

## Qualitative Research

# Childhood fever: a qualitative study on GPs' experiences during out-of-hours care

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### Abstract

**Background.** Fever in children is common and mostly caused by self-limiting infections. However, parents of febrile children often consult in general practice, in particular during out-of-hours care. To improve management, it is important to understand experiences of GPs managing these consultations.

**Objective.** To describe GPs' experiences regarding management of childhood fever during out-of-hours care.

**Methods.** A descriptive qualitative study using purposeful sampling, five focus group discussions were held among 37 GPs. Analysis was based on constant comparative technique using open and axial coding.

**Results.** Main categories were: (i) Workload and general experience; (ii) GPs' perceptions of determinants of consulting behaviour; (iii) Parents' expectations from the GP's point of view; (iv) Antibiotic prescribing decisions; (v) Uncertainty of GPs versus uncertainty of parents and (vi) Information exchange during the consultation. GPs felt management of childhood fever imposes a considerable workload. They perceived a mismatch between parental concerns and their own impression of illness severity, which combined with time-pressure can lead to frustration. Diagnostic uncertainty is driven by low incidences of serious infections and dealing with parental demand for antibiotics is still challenging.

**Conclusion.** Children with a fever account for a high workload during out-of-hours GP care which provides a diagnostic challenge due to the low incidence of serious illnesses and lacking long-term relationship. This can lead to frustration and drives antibiotics prescription rates. Improving information exchange during consultations and in the general public to young parents, could help provide a safety net thereby enhancing self-management, reducing consultations and workload, and subsequent antibiotic prescriptions.

**Key words:** Antibiotics, child, family practice, infection, primary health care, qualitative research.

### Introduction

Febrile illnesses are the most common reason for a child to be taken to the doctor. Childhood infections in general practice represent 60% of all consultations for children under 1 year of age and ~30%

for children up to 15 years (1,2). Most guidelines are conservative concerning the use of antibiotics in these self-limiting infections (3). However, antibiotic prescription rates for febrile children in the out-of-hours setting are on average 30–40% (4), nearly twice as high as prescription rates during routine office hours (5).

Since the year 2000, GP out-of-hours services in the Netherlands are organized in large-scale cooperatives (6). These cooperatives cover the primary care by rotating shifts of GPs during evening, nights and weekends. More than 95% of GPs participate in a cooperative, which means that patients receive care from their own GP only in a few out-of-hours contacts. In most cases, they receive care by another GP who also participates in a cooperative (7). Furthermore, Dutch GPs function as gatekeepers for secondary care. Only those children who need treatment from a paediatrician will be referred in case the GP decides this is medically indicated.

Alongside the high number of consultations, management of children with fever can be further complicated for GPs, because of (perceived) parental expectations and anxiety (8). During out-of-hours care GPs typically have no knowledge of the child's medical history or background, further complicating these often time-pressured consultations. We believe GPs often feel pressured to prescribe antibiotics, whilst only a limited number of parents actually expect a prescription (9,10). This could imply that GPs' assumptions are not always in line with the expectations of consulting parents. All these factors together drive unnecessary antibiotic prescribing and referrals and decrease (parental) self-management.

Though we know childhood fever accounts for many consultations in out-of-hours GP care, we know little about how GPs experience these consultations and what influences their management decisions (1,2,11). Actual evidence on whether they believe that the amount of consultations for febrile children create a burden during out-of-hours care and their considerations how management could generally be improved is lacking.

In order to enhance appropriate antibiotic prescribing and management in febrile children during GP out-of-hours care, it is crucial to answer the question: how do GPs experience childhood fever-related consultations during out-of-hours care and how do they believe that these consultations can be improved?

This qualitative study aims to explore the experiences of GPs regarding childhood fever consultations during out-of-hours care, thereby eliciting barriers and facilitators of good quality care including appropriate antibiotic prescribing rates and enhanced parental self-management.

## Methods

We performed a descriptive qualitative study based on naturalistic inquiry (12). GPs were questioned about their actual experiences with febrile children during out-of-hours care since this is the best approach to achieve a deeper understanding how these consultations take place in daily practice.

