choose to go to hospital.
- Parents that lack confidence in their ability to manage an unwell child may be more likely to make decisions which are influenced by factors such as `availability bias.'

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Several parents and healthcare professionals highlighted that an important reason parents attended PED was because they were not confident in their ability to manage the health of their sick child. During observations, it was noted that many parents had already completed the relevant self-care at home but came to PED to have it checked by a healthcare professional. For example, one parent brought a child with a grazed arm which they had already properly cleaned and treated, but nonetheless wanted a doctor's opinion. One healthcare professional said "you are never going to get through to some parents...there is a lot of anxiety around, and we're never going to break that." Another said "I don't think we can ever take away the worry of being a parent and your child being unwell."

This desire for reassurance appears to be particularly strong for first-time parents with less experience minding unwell children, who may become particularly anxious when their child is unwell. Parents with multiple children described that the experience gained from looking after their first few children reduced their anxiety and improved their sense of control with children they had later on. For example, one mother said she attended PED several times with her eldest daughter but later became more experience with her second child: "*there were times when I would know not to take him and... to ride it out for a few more days.*" Another parent stated: "When your first child falls over you really worry and check that they are alright. By the time your fourth child trips and drops to the floor you just tell them to get up and they will be fine - but that all comes with experience."

One parent we spoke with worked as a healthcare professional and stated that "/ was two years into my nursing training when I had my son. I had a bit more healthcare experience and knew what to worry about and when to present [to PED]." This evidence suggests that experience allows families to identify serious illness and have more confidence in self-care or choosing the appropriate service. We noted that many parents had developed heuristics on determining the severity of the illness and next steps to take. For example, one parent said: "/ now know that if my child has a temperature that keeps going up and down over 72 hours, the likelihood [is that] they have an infection and it's time to take them to the GP" and "If they have a temperature, diarrhoea and vomiting, and can't keep any food down (which can lead to dehydration), depending on the severity I should see the GP urgently or go to the hospital."

Generally speaking however, it is likely that parents who lack confidence in their ability to manage their child's health may be more likely to make decisions which are influenced by factors such as availability bias. This tendency, described in Box 3, is when a person's decision-making is overly influenced by what comes to mind most readily, rather than by what is most relevant. In the context of child health, parents who lack confidence in their ability to judge when an illness is mild or severe may be, for example, more likely to interpret a rash as being indicative of sepsis if they have recently heard a dramatic story about sepsis from the media

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or a friend, and lack the confidence to dismiss sepsis as being very unlikely in the case of their child's illness.

Although we encountered several anxious parents, our main impression during our observations was that many parents attending with non-urgently ill children did not appear particularly anxious – and many were apologetic for coming to PED for what they recognised were not serious illnesses.

(iv) Low health literacy and poor information

Key findings:

- Parents' lack of health knowledge may lead them to seek reassurance from healthcare professionals when they have already taken the right steps at home.
- A lack of sufficient education and guidance at a child's initial presentation to a healthcare professional is likely to cause them to reattend healthcare services.
- Parents report not receiving adequate information when discharged from emergency or urgent care services. Professionals accept that at busy times discharge conversations for children with minor illness are often rushed.
- Confirmation bias is the tendency to interpret information in a way which confirms pre-existing views. Parents that have not been equipped with the ability to evaluate the severity of their child's illness may interpret symptoms as confirming their own pre-conceived ideas about the illness.

It was noted that many parents have this expectation that their attempts at home-care (e.g. giving a particular medicine after receiving advice from a pharmacist or NHS 111) should quickly cure their child's illness. Examples of where we observed this include: not knowing the correct self-care; not feeling able to judge the severity of the illness; lack of knowledge on the natural length of the illness; underestimating the time it takes for medication (e.g. antibiotics) to have an impact or overestimating the impact of one painkiller; and not knowing how certain tools should be used (e.g. inhaler). For example, one parent said "*we gave my child water with oral rehydration salts one hour ago as advised by the pharmacy, but he is still having diarrhoea.*" A healthcare professional echoed these observations, noting that there is "*parental concern or uncertainty about how to manage some of these minor conditions.*"

Lack of health knowledge among parents can cause them to seek reassurance that they are taking care of their child in the right way, even when they are already taking appropriate action. For example, several healthcare professionals reported regularly dealing with children brought in with a high temperature by parents who were concerned that the child's temperature had risen several hours after the child had taken fever medicine, even though this is normal and

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expected. During an observation session, a healthcare professional stated "Parents frequently have incorrect expectations about how long it may take for a minor illness to naturally run its course."

In some cases, children reattended the hospital for the same health issue because they did not receive sufficient guidance during their initial attendance. One parent described receiving inhalers from a GP that did not provide sufficient guidance on how to use them. She said: "*I learned the other day that there are different types of asthma. My son has had asthma for nine years! All I knew was that you give a blue inhaler and a brown inhaler, and nobody ever showed us how to use them when we received them - we had to ask a friend. There should be something more." Examples like this are concerning because they can lead to unnecessary hospital reattendances; worsen the child's illness; or lead to errors in care. For instance, we observed a parent who tried to give her child a much higher dose of inhaler in the same way she had observed a nurse give in the hospital. She did not realise, understandably, that the specific dosing she had seen should only be done under the supervision of a healthcare professional.*

Our judgement is that many parents bringing non-urgently ill children to the two hospitals we observed do not receive enough guidance from healthcare professionals about how to manage their child's illness outside the hospital. This was echoed by one practitioner, who said "*I wish GPs would spend more time educating and reassuring parents so that they understood why urgent or emergency care wasn't required. That would prevent some of our non-urgent attendances.*" Although we saw several cases of healthcare professionals taking time to give detailed instructions at the point of discharge, we also noted that discharge conversations were often rushed or did not happen at all, and written information was rarely provided (particularly during busy times).

One likely impact of this missed opportunity for educating parents is that they will continue to make healthcare decisions influenced by behavioural biases. For example, confirmation bias is the tendency to interpret information in a way which confirms one's pre-existing views (see Box 3). Parents who have not been equipped with the ability to properly evaluate the severity of their child's illness may end up interpreting any symptoms as confirming their own pre-conceived ideas about the illness. For example, a parent who thinks their child might have pneumonia might interpret every cough as confirmation of that diagnosis, and not take the time to question their own initial assumptions and look at the problem from a different perspective (i.e. perhaps it is just a cough).

(v) Social network influences

Key findings:

- Parents' decision to attend PED for a child with a non-urgent illness can be influenced by friends and relatives.
- Our findings support the ability of social norms to influence behaviour; people often prefer to behave in a way which is in line with how they think most people behave.
- Media campaigns and websites (blogs and social forums) may be contributing to an increase in non-urgent attendances amongst children.
- The changing nature of social support structures means than parents that would previously have drawn on older relatives for support now explore alternative sources.

Several parents who attended PED with their unwell children said that while they personally thought the illness was not severe enough to warrant going to the hospital, they were influenced to do so by friends and relatives. One mother said "*I went [to PED] because I was inexperienced. [I was] a first time mum and the only mum within my social group, and I had a mother who was quite a 'panicker.' She would push me to go to A&E." Another parent mentioned her partner: "My husband is really over the top - my child would have a little spot and he would want to take her to the emergency department." One healthcare professional, discussing this issue, gave their opinion that some of these attendances were because "parents feel that if they don't get things checked they are going to be criticised by school or the health visitor. You hear that quite a bit." These examples are all in line with a large literature showing the ability of social norms to influence behaviour; people often prefer to behave in a way which is in line with how they think most people behave (see Box 3).*

Another source of social influence is the media. One healthcare professional gave the opinion that one cause of non-urgent attendances at PED was "*fear and scaremongering - what you see on the news, and on the TV."* Other healthcare professionals highlighted the role of social media campaigns as contributing to a rise in non-urgent attendances. For example, one professional gave the example of the 'Sepsis Awareness Campaigns' which, while an important tool for educating parents about how to identify sepsis, were also likely to increase the number of "*worried well*" attendances by parents who might otherwise have taken care of their unwell children at home.

