Received: 18 November 2021 | Accepted: 14 June 2022

DOI: 10.1111/1467-9566.13515

SOCIOLOGY OF HEALTH & ILLNESS

ORIGINAL ARTICLE

The needle pricking and two modes of 'doing good' in the Swedish school-based human papillomavirus vaccination programme

Lisa Lindén[1] | **Ylva Odenbring**[2]

[1]Department of Sociology and Work Science, University of Gothenburg, Gothenburg, Sweden

[2]Department of Education, Communication and Learning, University of Gothenburg, Gothenburg, Sweden

Correspondence
Lisa Lindén, Department of Sociology and Work Science, University of Gothenburg, Box 720, 40530 Gothenburg, Sweden.
Email: lisa.linden@gu.se

Funding information
Forskningsrådet om Hälsa, Arbetsliv och Välfärd, Grant/Award Number: 2020-01232

Abstract

In this article, we draw on science and technology studies literature on care practices to analyse school nurses' work with human papillomavirus (HPV) vaccination in schools, in the context of a new vaccination policy including all children in the fifth grade in Sweden. Drawing on 21 interviews with school nurses working in municipalities across a larger Swedish region, we focus on the mundane work of handling the vaccination and supporting the children while they are being vaccinated. We utilise the notion of 'modes of doing good' to analyse routines and ideals oriented towards specific, and sometimes contradictory, forms of 'good care' in HPV vaccination practice. Two modes of doing good are identified: the vaccination as a caring for 'the flow' of children getting vaccinated and the vaccination as a caring about the specific child. We analyse three 'child subjects' alongside these modes: *the informed and already prepared child*, *the anxious child*, and *the specific child*. By identifying tensions and interferences between different child subjects and modes of doing good, we discuss possible consequences of our findings for how

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2022 The Authors. Sociology of Health & Illness published by John Wiley & Sons Ltd on behalf of Foundation for the Sociology of Health & Illness.

HPV vaccination is envisioned and conceptualised in social science research and in policy settings.

KEYWORDS
care practices, children, HPV vaccination, modes of doing good, school nurses, tensions

INTRODUCTION

This article focuses on school nurses' mundane work of handling and supporting children during vaccination against human papillomavirus (HPV) in Sweden, and is set in the context of a vaccination scheme including all children in the fifth grade (11 years old). Sociological research in this regard is limited, and the majority of existing research has analysed contexts of campaigns (Charles, 2014; Lindén, 2016) and policies (Casper & Carpenter, 2008) through a lens of governmentality (Mishra & Graham, 2012). Nevertheless, the literature suggests that school nurses frame HPV vaccination as something they need to fit within their already busy workdays (Virtanen & Salmivaara, 2021). It has also been emphasised that, in contrast to official campaigns, girls do not experience HPV vaccination as a matter of an individual knowledge-based decision (Virtanen & Salmivaara, 2021). Instead, it is experienced as being centred around the needle prick, which is an event that can generate fear and anxiety (Mishra & Graham, 2012).

Outside of sociology, social scientific public health research has shown that school nurses experience their workload as affecting their ability to carry out certain tasks, such as preparing the girls for the vaccination (Rockliffe et al., 2020) or managing the vaccination alongside other tasks (Hilton et al., 2011). Research also shows that school nurses find that 'needle fear' affects girls' willingness to get vaccinated (Rockliffe et al., 2020), and that these nurses handle this by making the vaccination as comfortable as possible, for instance by allowing girls to bring a friend for support (Runngren et al., 2020). In relation to HPV vaccination decision-making, Gottvall et al. (2015) suggest that school nurses strive for a decision all parties can accept, while also favouring 'the minor's right to autonomy' (p. 59). They argue that an analytical lens of 'relational autonomy' can help to solve the ethical dilemmas arising in decision-making. Finally, a Swedish study conducted prior to the involvement of boys in the HPV vaccination programme (Mattebo et al., 2021) showed that school nurses found it difficult to interest boys in information about HPV and HPV vaccination, as boys felt that the vaccination did not concern them.