### Setting

The study was carried out among GPs from three different GP cooperatives in the province of Limburg in the Netherlands. This region covers a multi-ethnic population of ~607 000 inhabitants with a varying degree of socio-economic status (13).

### Participants

We approached existing GP groups using email, by contacting larger practices with multiple GPs or GPs involved in pharmacotherapeutic audit meeting groups. Every group that was approached agreed to participate. We used purposive sampling based on different backgrounds of the GPs, variation in experiences, size of practice and level of deprivation of the community served. Thirty-seven GPs were participated, of these 24 GPs were male, mean age of all the

participants was 47 years (range: 27–64 years) and the average years of clinical experience was 17 years (range: 0.5–30 years; equal to experience with out-of-hours care). Included were GPs participating in shifts at a GP out-of-hours service.

### Ethical considerations

All participants received written information and provided written informed consent. Data were used anonymously. The study was approved by the Medical Ethics committee of the Maastricht University Medical Centre (NL 13-4-060.4).

### Data collection

Data were collected from July 2013 to September 2013. A focus group guide was prepared using sensitizing concepts (14). Questions were derived from existing literature and *a priori* expert discussions. Questions were directed at the different aspects of a GP's consultation, influencing factors on their management decisions during out-of-hours care and influencing factors on parental consulting behaviour and expectations from the GPs' point of view before, during and after a consultation.

We performed five focus group discussions (FGD) with five to nine GPs per group, facilitated by an experienced and independent moderator. The FGD lasted around 90 minutes and were conducted in GP practices. We achieved data saturation after four FGD and performed one more to ensure maximum variation in sampling and to validate the findings. All FGD were audio recorded and transcribed verbatim by E.B.

### Analysis

Data were analysed using constant comparison technique; coding and analysing took place simultaneously (15). Every interview was coded by two researchers independently (E.B., K.P.). Inductive analysis was used, by first using open schemes. After this, axial coding was applied to relate codes to each other and form categories and subcategories (16,17). NVivo software version 9.0 was used for analysis. Inconsistencies about coding were discussed and resolved by consensus. The coding scheme was discussed and adjusted several times among the wider research team. The analysis resulted in six main categories.

### Trustworthiness

Data triangulation was enhanced by including GPs from three different cooperatives and covering different socio-economic areas. Investigator triangulation was realised by involving researchers from different backgrounds providing different perspectives and peer debriefing by discussing findings among the wider research team. Furthermore, a member check of the written transcript was performed among all participating GPs. We provided detailed information about the methodology and background information of the GPs, to help others decide whether the results are transferable to their context.

## Results

We identified six main categories: (i) Workload and general experience; (ii) GPs' perceptions of determinants of consulting behaviour; (iii) Parents' expectations from the GPs' point of view; (iv) Antibiotic prescribing decisions; (v) Uncertainty of GPs versus uncertainty of parents and (vi) Information exchange during the consultation.

## Workload and general experience

GPs perceived that children with fever impose a considerable workload during out-of-hours shifts, especially during seasonal incidence peaks of upper respiratory tract infections.

Especially during winter months at the GP out-of-hours centre, sometimes you see five or six of them in a row. (GP26, FGD4)

GPs generally believed there is a mismatch between parental concerns, not related to symptoms or signs, and their own impression of illness severity during the consultation. The high workload during out-of-hours care in general and the number of children that are not seriously unwell leads to frustration for almost all GPs.

Of course the point is, in a hundred thousand cases it is nothing. Just a child with a fever. I mean, when you're doing consultations on a Saturday and you've seen thirty children and not one of them was really sick, I'm just saying. (GP1) Then you're fed up for that weekend, yes. (GP3, FGD1)

Some GPs explained that this frustration partially depended on their feeling of unwarranted use of urgent care by parents. They believed that out-of-hours care should be used for urgent medical cases and that providing reassurance to parents of a febrile child should actually take place during regular office hours.