This was supported by one parent who described her use of websites: "[When] I googled my child's symptoms [I was] sent to American websites which described the worst possible scenarios and made me more scared than I was before." Conversely, another parent gave the example of being reassured by online media. She used blogs and social forums to search for health information, and said "I like to go on blogs, and type the symptoms in and see what comes out. The NHS is not



necessarily the first thing in mind... BabyCenter, NCT, Mumsnet – [they have] professional advice, but also parents sharing their experiences."

A related issue is the changing nature of social support structures. One healthcare professional noted that "changing demographics, particularly in an urban area where we are, [mean] families don't have the network of support and experienced grandparents, aunties and uncles offering support [and] reassurance that this is all a normal part of childhood." The difficulty of drawing on family for support means that some parents turn to alternative sources. For example, several parents said they discussed their child's illness with friends that have older children, saying that "if [another parent] who had more experience caring for a child told us to go to [to PED], that is exactly what we would do."

Box 3: The role of behavioural biases in affecting non-urgent hospital attendances

Behavioural biases are tendencies to think in ways that can lead to decisions which a person might not make if they had the time and capacity to make a more informed decision, but which often serve as reasonable rules-of-thumb. People's decisions are more likely to be influenced by these biases when they are particularly tired or stressed - factors often at work for parents with ill children.

Based on our observations at St Mary's and Northwick Park, and a review of the behavioural science literature, we believe the below behavioural biases are likely influencing the decision-making of parents who attend PED with non-urgently ill children.

Risk aversion

Risk aversion is the tendency to avoid choices perceived as risky. Risk perceptions do not always reflect an objective weighing up of pros and cons - they are often influenced by a person's emotional and psychological state.⁷⁵ An example of this is a person who overestimates the risk of a plane crash because they are afraid of flying.

Parents who feel very anxious about their child's health may judge their condition to be more severe than it really is. This, in turn, could make them more willing to attend PED. Empirically, survey evidence finds that parents often report fear and anxiety when stating the reasons they attend PED, indicating high levels of agreement with the statements "*I was anxious for my child*", "*I was personally anxious*", and "*I feared that my child's illness was very serious*".²⁷ This tendency may be inadvertently reinforced by healthcare professionals in PED giving parents ambiguous discharge instructions (e.g. "You should come back if it doesn't get better") which are open to a risk-averse interpretation (e.g. returning to PED because the illness didn't 'get better' after one day).

These types of vague instructions may also reflect the risk aversion of healthcare professionals. For example, a healthcare professional may think a patient's fever is non-urgent, but may also be conscious that fever can in fact be a sign of developing sepsis, a much more serious condition. A risk averse healthcare professional in this situation may prefer to emphasise to parents that they have the option of coming back to PED, even if this is not likely to be appropriate for a non-urgent illness.

Default bias

Default options can have powerful effects on behaviour, particularly when a person is unsure what to do or does not have a strong preference.⁷⁶ Defaults can influence decisions even for serious health issues. For example, one study found that seriously ill patients tended to stick with the default end-of-life

treatment regimens (i.e. comfort-oriented vs. life-extending care) they were randomly assigned.⁷⁷

One conclusion from a survey of parents was that PED "*is perceived as having a more stable and enduring 'brand' than other services and is consequently more 'top of mind' when parents are deciding where to go in a potentially urgent/stressful situation*".¹ A parent who thinks of PED as the default option for treating their ill child should be more likely to attend, particularly if this perception means they do not take time to consider the other options available (e.g. using NHS 111 or visiting a pharmacy).

Availability bias

The availability bias refers to the tendency to make an evaluation based on examples that come readily to mind.⁷⁸ For example, a parent may view their child's fever with particular anxiety if they have a strong memory of a family member or friend having had a fever which turned into a more serious condition. This vivid comparison might then encourage them to attend PED to be on the safe side, even if the statistical probability is low that a child with a fever like theirs would turn into a more serious illness.

Availability bias may also make parents more willing to bring their child to PED if they have had a positive experience there in the past. This differs from default bias in that parents may well be willing to think through the healthcare options available to them (rather than immediately selecting the default option of PED), but the option of PED may loom larger in their minds if they recently went there when their child was ill. Media campaigns promoting health awareness may also make parents more likely to attend PED by making signs of ill health more salient to them. For example, in December 2016 the NHS began distributing millions of leaflets to PEDs and primary care services to promote a 'Think Sepsis' campaign.⁷⁹ This campaign's goal is to help parents identify early signs of sepsis, a potentially fatal condition. Whilst laudable, the campaign may have the inadvertent effect of encouraging parents to attend PED non-urgently if they incorrect assess their child as being at risk of sepsis.

Hot and cold decision-making

People often mispredict how they will behave in future situations because they do not anticipate how their emotional state at that time will affect their decision-making.⁸⁰ An example is a parent who, in a "cold" emotional state during the day, takes the appropriate steps to self-manage the health of their unwell child. The same parent might then decide to attend PED in the middle of the night if they are woken by their feverish, crying child, and their 'hot' state of panic and disorientation makes them feel that the situation requires urgent medical attention, even though the child's symptoms were no different than those they had already effectively managed during the day.

Hot and cold decision-making is particularly relevant to parents managing children with non-urgent illnesses given the potential dynamic described above. In the above example, the 'cold' state parent may recognise that they should manage their child's illness at home and therefore avoid the need to travel potentially long distances to PED, take time off work, disrupt the routines of their children, or risk their children contracting an illness in the hospital environment. However, these other concerns may be far from their mind when they are in a hot state, and consequently lead to a different decision.

Social norms

Social norms are rules of behaviour which most people consider acceptable or common. Social norms can be so powerful that people may follow them without thinking, such as shaking hands when meeting someone for the first time, using formal language in certain settings, or respecting another person's personal space.

Inferred social norms may influence parental decision-making about their child's health if parents feel pressure to be seen as a responsible parent by their peers. Younger and less educated parents who attended PED tended to cite this as a concern, indicating agreement with statements like "*I wanted to be viewed as a good parent*" and "*I wished that nobody could say I neglected my child*".²⁷ This pressure may be strong enough that it overrides their own opinion that their child's health situation is not urgent.

Messenger effect

A common belief among some parents is that paediatricians are better equipped to treat children than other healthcare professionals. This may be true, but the expertise of a paediatrician may not be necessary for many minor illnesses, which GPs and pharmacists can diagnose and treat. Nonetheless, a preference for healthcare advice from a source that parents view as authoritative can make them much more likely to attend PED, even when they could have accessed the same care elsewhere. For example, during our fieldwork, one parent expressed the view that she took healthcare information on NHS Choices more seriously when the website was recommended to her by a paediatrician compared to when she had discovered it herself through an online search.

Confirmation bias

Confirmation bias is the tendency to interpret information in a way which confirms one's pre-existing views. An example is a hypochondriac who interprets ambiguous signs of ill health as evidence that they are very unwell. Confirmation bias might encourage parents to bring their child to PED if a parent has a strong prior belief that their child might be very unwell. This perception might be influenced by other behavioural biases, such as availability

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bias and risk aversion. For example, consider a parent whose unwell child has symptoms consistent with sepsis. Assume also that the parent knows a child outside their family who was recently hospitalised for sepsis. Because that example is very salient, the parent may be more likely to interpret their own child's symptoms as indicating sepsis.

PED staff may also be prone to confirmation bias.⁸¹ One recent paper provided two case studies of unwell children which a paediatric specialist might encounter in their work. The authors then illustrated ways in which confirmation bias might affect diagnosis, such as a paediatrician who arrives quickly at an initial diagnosis, and then selectively interprets the patient's symptoms to support this. A more systematic review involving almost 7000 physicians also found evidence that confirmation bias can impair medical treatment and diagnoses. In so much as these errors might lead to children receiving suboptimal care in PED, they could increase the likelihood that parents return to receive additional care.⁸²

3.5 What will help prevent non-urgent reattendance?

As part of our interviews, we asked healthcare professionals and parents what they thought would improve the way parents managed the health of unwell children, with the goal of reducing their need to return to PED. One healthcare professional noted what a complex issue it is - "*there are many other factors other than health education that will influence reattendance, including how long they have to wait, whether they got seen by a doctor after initial assessment, whether they got any medication."* However, both parents and healthcare professionals indicated a desire for improved discharge instructions.