This article contributes to existing social scientific research on HPV vaccination by zooming in on *the mundane work of vaccinating children against HPV in schools*. We relate to the above-mentioned literature on HPV vaccination to discuss decision-making (Gottvall et al., 2015) and needle anxiety/fear (Mishra & Graham, 2012; Rockliffe et al., 2020; Virtanen & Salmivaara, 2021), but we also attend to how school nurses adjust and adapt their mundane work of vaccination in attempts to 'care well' for concerned children. By situating our article in science and technology studies (STS) and drawing on interviews with school nurses in Sweden, we show how school nurses' work includes implicit ideals of 'good care' (Pols, 2015). Whereas the public health literature adopts *general* ethical ideals of 'autonomy' and 'individuality' to analyse HPV vaccination in schools, we use STS literature to show the value of approaching care as a mundane practice, elucidating how 'good care' is strived towards in *specific* ways (Mol et al., 2010). We argue that the attention to the mundane and the specific in HPV vaccination practice is important, as this care

'is silently incorporated in practices and does not speak for itself' (Mol, 2008, p. 2). If not attended to, important aspects of care risk being excluded in policy discussions, as they are easily taken for granted and are not seen as part of the bigger picture.

In Sweden, a new HPV vaccination programme including boys as well as girls was introduced in 2020.[1] While we acknowledge that this policy change generates important questions about gender and sexuality, this is something we will discuss elsewhere.[2] Instead, our aim in this specific article is to contribute insights concerning school nurses' mundane work when vaccinating children against HPV, and how this work relates to implicit ideals of care. We intend to highlight and discuss how this mundane work matters for HPV vaccination policy. We ask: How do school nurses describe their work with giving the children the HPV vaccine, and how does this work relate to different ideals of care?

STS, CARE AND 'MODES OF DOING GOOD'

While approaches to care in STS are diverse (Lindén & Lydahl, 2021), we particularly use the empirical ethics of care (Pols, 2015), which is concerned with practical care work such as 'daily life dealings' (Mol et al., 2010, p. 15) and 'local solutions to specific problems' (Mol et al., 2010, p. 13). Unlike care ethics and bioethical approaches to care and 'relational autonomy' (Gottvall et al., 2015; Verkerk, 2001), the empirical ethics of care does not depart from a priori definitions of 'the good' and 'care'. Instead, it focuses on descriptions of socio-material practices where 'participants undertake practical work that is aimed at stabilizing or improving the situation of those being cared for' (Pols, 2015, p. 82). It analyses 'different and sometimes conflicting notions of what is good care *within* care practices' (Pols, 2015, p. 82). Working with this approach, we attend to how school nurses, in their mundane practice, work to achieve good care.[3] We therefore conceptualise 'good care' as 'the local strivings, values and material enactments of it' (Pols, 2015, p. 82). Importantly, while we attend to strivings towards good care, we do not assume 'care' to be a taken-for-granted good. Care has 'a dark side' (Martin et al., 2015), and cannot be separated from politics and an already stratified world (Lindén & Lydahl, 2021).

In our analysis, we use the notion of 'modes of doing good' (Pols, 2003). Extending STS scholar Law's (1994) notion of 'modes of ordering', Pols argues that 'modes of doing good' can be read as specific ways of 'ordering' care practices. Following Pols (2003), we define a mode of doing good as 'a pattern of ideals, procedures, routines and knowledge that is oriented towards a specific form of "good care"' (Pols, 2003, p. 320). We analyse how modes of 'doing good' are enacted in and through the relations of humans and technologies—such as children, school nurses and vaccine needles—involved in the event of vaccinating a child (Mol et al., 2010). Here, we use the notion of enactment to highlight how practices *bring about* specific modes of 'doing good' (Mol et al., 2010). In our focus on modes of doing good, we particularly examine *routines* and *ideals* (Pols, 2003); and in doing so, we tease out *specific* modes of good care by analysing *specific* routines and ideals.

Modes of 'doing good' may be in tension with each other. Within care practices, work is done to adapt and adjust routines and other forms of mundane work in order to make the modes work together. We use the notion of 'interferences' to examine how different modes relate to each other. Extending feminist science scholar Haraway's (1997) conceptualisation, Pols (2003, p. 321) uses interferences to denote situations when different modes 'meet' and mutually change each other's workings. Instead of a situation where one of the modes imposes itself on the other, something new is created in the meeting between the modes. Sometimes this interference means that the

modes accommodate one another; other times tensions remain and need to be continuously 'tinkered' with (Mol et al., 2010; Pols, 2003). Moreover, to specify differences in care *between* modes of doing good, we find it helpful in this article to draw upon the distinction in feminist STS literature between 'caring for' and 'caring about' (Martin et al., 2015). In this literature, 'caring for' is conceptualised as a directed and goal-oriented mode of care and 'caring about' is approached as a 'staying open' towards *how to* care for another actor in a specific situation (Schrader, 2015).

We analyse how routines relate to ideals of 'doing good'. To capture ideals, we examine implicit ideals not only of 'good care' but also of the recipient of care; that is, the child. Modes of doing good may be oriented towards 'different understandings of *the subject of care*' (Lydahl & Hansen Löfstrand, 2020, p. 901). Hence, different *child subjects* (as we will conceptualise them) may be oriented towards different ideals of 'good care'.