I believe it's completely logical that parents can consult their own GP during regular office-hours because of a fever. But it is not a medical emergency. Because I believe that we should have the time to take care of the real emergencies during out-of-hours care.... So that we can use our resources as sparingly as possible. (GP16, FGD3)

## GPs' perceptions of determinants of consulting behaviour

GPs perceived four key aspects affect consulting behaviour: parental worries, lack of knowledge, influence of child day care centres and increasing demand for 24-hour availability of medical services. According to GPs, parental worries were the major driving factors behind consultations and these worries and concerns were largely influenced by the duration of symptoms and the degree of fever.

...That contributes considerably to parental concerns. The height of a fever itself. (GP10, FGD2)

GPs experienced a general lack of knowledge of parents when to consult a GP. They expressed that the inability of parents to employ self-management strategies seemed to increase the number of consultations.

GPs explicitly stated that according to them the impact of child day care centres on consulting behaviour has increased over time. They experienced that defensive advice of day care centres when a child is ill drives just-in-case GP consultations which means parents follow the advice of day-care centres to have a consultation.

And in the first hours of the evening shift there are those children who get picked up at the day care centre. They [day care centre] advise them there to call a GP because the child has a fever. (GP16, FGD3)

Especially, senior GPs said they think this has been reinforced by the emergence of GP out-of-hours cooperatives. When GPs managed their own patients' out-of-hours, GPs felt parents were more reluctant to disturb their own GP out-of-hours. While GPs acknowledged that many parents express a wish for 24-hour availability of medical services, many of them agreed that out-of-hours care should be used for emergencies only. GPs in all focus groups expressed a belief that

the consultation behaviour exhibited by many parents, with frequent consultations for minor illnesses, represents a failure to take responsibility for their sick children and a 'passing off' of that responsibility to a GP. According to GPs, this might also be influenced by the fact they have seen a trend in which more parents are working during the daytime and expecting care in the out-of-hours setting.

People just show up with a child that is playing in the waiting room. He has a fever, so doctor: examine him please. They don't take any responsibility anymore for their sick child. (GP3, FGD1)

GPs mentioned seeing parents expecting a 'routine' consultation in evenings because they believed the GP out-of-hours service is there to provide care when they demand. GPs generally felt that contextual factors like the age of the child and parity of the parents contributed to this behaviour.

GPs explained that this overall feeling of increasing influence of day care centres and increasing demand for 24-hour availability of medical services attributes to their frustration. Mostly because in their eyes out-of-hours care should be used for urgent medical cases and most cases of childhood fever are not a medical emergency.

## Parents' expectations from the GP's point of view

GPs had firmly held beliefs about what parents expected from a consultation from their point of view. Firstly, GPs explicitly expressed that parents expect reassurance. However, they felt that the lack of a long-term doctor-patient relationship and prior knowledge about the patient can sometimes preclude their ability to adequately reassure parents.

Sharing uncertainty...In my own practice I can tell a mother to come back tomorrow, today I'm confident it's okay. And she trusts me so she takes him home. But when I'm at the GP out-of-hours centre that relationship isn't built in fifteen minutes and I can't do that. (GP1, FGD1)

Secondly, and related to reassurance, the value of a proper physical examination was stressed by many GPs. Some GPs said that a full physical examination was not clinically necessary for some children, because they could tell whether a child was sick by observing general behaviour. However, especially during out-of-hours care, they performed physical examination regularly to reassure parents.

However, I feel us GPs don't get away with it by saying, look I see your child running around here so I can reassure you he's doing okay. Just see your own GP tomorrow. (GP28) ... So an important part of reassuring is a physical examination? (Moderator) Yes, this is a ritual in some cases because you can tell you're not going to find anything important. (GP24, FGD4)

Thirdly, most GPs said they expect that parents consult them for antibiotics based on previous experiences. However, GPs' their perception was that expectations for antibiotics have decreased over time, especially due to media attention, campaigns in the general population, and information provided during GP consultations.

I do believe the fact that the media is telling them antibiotics are not necessary is sinking in. (GP22, FGD3)

## Antibiotic prescribing decisions

GPs mentioned that the decision to prescribe antibiotics depended on different factors of which most are similar to those during routine practice, namely duration of symptoms, what parents want, self-management by parents with little effects and what has already been done by other doctors.