3.5.1 Improving discharge instructions

During our observations at St Mary's and Northwick Park, we repeatedly noted the lack of clear discharge instructions for parents of children with a minor illness, in terms of specific steps they could take to manage their child's illness so that they would not have to return to PED in the near future. This is despite the fact that one healthcare professional expressed that patients need "advice as to where to go next time" before leaving. During our observations, we noted that when instructions were given, they were typically given verbally – in the words of one healthcare professional "nurses will try and talk about [the health issue] at triage and then the doctor will talk about it again when they assess."

Another healthcare professional cited the existence of "*leaflets ... which are quite good. I often say to parents, take this information and put it on your fridge, and if you are going to nursery give one to the nursery so they know what to look out for as well."* Similarly, another staff member said "*usually we give [parents] a booklet about injuries or medical problems."* However, we only witnessed use of written material during our observations twice and, in fact, only observed a detailed discharge conversation on three separate occasions.

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The absence of clear discharge instructions was perceived by several parents. One said "they discharged my son and they said 'it's normal'. It would be good if they gave you an explanation so that in the future if it happened again, you would be aware of the situation and how to handle it." Another said "I didn't feel reassured with the information that was given about why I'd presented. Yes, they are telling me my child is fine, but I didn't feel like she was." Another said "there was no 'this is how you can manage it at home' or 'this is what you need to do'. Literally I cannot recall ever receiving a leaflet." Another said "If they had given me something [to take away] I would have maybe felt a bit more empowered." One parent, talking about her request for written information at discharge, said "It's not helpful, honestly... Nothing to do with the staff or anything, the staff are perfect - they are so good, but when it comes to a report or a proper document, they don't [provide one]". We explored in our interviews what kind of information parents would like at discharge and two parents highlighted that the information should be specific: "it would have to be related to why I was in A&E in the first place, if it was just general information about unwell children I probably wouldn't look at it."

Several healthcare professionals cited time pressure as the main barrier to delivering more comprehensive discharge instructions. One said "*if you are a doctor on your own in the middle of the night, you can't spend 10 minutes with everyone patiently describing a detailed plan.*" Another healthcare professional made the point that parents are often mentally exhausted to the point where they may not take in detailed instructions. Similarly, another healthcare professional said that parents would only take in information "*once they have been reassured that their child is well. Triage especially is not the time to give them a leaflet to read as nothing is going to sink in then.*" Another barrier to staff providing detailed discharge instructions is the tendency for staff members to shift into 'fire-fighting' mode during particularly busy shifts. At this time, staff prioritise the sickest patients and have limited capacity to give detailed discharge instructions for non-urgent attendances.

However, during quieter shifts when staff are less busy we witnessed examples of discharge education being delivered by staff. In one situation, a PED consultant took the time to teach one set of parents how to administer a specific medication whilst in the department, so that they could practice giving it effectively before being discharged home with the medication. At Northwick Park UCC, we observed the paediatrician giving detailed discharge instructions on the management of minor illness in children following their healthcare appointment. He gave families the opportunity to ask questions and counselled them on the best medications available from a local pharmacy for a fever and sore throat.

3.5.2 Improving discharge information

When asked what materials could improve the discharge procedure, one healthcare professional said "*where I worked before we had a really useful 'Ways* to Care for a Sick Child' leaflet. A booklet that directed different example

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illnesses to particular services, I think we need something like that again. Something like 'where is right for me?" Similarly, another healthcare professional expressed a desire for a written booklet covering 'What you encounter in the first five years' - maybe the very many common things that a child could have in the first five years of life, so diarrhoea and vomiting, wheeze, colds and viral illnesses." Another said "Maybe something for [patients] to take away that says, this didn't need to be taken care of in A&E, this is the service you could have attended." Parents supported this and suggested some ideas: "I would love to have something clear with child-specific healthcare advice on, like a fridge magnet or something that you would look at regularly" and "something clear and simple, and easy to refer to would have been really helpful when my kids were young."

In addition to providing materials during the PED pathway several healthcare professionals expressed a desire for more parent education about child illness generally. One gave the opinion that there was a need for "a massive drive for parent education, specifically on 'what to do if your child is unwell', what to look for, but ...you would need to reprogram what has already been taught and teach them again. Parents need to constantly be taught self-management skills and what to look for." Similarly, another healthcare professional said that some parents needed "a bit more education on when it's appropriate to call an ambulance." Another expressed a desire for more tools for parents outside the PED environment, saying "I think we need to be more proactive - [providing information] in A&E is a bit reactive, but advice leaflets are as good as we've got really. There are apps out there as well, but I don't use them or signpost people to them."

4. Data report from St. Mary's PED and Northwick Park UCC

Key findings:

- Analysis of attendance data at both hospitals found that around 55-65% of all attendances can be classified as non-urgent.
- The majority of non-urgent attendances in both hospitals were by children aged 0 – 4 years and, we have decided that our future intervention will target this age group.
- Our data analysis has identified non-urgent reattendances as the main outcome measure of our future intervention.

This section examines attendance data at St. Mary's PED and Northwick Park UCC from January 2013 to December 2016. We use these data, which are anonymised and measured at a daily-level, to count the number of non-urgent attendances over time, to calculate non-urgent reattendance rates, and to identify a target population for a future intervention.

4.1 Definition of non-urgent attendance and non-urgent reattendance

We define a non-urgent attendance as a patient that meets the below criteria.

In St. Mary's the patient must:

- (i) receive a triage score of 4 or 5 on the Manchester Triage System (this ranges from 1 (most severe) to 5 (least severe));
- (ii) not have been admitted to the hospital; and
- (iii) not have received any medical tests (e.g. x-rays or blood tests).

In Northwick Park, the patient must:

- (i) be streamed into the UCC, not PED;
- (ii) not be triaged as `urgent' at any point; and
- (iii) not be referred to a paediatric or other specialist at any point.

These different criteria reflect the slightly different procedures at the two hospitals, but produce similar groups of children with minor illnesses. We exclude from the sample any attendance which reports a non-UK postcode, or any attendances which are made by the same patient less than two hours apart (these are presumed to be duplicates). We then use the attendance data to calculate 48-hour, 7-day, 30-day and 90-day non-urgent reattendance rates.

We define a non-urgent reattendance as one where a parent attends nonurgently (defined using the criteria outlined above), and then reattends nonurgently. A non-urgent reattendance is not one where a person attends non-

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urgently and later reattends with an urgent illness. We calculate reattendance rates at a family-level.^x This means that if a parent brings child A to the hospital, and then one week later brings child B, that will be counted as a reattendance, even though the attending patients are different children. We do this because the decision to attend PED is ultimately made by the parents, not the unwell child, and it is the behaviour of parents we ultimately seek to change.

4.2 Identification of a population

After restricting the data to all attending children (aged 0-15) who met the nonurgent criteria outlined above, we examined attendance rates by age. Figure 6 shows our results for attendances in 2016. In that year, there were 12,935 nonurgent attendances in St. Mary's and 22,291 non-urgent attendances at Northwick Park. The average age for all non-urgent attendance was 4.4 (SD = 4.3) at St Mary's and 5.5 (SD = 4.5) at Northwick Park.

^x Family IDs are generated using a combination of the attending patient's last name and full postcode.