THE STUDY AND METHOD

This article is part of a larger ethnographic project about the introduction of an HPV vaccination programme for all children in Sweden. Ethics approval was granted by the Swedish Ethical Review Authority in December 2020 (application number dnr-2020-06051). Between March and May 2021, we conducted 21 interviews with school nurses, focussed on their work with HPV vaccination. To ensure confidentiality, pseudonyms are used for all the participants referred to in this article. The school nurses were employed within one of Sweden's 21 regions, but at different primary schools. The vast majority were employed in different municipalities (two within the same municipality but in different school districts). We intentionally sought a diverse selection, with school nurses working in a greater metropolitan area, in medium-sized towns, in small towns and in rural areas. Most of the school nurses were employed at two or three schools and alternated their time between these. In line with regional policies, the school nurses were responsible for providing the vaccination at 'their own' schools, but they were always assisted by another school nurse during the day of the vaccination. In most cases, the school nurses were located via the municipalities' websites and contacted through personal phone calls, though in one municipality the chief school nurse sent out information about the study to all the school nurses in the municipality, who contacted us via email. All the school nurses interviewed were women, which reflects the female-dominated nature of school nursing. We did locate a few male school nurses, but they did not reply when contacted.

The aim of the interviews was to learn about HPV vaccination in school nursing practice. Ideally, we would have observed the school nurses when they vaccinated the children, and combined this with interviews. This is something we plan to do in the larger project, but the COVID-19 pandemic has so far prevented it. We therefore performed semi-structured interviews via video call to capture 'ways of talking about practices' (Pols, 2003, p. 321). The interviews lasted between 40 min and 1 h, and were transcribed verbatim. To allow for a focus on mundanity, we asked questions about the specificities of activities the school nurses might take for granted. We asked them to describe what they did in practical terms in connection to the HPV vaccination, which opened up the possibility for follow-up questions about concrete situations. For example, we asked them to tell us about how they conducted the vaccination and what challenges they faced in this work.

The interview transcripts were analysed thematically (Braun & Clarke, 2006). During this step-by-step process, we read through the interview transcripts multiple times and jointly discussed the data to articulate recurrent themes. The analysis identified two prevailing themes

in the school nurses' accounts of the needle pricking, which are the focus of this article: (1) the vaccination as a 'flow' of children getting vaccinated, and (2) the importance of the needs and wishes of each child. These two themes were connected to mundane activities focussed on enabling the vaccination to unfold smoothly *and* to support each child. Moreover, the school nurses talked about the children in differing ways in relation to these activities, and their narratives included assumptions about what children do, what children want and how children should be cared for. Using the previously mentioned literature on care in STS, we developed an analysis of the two themes as two different 'modes of doing good': caring for the flow of children, and caring about the specific child. In doing this, we approached notions such as 'routines' and 'ideals' as useful analytics to think *with* (Haraway, 1997; Puig de la Bellacasa, 2017); not as phenomena 'out there' to study, but as sensitivities that allowed us to pay attention to the mundane, the often taken for granted, and strivings towards 'good care'.

The results are organised here according to the two modes of doing good: caring for the flow of children (mode one) and caring about the specific child (mode two). In line with the notions of routines, ideals and subjects, we present the modes through sub-themes related to these notions, using excerpts from our data. We begin each section by analysing different ideals of the child, and then move to the routines that the school nurses adopted and adjusted in relation to these child subjects. These sub-sections are: *the already informed child prepared to get vaccinated*, *the anxious child complicating the flow* and *routines for maintaining the flow* (mode one); and *the specific child and 'the good meeting'*, and *routines for responding to the specific child during the meeting* (mode two).

MODE ONE: CARING FOR THE FLOW OF CHILDREN

The already informed child prepared to get vaccinated

When the school nurses discussed the day of vaccinating the children, they often talked about it in terms of a 'flow', which typified a successful vaccination practice. To highlight how the flow was oriented towards specific ideals of 'good care', we conceptualise it as a mode of doing good. The flow included the whole event of giving the children the vaccine shots, which usually started with the child being brought from the classroom to the school nurse's appointment room, and ended with the child taking some time to rest outside the room afterwards.