I believe duration is important, if he's still making a sick impression after four or five days and he does have red ear-drums than I will prescribe antibiotics yes (GP17, FGD3)

Some GPs believed that the perceived need to obtain antibiotics was closely related to satisfaction with the consultation. This in turn may lead them to prescribing antibiotics sooner because they want to avoid a discussion with parents during these time pressured consultations.

It has to do with the time pressure you are under. If you have the time to explain and parents feel you understand them then I won't have to prescribe antibiotics. But if you only have ten minutes for a consultation and there is a huge line of patients waiting... and I would rather wait but parents insist on getting antibiotics. Well then I'm not having a discussion. Then I'll provide them with an antibiotic prescription and get them out of the door satisfied. (GP1, FGD1)

Although they acknowledged that this may play a role during all general practice consultations, they believed it to play a bigger role during out-of-hours care because of a lacking long term relationship.

At the cooperative I tend to give in to parental wishes for antibiotics sooner than in my own practice, because in my own practice I'm not afraid to take on a fight with parents. (GP30, FGD5)

GPs often felt pressured, particularly when symptoms have lasted longer and parents had lost their patience.

Well, if a child is acting difficult and it has an ear infection together with a fever, I feel that some parents become pushy. They think they need an antibiotic prescription because they can't go on like this. (GP15, FGD3)

Despite that assumption, still not all GPs explicitly ask if a parent expects antibiotics. However, they perceived that this has improved over time.

In the past I assumed that this [antibiotics] was what parents wanted. And I didn't ask them directly. And nowadays I do that more often and it turns out that they do not expect antibiotics. (GP2, FGD1)

Many GPs mentioned being used as a second opinion or last resort by parents especially in situations when parents had previous negative experiences.

It has more to do with the fact they experienced this sort of situation before when they had to come back several times. It was in fact a pneumonia... and this time they want to prevent this from happening again. Therefore, they have a different perspective. (GP9, FGD2)

Although participating GPs said they were reluctant in prescribing antibiotics themselves, it was generally agreed that antibiotics were too often inappropriately prescribed at the out-of-hours services. In general, antibiotic prescribing decisions were not straightforward during out-of-hours care.

### Uncertainty of GPs versus uncertainty of parents

GPs perceived that factors that make them (diagnostically) uncertain were different from factors that drive uncertainty and worries among parents. An important factor driving uncertainty for them as GPs was the low incidence of serious bacterial illnesses combined with a high workload. To illustrate this problem, GPs compared diagnosing complicated infections as searching for a needle in a haystack. They experienced that (diagnostic) uncertainty leads to extra careful management decisions and in turn to more antibiotic prescriptions.

I'd rather give some children antibiotics too soon, than missing one. (GP3, FGD1)

Additionally, this was further complicated by the fact that assessment and treatment was more difficult in children of whom they had no prior knowledge or relationship.

In your own practice you can take a medical history without actually seeing the child, and then sometimes considering the illness course and knowing the family I tell them to be patient for some time. (GP9, FGD2)

GPs mentioned that fever without a focus did not directly worry them as long as the child was generally well. On the contrary, a sick child with a fever without a focus did create uncertainty and concerns among both GPs and parents because this implicated a child might need treatment or additional diagnostic testing. Hence, the general appearance of the child is an important diagnostic tool for GPs, and finding a focus was considered vital when the child is generally unwell. According to the GPs, parents use different judgement criteria. They often found the fever in itself worrying and especially the height of a fever.

You know what I think causes this discrepancy? Parents make their assessment based on the temperature and we make our assessment based on the child's appearance. (GP1, FGD1)

In addition, GPs discussed that providing an accurate diagnosis is much more challenging when a specific focus for the fever is missing, as parents will often want to know what the cause of the fever is.

### Information exchange during the consultation

Generally, GPs said that they provided information on the cause of fever to parents, the expected duration of symptoms and self-management strategies such as use of paracetamol. They mainly provide verbal information, and in some cases also written information. Reasons to provide parents with written information were mainly situations when GPs were uncertain whether parents understood what was explained. Few, mainly younger GPs, directed parents to reliable internet websites for information about childhood fever. GPs did perceive that it is more difficult to provide information during out-of-hours care, especially because they see parents for the first time.