Figure	6:	Number	of	non-urgent	attendances	in	2016,	bv	patient age	Э
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Age	St. Mary's PED	Northwick Park UCC
0	2631 (20.3%)	2363 (10.3%)
1	1958 (15.1%)	3224 (14.1%)
2	1227 (9.5%)	2136 (9.3%)
3	1077 (8.3%)	2052 (9.0%)
4	919 (7.1%)	1799 (7.8%)
5	826 (6.4%)	1657 (7.2%)
6	690 (5.3%)	1276 (5.6%)
7	508 (3.9%)	1159 (5.1%)
8	534 (4.1%)	1088 (4.8%)
9	466 (3.6%)	912 (4.0%)
10	459 (3.6%)	932 (4.1%)
11	380 (2.9%)	965 (4.2%)
12	361 (2.8%)	917 (4.0%)
13	309 (2.4%)	838 (3.7%)
14	292 (2.3%)	807 (3.5%)
15	298 (2.3%)	796 (3.5%)
Total	12,935	22,291

Based on these attendance data, we decided to concentrate on the age 0-4 group as we move closer to designing an intervention to reduce the number of non-urgent reattendances. We focus on this age group for three main reasons:

 Children aged 0-4 account for the majority of non-urgent attendances in 2016 at St. Mary's (60.4% of all non-urgent attendances) and Northwick Park (50.5%);

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- (ii) Children aged 0-4 who attend PED are there because of a decision by a parent or carer to attend, not because they went there of their own volition. This means our intervention can be specifically designed to target the decision-making of parents, rather than an intervention which targets both parents (of attending young children) and older adolescents (who may attend themselves); and
- (iii) Children aged 0-4 typically attend PED with different types of health complaints than older children. By focusing on this group, we are better able to design a more targeted intervention which helps parents manage the health problems common to young children.

4.3 Descriptive statistics

Figure 7 shows descriptive statistics for both hospital sites from January to December 2016. These statistics only include children who meet all the nonurgent criteria outlined above (in section 4.1) and are aged 0–4 years. Among 0–4 year olds in 2016, the average patient age was 1.5 in St. Mary's and 1.8 in Northwick Park, and around 50% of attendances in this group were aged under 2. The number of non-urgent attendances in 2016 was 7,820 in St. Mary's (originating from 5,754 families) and 11,543 in Northwick Park (originating from an estimated 8,488 families).

Different types of detail about attendance were available in the two sites. At St. Mary's, we observe the top five reasons for attendance (as noted by a healthcare professional during the triage assessment); this information is not available in Northwick Park. At St. Mary's the most common reason for a non-urgent attendance is "unwell child". At Northwick Park (but not St. Mary's), there is a record of what discharge instructions the patient receives. At St. Mary's, 57% of non-urgent attendances result in a discharge with no follow-up instructions; the remainder are directed to attend a GP. **Figure 7:** Descriptive statistics for the non-urgent samples (age 0-4) in St. Mary's PED and Northwick Park UCC in 2016

Demographics	St. Mary's PED	Northwick Park UCC
Average age (standard deviation)	1.5 (1.4)	1.8 (1.4)
Age distribution of non-urgent attendees	0: 33.6% 1: 25.0% 2: 15.7% 3: 13.8% 4: 11.8%	0: 20.4% 1: 27.9% 2: 18.5% 3: 17.8% 4: 15.5%
% female	43.7%	N/A
Attendances	St. Mary's PED	Northwick Park UCC
Number of non- urgent attendances	7,820	11,543
Number of families	5,754	8488*
Details of attendance	St. Mary's PED	Northwick Park UCC
Triage assessment	 Unwell child (32.2%) Shortness of breath (10.2%) Diarrhoea, vomiting (8.2%) Rashes (7.7%) Worried parent (7.7%) 	N/A
Discharge instructions	N/A	No follow up (57.2%) Discharge to GP (42.8)

*Number of families in Northwick Park is estimated.

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Figure 8 (St Mary's) and Figure 9 (Northwick Park) show attendances over time by children aged 0-4. From April 2015 to December 2016 at St. Mary's, there were 1,162 attendances per month on average, of which 668 (57%) were non-urgent. From January 2013 to December 2016 at Northwick Park UCC there were 1,391 attendances per month on average, of which 866 (62%) were non-urgent. There is seasonal variation evident in both hospitals as attendances rise in the winter months. The pattern of non-urgent attendances broadly track total attendances throughout the year (i.e. non-urgent attendances are always roughly 55-65% of total attendances).



Figure 8: Attendances per month by children aged 0-4 in St Mary's PED



Figure 9: Attendances per month by children aged 0-4 in Northwick Park UCC

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Figure 10 (St. Mary's) and Figure 11 (Northwick Park) show the average number of attendances per day in 2016 by children aged 0-4. At St. Mary's, there were 40 attendances per day on average, of which 22 (55%) were non-urgent. At Northwick Park, there were 49 attendances per day, of which 32 (65%) were non-urgent. Both sites were busier on weekends: the number of non-urgent attendances on weekends compared to weekdays was 28% higher in St. Mary's and 39% higher in Northwick Park. This is most likely due to a lack of access to primary care and local pharmacies. Alternatively, it may be because it is easier for parents to go to PED on weekends when they are not working and their children are not at school.





Figure 11: Attendances per day by children aged 0-4 in Northwick Park UCC in 2016



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Lastly, Figure 12 (St. Mary's) and Figure 13 (Northwick Park) show the average number of attendances per hour in 2016 by children aged 0-4. At St. Mary's, there were 1.6 attendances per hour on average, of which 0.9 (55%) were non-urgent. At Northwick Park, there were 2.1 attendances per hour on average, of which 1.3 (63%) were non-urgent. At both sites, the busiest hour of the day for non-urgent attendances was 8pm and the quietest hour was 5am. Also across both sites, the number of non-urgent attendances from 9am to 11pm was 3.6 times higher than from midnight to 8am.



Figure 12: Attendances per hour by children aged 0-4 in St Mary's PED in 2016



Figure 13: Attendances per hour by children aged 0-4 in Northwick Park UCC in 2016

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4.4 Reattendance rates

Figure 14 shows 48 hour, 7-day, 30-day, and 90-day non-urgent reattendance rates in St. Mary's PED and Northwick Park UCC among 0-4 year-old patients in 2016. Reattendances are calculated at the family-level; in other words, if a parent attends PED with child A on Monday and then attends with child B on Tuesday, this is counted as a reattendance.

An example interpretation from Figure 14 is as follows. In 2016 at St. Mary's, there were 7,796 attendances which could have resulted in a reattendance within 48 hours (i.e. in other words they took place at least 2 days before the end of the data on December 31). Of these, around 187 (2.4%) resulted in a non-urgent reattendance within 48 hours. The other results are very similar across both sites. Collectively across both hospitals, we find that in 2016 for every 1,000 non-urgent attendances, 29 (2.9%) resulted in non-urgent reattendance within 48 hours, 57 (5.7%) reattended within one week, 109 (10.9%) reattended within 30 days, and 195 (19.5%) reattended within 90 days.

	St. Mar	y's PED	Northwick	Park UCC
Time period within which families can reattend	Reattendance rate (%)	Number of attendances	Reattendance rate (%)	Number of attendances
48 hour	2.4	7,796	3.2	11,367
1 week	5.4	7,725	5.9	11,236
30 days	11	7,387	10.8	10,692
90 days	19.2	6,371	19.7	9,133

Figure 14: Family-level non-urgent reattendance rates among children aged 0-4 in 2016 in St. Mary's PED and Northwick Park UCC

5. Conclusion

This report identifies the main reasons why parents and carers decide to bring their child with a minor illness to a hospital emergency or urgent care department rather than managing the illness elsewhere. After reviewing the relevant academic literature and conducting our own fieldwork at St. Mary's PED and Northwick Park UCC, we have grouped these reasons into five broad categories:

- (i) parental worry;
- (ii) perceived advantages of PED;
- (iii) perception of other healthcare services;
- (iv) social network influence; and
- (v) lack of confidence and low health literacy.

Understanding why parents decide to attend the hospital with their unwell child is crucial to guide the design of our future intervention, which will aim to reduce non-urgent hospital attendances by improving the ability of parents to manage their child's health outside the hospital. To that end, this report identified current best practices for helping parents manage their child's illness after they leave the hospital. Our review of studies in this area concluded that:

- targeted healthcare interventions that are focused on education can improve people's ability to manage their own health and their child's health;
- personalised discharge instructions appear to improve health outcomes for adult populations (there is an absence of evidence on whether these are effective for children);
- low-cost follow-up interventions, such as text messages, are effective in influencing healthcare behaviours.

Additionally, we conducted fieldwork with both parents and healthcare professionals to hear their different perspectives on why parents attend hospital with children who are mildly ill. Through interviews, we learned that while parents frequently expressed a desire for written discharge information and educational materials about managing minor child illness, this was very rarely given out in St. Mary's or Northwick Park. This seems like a missed opportunity given that previous studies have found that improving the ability of parents to manage their children's health at home should make them less likely to return to the hospital.