One informant, Marie, talked about the last time she vaccinated the children at her school:

> My preparations before the vaccinations resulted in less questions, less anxiety or other things [...] The flow was really good when it was time for the vaccinations.
>
> (Marie)

As suggested by Marie, while the school nurses' preparation work occurred before the vaccination day, the flow of the day depended on this work. Preparation work made it possible to vaccinate an entire school class in just a few hours. Such work included obtaining the completed informed consent forms from the children's parents and organising and preparing the vaccine needles. The school nurses also talked about how they prepared and informed the children about the vaccination beforehand, primarily through a classroom visit. Some of them also mentioned principals who had told them that the vaccination ought to take, for example, 'two min per child' (Sofia). Finally, many emphasised that their workload had increased now that boys were included

too, and that the extended vaccination scheme needed to fit within their already busy workdays (see also Rockliffe et al., 2020; Virtanen & Salmivaara, 2021). In summary, in this practice, the vaccination was envisioned as a rapid event, with limited time available, and with an already informed child subject. We conceptualise this preparation work as a caring *for* a good flow of children getting vaccinated. This goal-oriented mode of caring allowed the school nurses to align their work with a larger policy aim of vaccinating as many children as possible (cf. Runngren et al., 2020).

The school nurses spoke about the vaccination as something that was executed not only effectively but also in an unrushed manner. They tried to achieve 'a calm and secure atmosphere with no stress' (Runngren et al., 2020, p. 5), which fed into the way that many of them described 'the flow'. The school nurse Ulrika captured this paradox well, saying that 'there's no stress or hurry, instead it goes very rapidly'. She continued:

> [...] The process is really calm and easy, and there's no hurry, and when those students are finished, they go back to their classrooms and two or three more students turn up. It's like a flow.
>
> (Ulrika)

Several of the school nurses used the metaphor of 'an assembly line' to describe the flow of children getting vaccinated.

> ***Interviewer***: You said it's like an assembly line... can you tell me a little bit more what you mean by that?
> ***Eva***: It sounds a bit ugly, but you can go on forever, but my experience is that they just want to get it over with quickly, easy and quickly, and have it done as quickly as possible. They don't make that much fuss about it, they know what to expect, they're prepared, they've received information, and some of them might have asked for more information. When that's done, they enter the appointment room, I ask the usual health questions and 'now you'll feel a sting'...so. And done.
> ***Interviewer***: And it's the next child's turn.
> ***Eva***: Yes, exactly.

The school nurses emphasised that the needle pricking was done quickly. However, as exemplified by Eva's focus on information, this version of the needle pricking and of care depended on an ideal of an informed child who does not feel the need to pose questions during the actual needle pricking. The vaccination decision has already been made, and the child has already received information. Thus, vaccine decision-making was enacted as providing information, primarily via the classroom visit, along with the informed consent form signed by the parents.

This was further exemplified by another school nurse, Susanne:

> I'm very... when it comes to vaccinations... I do it really quickly. If the student is really focused there's no reason to wait, and then "let's just do it". That's the case for most of them actually.
>
> (Susanne)

Indeed, many of the school nurses emphasised that if the child was 'focused' or 'prepared', the needle pricking was executed quickly. Here, the HPV vaccine was only present as a quick needle stick, which allowed for a rapid yet calm flow.

Consequently, the flow as a mode of doing good enacts an ideal of the child as an individual who, once given information, is prepared, with the vaccination decision already made beforehand. This *informed child subject* is in line with an ideal of rational, individual decision-making: information is given, a decision is made and the subject acts accordingly (cf. Virtanen & Salmivaara, 2021). Here, 'doing good' as a caring for the flow of children getting vaccinated is closely linked to an ideal of the HPV vaccination and of care as simply *the execution of* a decision that has already been made. This care is enacted as good *because* it is quick.

The anxious child as complicating the flow

While the school nurses highlighted that the vaccination was typically done rapidly, almost all of them simultaneously talked about the children as anxious, scared and uneasy about the needle pricking; that is, what previous research has defined as 'needle anxiety/fear' (Rockliffe et al., 2020; Virtanen & Salmivaara, 2021). The school nurses also spoke about 'mass hysteria' in specific classes, when suddenly almost all the children were anxious; they noted that, in line with previous research, 'this kind of social panic makes the actual vaccination more difficult' (Virtanen & Salmivaara, 2021, p. 1230). Here, we see the emergence of a child subject who differs from the informed and prepared child, namely an anxious child subject.[4]

The school nurses talked about how the children lived in the 'here and now'. The children's focus was not primarily on what the HPV vaccination was for; instead, it was 'an event centered around the needle pricking' (Virtanen & Salmivaara, 2021, p. 1227). One school nurse, Maria, said:

> They don't ask much about why they should get it; they just think you should... but they ask, does it hurt? I get that question all the time.
>
> (Maria)