I also think that when parents previously had positive experiences with you [as their own GP], reassurance is probably more effective. (GP9, FGD2)

This was further complicated by the fact that consultations during out-of-hours care were often time pressured.

Well in that case [when you would explain everything to parents] my consultations would take even longer. You don't have the time to explain everything. You make a selection of what is most necessary, and I believe that is even more important during out-of-hours care.... Because you are dealing with time pressure and you think well this is an evening or weekend shift so that is what it's about... you should provide information to parents to make it through that period. (GP4, FGD1)

In addition to time pressure and a lacking long-term relationship, they believed it was harder to provide parents with reassurance when they couldn't provide them with information on the cause of the fever. While some GPs explained that in those cases they just tell parents it's a viral infection, there were also GPs who acknowledged that in some cases this resulted in them prescribing antibiotics, where in their own practice they probably could have reassured parents without knowing the cause of the fever.

In those cases you see that parents find it more difficult to believe you, than when you have a real diagnosis. (GP13, FGD3)

Most GPs expressed that information exchange within these consultations needs improvement and that this would improve the management of childhood fever. However, because of a lacking long term, trusting relationship and time pressure, they acknowledged that this would be challenging. Therefore, nearly all GPs thought it was even more important to increase parents' general knowledge about fever management in children prior to their children getting sick, and they also stressed a role for the well-baby and maternity centres in this respect.

I believe they should provide courses at the well-baby centres on what to do when your child is sick. (GP24, FGD4)

## Discussion

### Summary of the main results

GPs reported that childhood fever contributes a significant burden to their workload when providing out-of-hours care. Compared to routine daytime work, GPs feel they see more febrile children and experience more diagnostic uncertainty and that parents are more worried, expect antibiotics sooner and are not as easy to reassure in the out-of-hours setting. This, in combination with time pressured consultations and the feeling that out-of-hours care should only be used for medical emergencies can lead to frustration in GPs. GPs perceived that parental expectations for antibiotics have decreased over time, and that this is largely due to media campaigns and information provided by doctors. However, they feel overprescribing is still an important problem in these consultations. Lack of a long-term relationship and prior knowledge about the patient are important factors that make these consultations and resulting management decisions challenging. They believe this could be enhanced by improving information exchange at the point of care as well as providing young parents with information before their children get sick.

### Comparison with existing literature

Fever phobia and worries of parents have been described for many years (8) and parents consider a physical examination as the most important aspect of a GPs' consultation (10). GPs perform a physical examination, even though they regard it as providing limited additional information to the medical history and general impression of the child. GPs explained they felt frustrated by a high workload during out-of-hours care because of the fact that only few children were actually sick in their eyes and they felt that parents ought to visit their own GP during office hours. In other words, most GPs felt a consultation for a febrile child during out-of-hours care could be classified as unnecessary in their eyes. A previous systematic review and meta-ethnography showed that clinicians may interpret parents' efforts to establish the need for a consultation as an indicator of expecting antibiotics and parents may hear clinicians' normalising, most likely meant to be reassuring, statements as questioning the need for a consultation. This might lead to both parties feeling challenged and higher antibiotic prescription rates by GPs as a result, while in fact parents only expect reassurance from a consultation (18). Nevertheless, there were also GPs in our study that acknowledged that parents expect reassurance and not antibiotics. However, they believed that this reassurance should take place during regular office hours by parents their own GP.

This is also a possible explanation why GPs felt that increasing influence of day care centres and the wish for a 24-hour society leads to frustration. GP cooperatives were founded to reduce the workload during out-of-hours care. Generally, by dividing shifts across 50–200 GPs, the workload has been successful reduced (7). However, the workload coming from consultations for childhood fever specifically might have increased over time because of these stimulating factors.