The specific target population of our intervention was decided after analysis of attendance data at St. Mary's and Northwick Park, which revealed that a majority of non-urgent attendances are made by patients aged 0-4. Additionally, we reasoned that an intervention aimed at this group is likely to have a greater chance of success than an intervention aimed at all non-urgent attendances generally (i.e. one including children aged 0-15). The reason for this is that this more specific intervention could focus on the decision-making of parents who

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brought their child to PED, and could concentrate on providing advice on managing the relatively small number of health complaints (e.g. fevers, vomiting, rashes) that lead to young children attending the hospital non-urgently. That data analysis also identified non-urgent reattendances as the main outcome measure of our future intervention.

One crucial ethical consideration of any intervention in this area is that parents should not feel discouraged from coming to PED when they really need to, and should not feel chastised or stigmatised for having attended PED for an illness that was classified as non-urgent. This is detailed further in Box 4. To reduce this risk, we will design our interventions in collaboration with local families and healthcare professionals.

Box 4: Avoiding unintended consequences

BIT and CC4C will be designing a trial aimed at reducing the number of nonurgent attendances at St. Mary's and Northwick Park hospitals. The mechanisms by which we expect to do this are: firstly, by improving the ability of parents to manage the health of their children (e.g. through improved home-care) and secondly, by helping parents to better navigate the healthcare system (e.g. by calling NHS 111 rather than going straight to PED).

One risk of an intervention like this is that it could inadvertently discourage parents from appropriately bringing very ill children to PED by placing unwarranted responsibility on them to diagnose their child's illness. One issue with this, highlighted in a recent report, is that "*it is unreasonable to expect patients to determine whether ...symptoms reflect serious illness or more minor conditions.*" ⁸³ A healthcare professional noted a similar argument during our fieldwork, "*I don't think it's wrong for patients to attend because you are asking them to know a lot of medical stuff. It's easier for staff members because we know what sick kids look like, but for the parents that is probably the sickest kid they have ever seen."* It is possible that a child with a fever has symptoms which may be indicative of something more serious, such as sepsis. In an uncertain situation like this, parents may understandably prefer to visit PED to get the opinion of a professional.

Another consideration is that the intervention needs to be delivered with sensitivity. During our own observations at St. Mary's and Northwick Park we encountered parents who were apologetic about their presence at PED for what they recognised were not very serious illnesses, but which they reasonably thought was the best place for their child to be treated. Furthermore, other research has found that parents may perceive stigma or shame about attending PED 'inappropriately', or report feeling criticism from healthcare professionals, who, operating in a stressful environment, may display a lack of patience for non-urgent cases.³¹

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Other interventions in this area have already taken steps to take these factors into consideration. For example, the Acutely Sick Kids Safety Netting Interventions for Families (ASK SNIFF) research programme aims to improve the ability of parents to manage unwell children while prioritising patient safety.²¹ This program, which is still under development, aims to provide parents of unwell children with video material showing how to manage six common illnesses (breathing difficulty, temperature, diarrhoea, vomiting, rashes and dehydration), and to identify when their child needs medical attention.

Behavioural science can presume that the way people behave is 'irrational' or the result of poor logic.¹ However, for the majority of families included in this project this was not the case. In a rapidly changing and sometimes complex healthcare system it is understandable that parents will pursue the most 'risk-averse' or 'default' option. The decision to attend PED or UCC was usually because they thought it was the best option for them and their child compared to alternative services, and they did not feel equipped to deal with illness without reassurance and professional support.

During our interviews with parents, many expressed a desire for written information and healthcare education after or at the point of discharge, but this was rarely observed in PED and UCC.

Reassurance through education offers an opportunity to influence parental behaviour and address parental worry and lack of confidence and low health literacy. This is supported by our review of the literature showing that educational interventions can reduce healthcare demand.

Using our observations of family behaviours and an understanding of behavioural science, other opportunities to influence behaviour are:

- emphasising the benefits of self-care over attending PED or UCC;
- making costs to health service and more salient;
- creating peer-support mechanisms to offer parents social support from other parents; and
- supporting navigation of the healthcare system with decision-trees for unwell children.

We hypothesize that the introduction of a behavioural intervention either at the point of discharge, or shortly after, would reduce the pressure on the healthcare system. If parents had more confidence in managing minor illness, were reassured, knew the steps they could take at home, and were encouraged to attend more appropriate services (e.g. GP or pharmacy), this could prevent non-urgent attendance at PED and UCC.

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In conclusion, this report summarises the work we have done to understand the primary drivers for why parents decide to bring their children with non-urgent illnesses to a hospital emergency or urgent care department, rather than managing the illness elsewhere. This work will inform the design of a behavioural intervention encouraging parents to manage minor illness at home and attend the most appropriate healthcare service. The ultimate goal of this intervention is to reduce the need of parents to make a non-urgent attendance at the hospital. We expect that the results of this intervention will be scalable to other hospital trusts across the UK.

Appendices

Appendix 1: The traffic light table in the NICE guidelines for "Feverish illness in children"¹⁶

	Green – Iow risk	Amber – intermediate risk	Red – high risk
Colour (of skin, lips or tongue)	Normal colour	 Pallor reported by parent/carer 	 Pale/mottled/ashen/ blue
Activity	 Responds normally to social cues Content/smiles Stays awake or awakens quickly Strong normal cry/not crying 	 Not responding normally to social cues No smile Wakes only with prolonged stimulation Decreased activity 	 No response to social cues Appears ill to a healthcare professional Does not wake or if roused does not stay awake Weak, high-pitched or continuous cry
Respiratory		 Nasal flaring Tachypnoea: RR >50 breaths/ minute, age 6–12 months RR >40 breaths/ minute, age >12 months Oxygen saturation ≤95% in air Crackles in the chest 	 Grunting Tachypnoea: RR >60 breaths/minute Moderate or severe chest indrawing
Circulation and hydration	 Normal skin and eyes Moist mucous membranes 	 Tachycardia: >160 beats/minute, age <12 months >150 beats/minute, age 12–24 months >140 beats/minute, age 2–5 years CRT ≥3 seconds Dry mucous membranes Poor feeding in infants Reduced urine output 	 Reduced skin turgor
Other	None of the amber or red symptoms or signs	 Age 3–6 months, temperature ≥39°C Fever for ≥5 days Rigors Swelling of a limb or joint Non-weight bearing limb/not using an extremity 	 Age <3 months, temperature ≥38°C Non-blanching rash Bulging fontanelle Neck stiffness Status epilepticus Focal neurological signs Focal seizures
CRT, cap	illary refill time; RR, r	espiratory rate	
* This tra the guide	offic light table shou white on investigation	Id be used in conjunction with the ns and initial management in child	e recommendations in dren with fever. See
http://gu	idance.nice.org.uk/0	CG160 (update of NICE clinical gui	ideline 47).

Appendix 2: Details of six recent studies surveying why parents attend PED for non-urgent childhood illness

	Study title (First author, year of publication)	Country	Interviewees	Type of patients examined
A	Why do parents bring their children to the Emergency Department? A systematic inventory of motives (Costet Wong et al., 2015) ²⁷	France	497 parents attending PED	Non- urgent and urgent
В	Why do parents use the emergency department for minor injury and illness? A cross- sectional questionnaire (Ogilvie et al., 2016) ¹⁴	England	373 parents attending PED	Non- urgent
С	Making choices: why parents present to the emergency department for non-urgent care (Williams et al., 2009) ¹⁵	Australia	355 parents attending PED	Non- urgent
D	Children and Young People's Attendance at A&E (NHS Newcastle Gateshead CCG., 2015) ¹⁰	England	184 parents and guardians completed an initial survey in PED	Non- urgent
E	A&E: Studying parental decision making around non-urgent attendance among under 5s (Rowe et al., 2015) ¹	England	35 parents of children under 5 who attended PED in the last six months	Non- urgent
F	Why do parents bring children to the emergency department for non-urgent conditions? A qualitative study (Berry et al., 2008) ²⁸	USA	31 families attending PED	Non- urgent

		Observation site			
Shift	timing	St Mary's PED	Northwick Park PED	Northwick Park UCC	
	Day	1	1	1	
Monday	Evening	1	1	1	
	Night				
	Day	1			
Tuesday	Evening	2			
	Night	1			
	Day	1			
Wednesday	Evening				
	Night				
	Day	1	1	3	
Thursday	Evening	1		2	
	Night				
	Day		2	2	
Friday	Evening				
	Night				
Saturday	Saturday None				
	Day				
Sunday	Evening	1	1	1	
	Night	1	1	1	
Total shift	s observed	11	7	11	

Appendix 3: Summary of observation sessions at each research site

Day shifts = 08:00-16:00. Evening shifts = 16:00-20:00. Night shifts = 20:00-08:00. Blue highlighting indicates shifts that occurred within normal working hours. Orange highlighting indicates shifts that occurred `out-of-hours'.