Like Maria, the other school nurses also highlighted that the children tended to ask about whether the needle prick would hurt. Several brought up the fact that the HPV vaccine is more painful than other childhood vaccines, and said that they thought that many of the children had heard about this from their peers (see also Graham & Mishra, 2012, p. 63).[5]

To handle the needle anxieties, the school nurses tried to inform the children, and respond to any concerns, before the day of the vaccination; for example, via a classroom visit. Nevertheless, they explained that the children often made each other scared, generating an anxious atmosphere during the vaccination day:

> No matter what vaccination you're giving, they always stress each other out.
>
> (Kerstin)

The anxious child posed a concern for the school nurses, since an anxious atmosphere made the vaccination more difficult, which complicated the flow. This child subject was presented as easily

affected by peers and as part of a 'social panic'. As discussed above, the informed child subject is oriented towards an ideal of individual decision-making; conversely, the anxious child is a relational child, but our informants presented this relation as a problematic one. In using the notion of 'relational', we here refer to an understanding of children's orientation towards the needle stick and the HPV vaccine as being constituted in relation to other children's actions. While the HPV vaccine in relation to the informed child subject is simply a quick needle stick, in relation to the anxious child subject the needle pricking poses a key concern both for the school nurses and for the children.

Routines for maintaining the flow

The school nurses adopted specific mundane routines to dampen the children's anxieties and maintain the flow. We define this as mundane work done to 'care for' and maintain the flow of children getting vaccinated. One key routine had to do with how many children were brought together from the classroom to the school nurse's office. This was a big concern for many of the school nurses, and they talked about how they had tried different ways of handling it over time.

One school nurse, Emma, talked about this issue in terms of enabling 'a good flow', thus highlighting the child who made other children anxious as a problematic subject within the flow as a mode of doing good.

> ***Emma***: [...] The teachers let them come in pairs. They come to the appointment room by themselves and then they sit down for a while afterwards and have a glass of juice.
> ***Interviewer***: You let them come in pairs, is that because... why is that?
> ***Emma***: Because it will be a good flow and then they have each other, or three, too [...]
> ***Interviewer***: And have each other because they should feel safe about the situation...
> ***Emma***: Yes, that's one of the reasons, and to get a flow. Some of them are waiting and then you take the next one, but also because they have each other. It could be positive and negative, I'd say, they scare each other. [...] They can also bring a friend, but only a friend who's already had their vaccine, I tell them. Someone who's already had the vaccine can join... as support.
> ***Interviewer***: What's the reason behind that?
> ***Emma***: To avoid them getting scared.

The excerpt above shows how Emma hoped that letting the children come in pairs would both allow the children to feel less anxious and maintain the flow of children getting vaccinated. At the same time, this was difficult, as the children could just as easily make each other more anxious, and the supporting friend might instead induce anxieties. Here, the anxious child subject poses a concern as it complicates the flow. Moreover, Emma's account also exemplifies that the issue of bringing a friend or not is linked both to a larger policy aim of delivering the vaccination *and* to a question of how to care well for concerned children, given vaccination as a larger goal.

One school nurse, Kristina, had made the decision not to allow the children to bring a friend:

> ***Kristina***: [...] I've worked in various ways and now I think I've found a way that suits me best and that I think is the calmest for the student. I don't like when you come here in pairs or

when you bring a friend, I say no to that. What happens is that you end up with six passed-out people lying in a bed if you let more people in at the same time. [...]
***Interviewer*:** Is it because they incite each other? So they faint for that reason.
***Kristina*:** 'I'm soooo scared, I'm soooo scared, I don't want to, you go first.' Then you say... 'Come on, we're doing it your way,' and then everything's fine, but if they come in pairs, then... gosh...

While some school nurses allowed a friend to come as support, others did not. These differing routines are important, as they point towards a tension. While the flow is oriented towards an ideal of *the predictability* of the children getting vaccinated, the school nurses' accounts highlight *the unpredictability* in how children may react. Bringing a friend as support can sometimes work, while other times that friend may instead add extra anxiety. It therefore makes sense that the school nurses adopted different routines—or local solutions—to solve this.

Kristina's account also suggests that the routine a nurse adopts, like that of not allowing a friend to come along, may be in tension with the wishes of the children. Kristina explained that the children often wanted to bring a friend. Many of the other school nurses also described how they had based their decision on what had *generally* worked best. In accounts such as Kristina's, the nurse is enacted as the decision-maker for the vaccination, as children are positioned as being too easily affected by each other. Here, care is oriented towards the child as an anxious subject rather than an informed and prepared individual. This highlights a difference regarding when and how children are positioned as capable of decision-making, linked to the two differing ideals of the child within this mode of doing good: the informed child and the anxious child.