Previous research has shown that incidence of, and consulting rates for febrile illness in children are high, especially in an out-of-hours setting (1,2,11). However, it is also known that the rate of serious bacterial infections is very low, around 1% (19). Dealing with low-incidence illnesses is challenging for GPs (20). This study confirms that this discrepancy of seeing a lot of children with a fever but only few of them actually being sick in the GPs eyes indeed proposes a diagnostic challenge. This is complicated further by a lacking long-term parental–GP relationship. This concept of trust was also found to be an important determinant of acceptance of management by parents in a previous study on antibiotics for children with respiratory tract infections (21). We examined what this means for their management decisions, especially in terms of antibiotics. GPs felt that the high workload complicates their management because of the diagnostic challenge it provides. This concept of finding a needle in a haystack led to a feeling of being careful not to miss anything and providing a proper physical examination. Although participating GPs in this study declared that they prescribe few antibiotics, hypothetically this feeling of being extra careful could also lead to more careful management decisions and drive antibiotic prescription rates.

Interestingly, GPs in the current study state that they infrequently prescribe antibiotics and that the number of parents expecting a prescription decreased over time. On contrary, around one in three consultations for febrile children results in an antibiotic prescription (4). This suggests that there is a discrepancy between the GPs' perception on their prescribing behaviour and their actual prescribing behaviour. An explanation could be that the GPs participating in this study are more motivated or aware of overprescribing. This could also explain why they feel that they have a lot of colleagues who are still overprescribing. However, it is also possible that they gave socially acceptable answers or are unaware of the fact that they themselves are still overprescribing.

### Strengths and limitations

This is one of the first qualitative studies that focus on workload and management of febrile children in the GP out-of-hours setting. The strength of this qualitative design is that it gives an in-depth insight into experiences of GPs when working in out-of-hours settings. Childhood fever management is complex and the choice of a qualitative design made it possible to research this complexity. Previous studies on this topic were a structured quantitative study or studies in a different setting like an emergency department where the rate of serious infections is considerably higher (22,23). This study tells us something on the factors that play a role in the management decisions of these GPs when they prescribe antibiotics to children during out-of-hours care.

There were no GPs who refused to participate in our focus group discussions. We aimed to reduce the influence of the researchers' point of views and opinions by using an independent moderator asking open-ended questions. However, we cannot exclude that socially acceptable answers were given. Our heterogeneous sample improves transferability of the results. However, health care systems and perception of illness are culturally different. Despite of this, we believe that we provided enough background information to let

others decide whether the results are transferable to their context. In addition, the lacking long-term relationship Dutch GPs face during out-of-hours care is something that might also play a role in countries with different out-of-hours organizational models. For example, GPs working at a NHS service during out-of-hours in the United Kingdom generally also don't have a prior relationship with a patient (6,7).

### Implications for research and practice

GPs feel they see many children because of a fever during out-of-hours care. It seems that few children are actually sick enough to need treatment, which leads to frustration. It also increases diagnostic uncertainty in the out-of-hours setting where patients and GPs do not know each other. Future research should further investigate parental experiences and explore cultural and national differences. In addition, it should focus on improving information on childhood fever provided in the consulting room and to the general public, especially amongst young parents. A recent study showed that parents of a febrile child might in fact have a stronger need for advice on symptomatic relief, or when they should re-consult than GPs realise (24). We have previously shown that an information exchange tool is effective in reducing the number of antibiotic prescriptions and intention to re-consult in children with upper respiratory tract infections (25) and that such a tool can increase parental and clinician confidence in managing these illnesses (26). We believe that this strategy could also be used in children presenting with a fever. However, this might be challenging during out-of-hours care where there is no pre-existing relationship between GPs and parents and where time is limited. Future studies should therefore also focus on providing parental education on fever and self-management to young parents in the general public.

### Conclusion

GPs perceived that children with a fever account for a high workload in out-of-hours GP care which can lead to frustration and provides a diagnostic challenge due to the low incidence of serious illnesses and lacking long-term relationship. These factors play an important role in the management decisions of GPs when they prescribe antibiotics to children during out-of-hours care. Improving information exchange during consultations but also in the general public, especially to young parents, could help provide a safety net and in that way enhance self-management, reduce consultation rates, thereby reducing the workload, frustration and diagnostic challenge. Leading to fewer antibiotic prescriptions.

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