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Appendix 4 Semi-structured interview guide for parents

1) ⊺	Tell me about your last experience of taking an unwell child to an A&E department a. Take me through the steps you took before attending A&E
.,	a. Take me through the steps you took before attending A&E
	b. If you haven't been to ARE tell me about your experience of managing an unwell
	child
	c. In hindsight, would you have done anything different?
2) I	Do you know what services are available to help look after an unwell child?
	a. Emergency care, community care, pharmacy, NHS 111
	b. What is your experience of these services?
	c. In what situation would you use each of these services?
3) I	How much do you remember from your last A&E attendance?
	a. What information were you given?
	b. Did you feel well informed? What was good or bad about the information?
	c. Did you return with the same issue?
4) \	Where do you look for healthcare information?
5) N	What information or tools do you think the parents or carers could be given to help
	accide whether or not to go to A&E?
	a. when do you think parents or carers would be receptive to information?



Appendix 5: Semi-structured interview guide for healthcare professionals

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STRUCTURED INTERVIEW GUIDE FOR INTE	RVIEWERS:
healthcare professional tell their story and us	se the questions below as prompts:
What do you define as a non-urgent attenda	ince?
What do you consider to be the 3 main drive A&E?	ers of non-urgent attendance to Paeds
a. Do you consider non-urgent attendanceb. What are the main conditions?	to be a problem?
What do you think the barriers to appropriat attendees?	te healthcare use are for non-urgent
 a. Why might parents go to A&E instead of b. Self-care 	pharmacist, GP
Do you think parents are well equipped to n episodes following their attendance at Paed	nanage the illness now and in future Is ED?
What information or tools do you think the r should be given?	parents or carers of non-urgent attenders
a. If something, how do you think parents of	or cares should be given this information
 c. Do they think the NICE traffic light is clear 	ar for parents?
	 What do you define as a non-urgent attendate What do you consider to be the 3 main drive A&E? a. Do you consider non-urgent attendance b. What are the main conditions? What do you think the barriers to appropriat attendees? a. Why might parents go to A&E instead of b. Self-care Do you think parents are well equipped to n episodes following their attendance at Paece What information or tools do you think the pshould be given? a. If something, how do you think parents or b. Ask when they think parents would be reference. Do they think the NICE traffic light is cleared by the provident of the

Appendix 6: St Mary's Hospital Urgent Care Centre Exclusion Criteria

LDUC (part of Vocare	group) UCC paediatric streaming exclusion criteria
	2 Streeming Criteria (for Streeming Nume)
APPENDIX	s - streaming criteria (for streaming Nurse)
THE FOLLOWING PATIEN	IS WILL ROUTINELY BE REFERRED ON TO THE EMERGENCY
	DEPARTMENT
	Children (under 16 years old)
Condition/Reason for Attendar	Further Information
Accidental politining	Overdose
Active Labour	Waters have broken
	Regular and frequent contractions
	Seeing or feeling the baby coming
	Baby just born
Acutely ill child	All children identified as "acutely ill"
	Limp, floppy, unresponsive
Airway compromise	Sudden colour change
All way compromise	 Swelling around tongue, mouth, nose, throat
	Noisy breathing
Alleged abuse/safeguarding	Physical or sexual
concerns	 Concerning history with or without a delay in presentation Inconsistent story
	Unexplained injury
	 Any injury in a child under 1 years old
Burns	 >3% of body surface (full or partial thickness) Excipt (ava involvement)
	 Inhalation injury
	Chemical/electrical involvement
	NB - see major trauma
Febrile fits	Febrile convulsion
Fever with Non-blanching Pash	Fit associated with high fever
Fitting	Fitting continuing into time of presentation
-	Pregnant and having fits
	On-going fit
	More than one fit
	*Patient who has had and recovered from a fit and has a GCS of 1 can be referred to UCC
Fractures/possible fractures	 Where the injury relates to the face, head, chest, trunk, pelvis hip
	 Complicated fracture for example but not limited to:
	 Long bone fracture of leg
	 Open fracture Spinal injury
	 Dislocations (excluding fingers/toes)
	*Facial injuries which are unlikely to require x-ray can be passed to

Appendix 6 cont: St Mary's Hospital Urgent Care Centre Exclusion Criteria

	Children (under 16 years old)
Condition/Reason for Attendance	Further Information
Frequent Attender	 Children who have attended 3 times or more with the same complaint Children who have a care plan/special patient note in place whic indicates referral to ED is appropriate
Head Injury	 Witnessed loss of consciousness Amnesia (antegrade or retrograde) lasting> 5 minutes Abnormal drowsiness 2 or more discrete episodes of vomiting Clinical suspicion of non-accidental injury Post traumatic seizure Use of Alert, Voice, Pain, Unresponsive (AVPU) to assess level of alertness. Any patient who is less than fully alert to voice should be referred directly to ED. Suspicion of skull injury or tense fontanelle Any sign of basal skull fracture, haemotympanum "panda" eyes, cerebrospinal fluid leakage from ears or nose, Battle's sign Focal neurological deficit Age under 1 year: presence of bruise, swelling or laceration >3cm on the head or any size bruise if pre-mobile Dangerous mechanism of injury e.g. high speed road traffic accident either as pedestrian, cyclist or vehicle occupant, fall from >3 metres, more than 5 stairs, high speed injury
Inhalation injury	Breathing in hot or poisonous fumes e.g. smoke, carbon monoxide
Loss of consciousness	 Fluctuating levels of consciousness or reduced Glasgow Coma Sco History of decreased or varying consciousness Semi-conscious now Unconscious now
Major injury/High impact injury	 Amputation Blast injury Burn of 3% or more of body surface, facial/eye involvement, inhalation injury, chemical/electrical involvement Inhalation of hot/poisonous fumes e.g. evidence of soot or swellin around the mouth or nose Ejection/fall from a moving object/vehicle Electric shock Fall of 3 metres or more (flight of stairs in average house/ single decker bus) if under 12, 5 metres or more if over 12 years Gunshot Major wound Near drowning Possible bony injury of hip/pelvis/femur Road traffic collision: as a pedestrian or cyclist hit by a car travelling >20mph as a driver or passenger in a vehicle travelling >50mph patient displaying midline tenderness or any clinical suspicion of spinal injury (altered sensation/weakness in limbs) trauma to chest/abdomen/pelvis/long bones
Appendix 6 cont: St Mary's Hospital Urgent Care Centre Exclusion Criteria

Children (under 16 years old) Further Information Condition/Reason for Attendance Suffocation Suicide attempt Mental Health • Scores red, amber and yellow on Mental Health Triage Scale for use with the NICE guideline on self-harm Patients Receiving Oncological All patients who are unwell should be referred straight to ED Therapy NB this may need to be established after the patient has been streamed to the UCC. Procedure Requiring Sedation Repeat Attendances 3 attendances with the same problem, or if no clear diagnosis and management plan Paediatric patients attending the UCC in excess of three times in three months should be referred to the paediatric team St Mary's. The criterion is also standard in NW London EDs and is intended to reduce repeat admissions. Respiratory problems Too breathless to talk, cry or feed ٠ Grunting ٠ Respiratory rate of > 40 breaths per minute in children over 12 • months Respiratory rate of >50 breaths per minute in child over 6 months Respiratory rate of >60 in child of any age Heart rate > 160 in child under 12 months ٠ Heart rate > 150 in child between 1 and 2 years Heart rate > 140 beats per minute in children between 2 and 5 Heart rate > 120 beats per minute in children over 5 years Use of accessory muscles in breathing Peak flow ≤ 50% of predicted or best in older children Self-harm Deliberate self harm e.g. overdose, cutting, inhalation of toxic . fumes Sickle Cell Crisis Significant blood loss in last thirty Enough red blood to fill half a mug minutes or continuing now Blood which is spurting or spraying In the event that a patient has a special patient note on their record Special Patient Notes that indicates where they are best treated, this course of action should be followed

Appendix 7: Detailed description of the patient journeys through emergency and urgent care at St Mary's and Northwick Park

St Mary's Hospital

Figure 4 depicts a flow chart of the patient journey at St. Mary's. These steps are also described below.