In contrast, some school nurses adjusted their routines in relation to what the children wanted. For example, Ulrika talked about how she let the children decide what felt good for them:

***Interviewer*:** So, they come in pairs or threes if they want, and then the friends have to stay outside...
***Ulrika*:** They're allowed to come in pairs, you know what I mean? But we prefer not to have too many in the appointment room. They can bring a friend, and if there's four of them, the other two will wait on the sofa outside and there will be two in the appointment room. I usually ask who wants to start. Often they've decided beforehand, 'She's going first,' or 'He's going first.' They decide themselves. [...]
***Interviewer*:** And the friend, is the friend sitting next to them and holding their hand or...
***Ulrika*:** Yes, that's one way to do it, it varies. The friend is either sitting next to them or holding their hand...that depends on what they want; they decide what's most comfortable for them. If you want to come by yourself, you can do that too. It's up to them.

Here, what feels good for the children is assumed to also be the best routine *in general*, and children are viewed as capable of knowing what is good for them. This is, then, yet another ideal of the child, distinct from both the informed child and the anxious child. The child is included as a decision-maker who participates in shaping the vaccination to make it as comfortable as possible.

The ideals of the anxious child and the child who is capable of knowing what is good for themself are easily in tension. This requires school nurses to adopt differing routines to handle such tensions, which is something that involves mundane work. Moreover, as suggested by the routine of adjusting the approach to what each child wants, a child whose wishes and actions are

difficult to fully anticipate ahead of the vaccination might interfere with the flow as a mode of doing good. We now turn to this child subject as part of another mode of doing good.

MODE TWO: CARING ABOUT THE SPECIFIC CHILD

The specific child and 'the good meeting'

The school nurses' accounts had a strong focus on attending to the wishes of the children themselves; we conceptualise this as a mode of doing good oriented towards caring about the specific child. More specifically, we show how school nurses in this mode of doing good responded to each child through a care that remained open towards *how to* care in specific situations, and that was *more than* a goal-oriented activity. Here, we use 'responding to' to conceptualise care as a 'capacity or willingness to respond' (Martin et al., 2015, p. 635) to another actor. In the interviews, this mode was in particular focus in accounts of the school nurses' meetings with the children in their appointment room, when the children were getting their vaccine shot. In these parts of the interviews, the school nurses focussed on how they tried to create 'a good meeting' with each child during the very limited time of the needle prick.

The school nurses talked about how they quickly 'got a sense' of the child, for example, via small talk, and that they adjusted their approach in relation to this sensing of the child. One of them, Malin, said:

> I check to make sure that everything is okay, of course. You talk to them the entire time and try to calm them and make them as comfortable as possible. [...]. Then they sit on a chair and I sit on another chair and talk to them. If they're scared...it depends slightly on how they feel, how long you have to sit down with them and talk and calm them down.
>
> (Malin)

The other school nurses also said that they conducted small talk with the child to get a sense of how the child felt about the situation. They explained that this was how they learnt whether a child was anxious or uneasy, and if they needed to slow down, hold the child's hand, say something calming, or try another approach. It enabled them to tinker with how to best attend to each child, and to evaluate their actions and adjust them if necessary (cf. Pols, 2015).

In addition to small talk, the school nurses said that they could quickly get a sense of how a child was doing by looking at them. One nurse, Kerstin, exemplified this with a description of how she and her colleague worked:

> We check the children; she's also a paediatric nurse. If she notices something, we just have to look at each other, I and [the colleague], and she understands that she has to support them and hold their hand and put her arm around them. Eye contact and talking to the children.
>
> (Kerstin)

The knowledge gained by extensive experience of working with children and childhood vaccinations allowed the school nurses to quickly adjust their approach in relation to each child. They

oriented themselves to the fact that they did not fully know how each child was going to react and what each child wanted.

During their accounts of the meeting with the children in the appointment room, the school nurses often described children as different from one another. While some children wanted to 'get it done', others needed extra support. This meant there was a strong focus on adjustments in relation to each child. For example, Malin said:

> They really want to know...how much it will hurt, what it will feel like. If you'll be injecting the entire needle or just a small part of the needle. There are many questions sometimes. And some of them just want you to do it as quickly as possible and not talk too much. It's based on the student's wishes.
>
> (Malin)

Malin's approach can be contrasted with Eva's account of the process as an assembly line and the vaccination as quickly executed. While Eva said that the children were already informed and knew what awaited them because the vaccination decision had already been made, excerpts about the meeting with each child instead highlight that *it differs*. Moreover, while the parts of the narratives concerned with 'the flow' emphasised that children wanted to 'get it done', Malin's account exemplifies another possible orientation towards the needle stick and the HPV vaccine: a child who, in the moment of the needle pricking, wants to see and talk about the needle in order to understand what will happen next. Some of the school nurses also mentioned children who wanted to hold the needle to get a feeling for it. Accounts such as these highlight the presence of a child whose wishes and actions differ from those of other children and cannot be fully anticipated.

We define this as a *specific child subject*. While the school nurse might, for example, learn in the meeting with an individual child that this child is calm or anxious, our point is that this is not fully possible to anticipate ahead of time. This allows us to further develop the discussion above around the school nurses' differing routines concerning the issue of bringing a friend or not. The unpredictability in how children will act in the appointment room can be understood as an interference between the two modes of doing good, where the flow is not interfered by the informed *or* the anxious child, but by the specific, and therefore unpredictable, child.

To create a good meeting, the school nurses tried to make the children feel like they had control over the situation. While this was a general theme in the interviews, it became particularly clear in accounts about children being scared of the needle stick. For example, when asked how she handled children who were scared of the needle, Kristina said:

> I usually tell them that "I'll never hold you down; you decide when you're ready and then I'll give you the shot. But you have to sit completely still. If you move, I might scratch you with the needle. You have to tell me when you're ready." And I'm patient and wait until they finally say, "Just do it then." [...]. I've had a lot of students who're really scared, and it works eventually when you tell them that they're the ones in control. "We won't do anything until you're ready," and that normally works.
>
> (Kristina)

The school nurses often said that in meetings with scared children they gave these children time, for example, by making it clear that the children were to decide when the nurse could give them the injection. As this suggests, while the mode of the flow was attuned to speed and predictability,

the meeting with the specific child subject was instead focussed on good care in terms of giving each child the time they needed, while also assuming that it was not fully possible to anticipate how each child would react and respond. This type of care is potentially in tension with the idea of the vaccination as a speedy 'flow' and a 'quick' care thanks to the already prepared child. Notably, while several of the school nurses said that they gave each child the time that the child needed, they also emphasised that the vaccination needed to fit within their busy workdays. Thus, in their mundane practice, they worked to hold together a good caring for each child with limited timeframes (see also Hilton et al., 2011; Rockliffe et al., 2020).

Almost all the school nurses emphasised that they would not vaccinate a child who did not agree to it, or who was too scared. Hence, in the moment of the needle pricking, the children could refuse to get vaccinated. Additionally, the meeting with the specific child *extended* the vaccination decision-making in time, to also encompass the very moment of the needle pricking. The decision became enacted as ongoing, and so a caring about the specific child opened up the 'directions, temporalities, intensities, and forms of action' (Martin et al., 2015, p. 635) for *how to* care. This stands in contrast to an ideal of decision-making as a process of receiving information and signing the informed consent sheet. Instead, it highlights decision-making as dependent on a care oriented towards making oneself available to respond to the specific child without fully knowing ahead of time what form that response should take. Whereas Gottvall et al. (2015, p. 59) conceptualise HPV vaccination decision-making as a relational process based on experience rather than 'a strive for doing good to "undifferentiated others"', we emphasise the openness towards *how to* care about the child in this practice.

Routines for responding to the specific child during the meeting

In responding to the specific child, the school nurses used routines to help the children feel as though they were in control when they were being vaccinated. Eva said:

> I try to make the student feel that they have control over the situation. For example, we might decide to count how long it will take. "How long should it take? Shall we count to five? One, two, three, four, five. Should it be finished in that time?" "Yes," they might reply. "Okay, good, then I know [and] I promise you... and I *really* promise you... that it won't take any longer than counting to five," and then we count together and that normally works.
>
> (Eva)

In allowing the child to decide whether, and for how long, they will count before the needle stick, the school nurses stressed the importance of making the child feel in control of the situation. Other examples they mentioned were allowing the children to listen to some music or watch a video on their mobile phone (see also Rockliffe et al., 2020, p. 140). These examples can be understood as *general routines* adopted by the school nurses, but *adjusted* to make them fit the wishes of each child.

Both the small talk and the routines to make the children feel like they were in control had a double purpose. The school nurses talked about them as ways of making the children feel secure, and as ways of diverting their attention from the needle pricking. Thus, they were part of a larger policy goal of getting the children vaccinated. This duality is an example of how the two modes of doing good can co-exist peacefully without disturbing each other, allowing the school nurses

to simultaneously 'care for' the flow of children and to 'care about' the specific child. Routines such as counting down together allowed the school nurses to keep the individual child in front of them calm and to get the vaccination done, which meant that the next child could enter the room without delay. These routines thus allowed the ideals of 'rapid vaccination' and 'caring well for children' to co-exist.