- 1. **Registration:** Families attend the department and are signposted to report to a reception desk in the adult ED waiting room. This can appear confusing because on arrival the entrance to the PED is located immediately on the left, and the reception desk that must be attended for registration is located on the right. Families register their child at the reception desk and are asked to wait in the separate children's waiting room in the PED.
- 2. Waiting: Children and their families wait to be triaged in the paediatric waiting room. Once children are registered at reception, they appear on the PED electronic 'bed board' and the nursing staff are made aware that they need to be triaged as soon as possible. The waiting room is surrounded by windows so that children can be observed by healthcare professionals from the nurses' station and doctors' office. The waiting room is colourful and has toys, games, and a television showing children's programs.
- 3. Triage: Children are seen by a specialist paediatric nurse for triage. The nurse assesses the urgency and severity of the illness and takes patient observations such as weight, temperature, heart rate and blood pressure independent of the condition. The nurse categorises the patient's illness on a computer system by selecting one of 53 possible triage presentations. For example, the nurse might select 'sore throat' and then pick from a list of descriptions and associated symptoms which indicate how severe the sore throat is (see Appendix 8 for this list). Based on this information, the computer automatically assigns the child a 'triage score' which ranges from 1 (requires immediate management) to 5 (non-urgent).^{xi} We noted differences in how triage nurses operate the system to get the most appropriate triage score. The triage process often takes place in a dedicated 'assessment room' which is accessed from the waiting room. However, at busy times when there are multiple children waiting, an additional nurse may conduct additional triage of patients in one of the clinical side rooms.
- 4. **Decision UCC or PED:** The nurse decides whether the child should attend the UCC or be treated in PED. This decision is made based on certain

^{xi} In the 'Manchester Triage System', the scores are calculated as from the severity of 51 clinical presentations. Depending on the severity of the presentation a patient will be allocated: 1 if the condition requires 'immediate' management, 2 if the case is 'very urgent', 3 if the case is 'urgent', 4 is the case is considered a 'standard' healthcare presentation and 5 if the case is 'non-urgent.'⁸⁴

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exclusion criteria. For example, the UCC will not accept children who have attended three or more times with the same complaint, or children that have had a seizure.

Note: The St. Mary's UCC is located in a separate building on the hospital site and is run by an organisation separate to Imperial College Healthcare NHS Trust. At present, children can only be seen and treated at St Mary's UCC if they are seen at St Mary's PED by a triage nurse first.

If the child is sent to UCC:

- 5a. **Registration:** If the child is sent to the UCC, they return to the main ED reception for registration and make an appointment to see a GP at the UCC.
- 6a. **Waiting:** The waiting time for these appointments ranged from 10 minutes up to 4 hours. Families can wait in the waiting room at UCC, or go home and return to the UCC later for their appointment.
- 7a. Medical assessment: The patient is seen by a doctor.
- 8a. **Discharge:** The patient is discharged (with or without future healthcare followup) or sent back to PED for further treatment, e.g. if further tests are needed.

If the child is sent to PED:

- 5b. **Waiting:** The patient stays in the paediatric waiting room to be called by a doctor. However, young babies or the seriously unwell are immediately allocated a bed and are seen as a priority.
- 6b. **Medical assessment:** A doctor assesses the patient's illness and, if appropriate, conducts medical tests. Patients may return to the waiting room several times and may be seen by different nurses and doctors during this stage.
- 7b. **Discharge:** The patient is either discharged (with or without future healthcare follow-up), asked to stay in the PED for additional monitoring, or admitted to an inpatient hospital ward for further care.

Northwick Park

Figure 5 depicts a flow diagram of the patient journey at Northwick Park. These steps are also described below. In contrast to St. Mary's, the Northwick Park UCC is co-located with the Northwick Park PED, and patients are seen by a streaming nurse from UCC before being referred to PED.

The Northwick Park UCC is run by Greenbrook Healthcare, an organisation separate to London Northwest Healthcare (LNWH) NHS Trust which is responsible for all other services at Northwick Park. The staff include GPs, who perform the

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same role as they would in the community but who only see emergency appointments; a paediatrician who only sees patient aged under 15; and emergency nurse practitioners (ENPs) who can assess, diagnose, treat and discharge patients with certain injuries without having to refer them to a doctor.

- 1. **Registration**: Patients attending via self-referral register at Desk 1 or 2 and are asked to wait until they can be streamed by an UCC nurse. If a patient has been directly referred to the PED, for example by a GP, they are sent directly to the emergency department registering desks (see step 4b). After registration, patients and their friends or relatives proceed to a waiting room.
- 2. **Waiting**: Within the joint Emergency and Urgent Care departments there are three waiting rooms:
 - Children's Waiting room for PED
 - Children's Waiting Room for the UCC
 - Mixed adult waiting room for both the adult ED and the UCC.

All patients (including children) that self-referred proceed to the mixed adult waiting area located in the same room as the reception and streaming desks, and wait for the streaming process.

3. Streaming: Streaming takes place at designated streaming desks in the waiting area, there is no separate room. At all times these desks are staffed by one or two streaming nurses from the UCC – these nurses see both adult and child patients. Streaming is less intensive than triage; basic questions are asked to assess the urgency and severity of the patient's illness and, if necessary, basic patient observations (heart rate, weight, oxygen saturation, blood pressure etc.) are taken. This process is more time-efficient than the triage process conducted in ED but is less thorough.

The nurse conducting the streaming assessment decides whether the patient should remain in the UCC pathway or be referred to PED dependent on their assessment of the severity of the illness.

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If the child is sent to UCC:

4a. Allocation of urgency: Patients are allocated to one of three possible categories on the IT system:

- *Routine*: The standard attendance category - this patient is not prioritised and will be seen in the order that they attended.

- *Under 2*: Any child under two years old is prioritised over a routine attendance. Northwick Park UCC aims for all children under two years old to receive a medical assessment within 30 minutes of streaming.

- **Urgent**: This patient is prioritised, and will be seen as soon as a doctor is available. 'Urgent' trumps the 'Under 2' and 'Routine' codes. If more than one patient is labelled as 'Urgent', the patient that has been waiting the longest will be seen first. The target is to see these patients within ten minutes of streaming.

In addition to the severity code listed above, patients are also coded into 'illness' or 'injury'. An illness generally refers to a condition requiring medical assessment (e.g. fever, diarrhoea, abdominal pain, vomiting, cough). An 'injury' does not require a medical assessment and is often dealt with by a nurse trained in the management of minor injuries (e.g. fractures, sprains, minor wounds, cuts and scrapes).

5a. Waiting: Patients and their families are asked to wait in the Children's Waiting Room in the UCC.

6a. Healthcare professional assessment and management:

If the patient is categorised as 'injury' they will be seen by one of the department's emergency nurse specialists or doctors; if the patient is categorised as 'illness' they will be seen by one of the GPs working in the department.

7a. **Discharge:** The patient is discharged (with or without future healthcare followup) or referred to PED for further treatment, e.g. when further tests are needed.

If the patient is sent to PED:

- 4b. **Registration:** If they are sent to PED the child and their family are asked to register at the emergency department (ED) reception desk.
- 5b. **Waiting:** After registration at the ED reception desk, children and their families are asked to wait in the Children's Waiting Room in PED until triage.
- 6b.**Triage**: Nursing triage is undertaken in a specific triage cubicle within PED. This is similar to the process at St Mary's PED. The nurse assesses the urgency and severity of the illness and takes patient observations such as heart rate and blood pressure. The nurse categorises the patient's illness on the IT system by selecting one of multiple possible triage presentations. For

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example, the nurse might select 'cough' and then, from a further list, a description of how severe the cough is for the electronic record. At the end of the triage consultation the paediatric nurse then refers to the child's paper hospital notes and assigns the child a 'triage score' which ranges from 1 (requires immediate management) to 5 (non-urgent) which is used by the clinical team.

All patients referred to PED, via the UCC or by a GP, will be seen in the emergency department regardless of the severity of the illness, none are sent back to UCC.

7b. **Waiting**: At this stage if the patient is well enough, they return to the paediatric waiting room. The patient waits here to be called by a doctor. However, young babies or the seriously unwell are immediately allocated a bed and are seen as a priority.

Waiting times vary significantly depending on how many patients are in the department, and the severity of the other patient's illnesses.

- 8b.**Medical assessment:** A doctor assesses the patient's illness and, if appropriate, conducts medical tests. Patients may return to the waiting room several times during this stage.
- 9b.**Discharge or Admission**: The patient is either discharged (with or without future healthcare follow-up); asked to stay in the PED for additional monitoring; or admitted to the inpatient hospital wards for further care.

Appendix 8: Screenshot of software used to input clinical information at triage at St Mary's PED

Paediatric Assessment								
Would you like to select a	a MTF presentation of	or other presentati	ion?	MTF O Other				
Abdominal Pain in Adults Abdominal Pain in Children Abscesses and local infections Abused or neglected child Allergy Apparently Drunk Assault Assault Beck Pain Bechaving Strangely Dites and Stings	Chemical exposure Chest Pain Collapsed Adult Crying Baby Dental Problems Diabtets Diathoea and Vomiting Ear Problems Facial Problems Facial Problems Falial Problems Falial Problems	Foreign Body Gi Bleeding Headache Head Injury Irritable Child Limb Probler Limping Child Major Traum Mental Illnes Neck Pain Overdose ar	y Pregnancy PV Bleeding Rashes Self-harm d Sexually Acquired ms Shortness of Breat d Shortness of Breat a Sore Throat s Testicular Pain Torso Injury nd Poisoning U Unwell Adult	Unwell Child Unwell Newborn Urinary Problems Worried Parent Mounds h in Adult Major Incidents - Primary h in Children Major Incidents - Seconda	ny			
O Burns and Scalds	O Fits	O Palpitations	O Unwell Baby					
Other P Sore Throat								
Present		RED	Airway comptomise Stridor Inadequate breathing Shock Unresponsive child					
Allergie Pain A		ORANGE	Altered conscious level Known or likely immunosuppression Special risk of infection Hot baby Very hot Severe Pain		E Not yet co			
Can the Level c		YELLOW	Rapid onset History of recent foreign travel Hot Moderate Pain		Not yet o Imagin			
		GREEN	 ○ Warm ○ Recent mild pain ○ Recent problem ○ Blue Triage Category 		O 10			
O Not K		DEGE		Triage Score	4			

Appendix 9: Example Patient Information Leaflet available in St Mary's paediatric ED

The second se	•	·	NHS Trust		
Emergency Dep South Wharf Ro www.imperial.	sheet has been produced by staff in Chi artment, St. Mary's Hospital, QEQM Buil ad, London W2 1NY hb.uk	ldren's ding,			
Dia	St Mary's Hospital, Inform	nation for Parent	s/Carers.		
<u>Disc</u>	narge advice for carers of childre	en who have a rev	ver (nign temperature)		
• Your chil	t's bealth gets worse	, but please teleph	one 1111 for further advice II.		
 You are v 	orried				
 You have Your child 	concerns about looking after your ch	nildathome			
 Your child develops a rash that does not disappear with pressure (see the tumbler test at the end of the sheet) 					
The fever lasts for more than 5 days without your child feeling better					
OR take them to: The nearest Emergency Department as soon as possible. All GP's have an out of hour's number and most will have arrangements for weekend GP cover. Call 111					
Preventing dehve	ration				
Preventing dehyd Offer your child re	gular drinks (where the baby is bre gular drinks (where the baby is bre Look for signs of dehydration: Sunken fontanelle (soft sp Dry mouth Sunken eyes No tears	eastfed the most a not on a baby's hea	ppropriate fluid is breast milk). d)		
Preventing dehyd Offer your child re	gular drinks (where the baby is bre gular drinks (where the baby is bre Look for signs of dehydration: Sunken fontanelle (soft sp Dry mouth Sunken eyes No tears Fewer wet nappies	eastfed the most a	ppropriate fluid is breast milk). d)		
Freventing dehyd Offer your child re f you find signs of worried.	gular drinks (where the baby is bre gular drinks (where the baby is bre Look for signs of dehydration: • Sunken fontanelle (soft sp • Dry mouth • Sunken eyes • No tears • Fewer wet nappies dehydration, encourage your child	eastfed the most a not on a baby's hea to drink more fluid	ppropriate fluid is breast milk). d) ds and seek further advice if you are		
f you find signs of worried. It is usual for a chi weight which will b some fizzy drinks	gular drinks (where the baby is bre gular drinks (where the baby is bre Look for signs of dehydration: • Sunken fontanelle (soft sp • Dry mouth • Sunken eyes • No tears • Fewer wet nappies dehydration, encourage your child d not to want to eat solids during th e regained once they recover. Give ti such as lemonade (not the "diet" v	eastfed the most a not on a baby's hea to drink more flui e first few days of hemmilk (full fat) o ariety) that has be	ppropriate fluid is breast milk). d) ds and seek further advice if you are illness and they will also lose some r sweet drinks such as lucozade, and en allowed to go flat.		
f you find signs of preventing dehyc Offer your child re fworried. t is usual for a chi weight which will some fizzy drinks <u>Clothing</u> Children with a hig how hot or cool th	gular drinks (where the baby is bre gular drinks (where the baby is bre Look for signs of dehydration: Sunken fontanelle (soft sp Dry mouth Sunken eyes No tears Fewer wet nappies dehydration, encourage your child d not to want to eat solids during th e regained once they recover. Give ti such as lemonade (not the "diet" v htemperature should not be under ey are. Remember that hats and so	eastfed the most a not on a baby's hea to drink more flui e first few days of hemmilk (full fat) o ariety) that has be or over dressed. F arves should also	ppropriate fluid is breast milk). d) ds and seek further advice if you are r sweet drinks such as lucozade, and en allowed to go flat. eel your child's back or chest to fee be removed in a child with a fever.		

Appendix 9 cont.: Example Patient Information Leaflet available in St Mary's paediatric ED



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Appendix 10: Example Patient Information Leaflet 1 available in Northwick Park UCC and PED

The following leaflet is folded into an A6 booklet:



High Temperature (Child) You should:	Please remember	NHS
 Give your child a medicine, such as junior paracetamol or ibuprofen or both if necessary, to bring down their temperature. Take your child's clothes off to cool them down, but if they still wear nappies, you can keep one on to stop any accidents. Use a fan to keep the room cool (if you have one or can borrow one), but don't point it straight at your child. Give your child plenty of cool drinks or their favourite ice-lollies, to help keep them cool. Sponge your child with lukewarm water and then dry them. You should not: Cool your child so much that they start to shiver. This means that they are too cold. 	 When you have to touch dirty nappies or clothes, you should always wash your hands afterwards. When you are preparing food, you should always wash your hands first. If the doctor has prescribed any tablets or medicines for your child, you should make sure that you read and follow all the instructions given. If the doctor has prescribed antibiotics for your child, you should make sure that they finish the course, even if they seem to be completely better. 	5 A DAY Just Eat More (fruit & veg) www.5aday.nhs.uk

Appendix 11: Example Patient Information Leaflet 2 available in Northwick Park UCC

Two-sided A5 leaflet:



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