Nevertheless, the school nurses brought up examples that can be understood as clashes between the two modes. In particular, they talked about situations where nothing worked to calm a scared child down, which negatively impacted on the other children waiting outside the appointment room. For example, Sofia said:

> It might get quite difficult on the day when you're going to do a lot of vaccinations, if a scared child takes... if it takes a really long time to get that child vaccinated. First... just when you're about to do the vaccination, the child moves their arm and after that they need some time to recover and then you think, we'll try one more time. And then we do it and the whole process takes a while. While all this is happening there are several others waiting to get vaccinated, and that might create a stressful situation for them.
>
> (Sofia)

As this excerpt exemplifies, when it took a particularly long time to vaccinate a child, this might make the other children anxious. Moreover, the school nurses mentioned that if a scared child left the appointment room while visibly upset, this might also make the awaiting children anxious.

We understand these situations as moments when the two modes interfered with one another. This pinpoints the waiting room as an area where the two modes of doing good may be in tension, with the children waiting to be vaccinated in close proximity to the child in the appointment room. As exemplified by the account from Sofia, in these situations the school nurses had to pay attention to the scared child in front of them, while also keeping in the back of their mind that there were children waiting just outside who might be made anxious by the scared child. The school nurses talked about different routines they used to handle this, such as vaccinating particularly scared children on another day or at a different time of the day. Nevertheless, they also brought up examples of children whom they only learnt were scared during the meeting, further exemplifying the above-discussed unpredictability of the specific child. In these situations, the two modes of doing good are in tension, as one is attuned to predictability and the other is about managing unpredictability. Situations such as these suggest that unpredictability cannot be simply 'solved' through new routines, but rather that unpredictability is an integral part of vaccination practice and of school nurses' mundane work.

CONCLUDING DISCUSSION

In this article, we have analysed school nurses' mundane work when vaccinating children against HPV. This differs from previous sociological research on HPV vaccination, which predominantly have focussed on gendered risk discourses through a lens of governmentality (Casper & Carpenter, 2008; Charles, 2014). Nevertheless, we have related to the few sociological studies that partly have attended to the event of the needle pricking (Mishra & Graham, 2012; Virtanen & Salmivaara, 2021). We have also related to social scientific public health research focussed on school nurses' work with the vaccination (Hilton et al., 2011; Mattebo et al., 2021).

However, these two bodies of research only briefly mention the event of the needle pricking (e.g., Runngren et al., 2020, p. 5; Virtanen & Salmivaara, 2021, p. 1227). Moreover, the social scientific public health research adopts general ideals such as 'autonomy' to approach the vaccination (Gottvall et al., 2015).

We have used a different analytical strategy, distinguishing between two 'modes of doing good' (Pols, 2003). Drawing on STS care literature, we have defined the first mode as being oriented towards a care which maintains the 'flow' of children getting vaccinated, and the second as being oriented towards caring about the specific child. We have attended to how the two modes of doing good relate to mundane routines as well as to implicit ideals of care. In particular, we have paid attention to how the two modes relate to each other; how they interfere with each other and sometimes are in tension (Haraway, 1997; Pols, 2003). Moreover, we have identified different child subjects as part of the two modes of doing good: *the informed and already prepared child*, *the anxious child* and *the specific child*. According to the ideal of the informed child, an individual who has been given information will then act accordingly, which allows for the vaccination to happen rapidly. This is in line with ideas such as that the vaccination ought to take 'two min per child'. However, and as the anxious and specific child subjects suggest, in practice things are often more complex.

This complexity in practice has important implications. We argue that the school nurses adopted and adjusted different routines to relate the flow as a rapid vaccination event to their striving towards caring well for each child during the needle pricking. While Pols (2003) uses different care wards to explicate different modes of doing good, we suggest that it is possible to understand the relation between our two modes of doing good through a metaphor of enfolding. We argue that the school nurses 'enfold' the mode of caring about the specific child *within* the mode of care for the flow of children (and for the larger goal of vaccinating as many children as possible). Moreover, in meetings with the individual children, the school nurses often extended the HPV vaccination decision-making in time and involved the children as decision-makers. This enacts vaccination decision-making as an ongoing process that requires the school nurses to tinker (Mol et al., 2010) and 'respond to' (Puig de la Bellacasa, 2017) the child in front of them. Importantly, as a care which is attentive to each child and to unpredictability can easily come into tension with a policy goal of rapid vaccination, we argue that it is important to highlight the work school nurses do to make these contradictory ideals of care work together. For example, if the school nurses had worked only in accordance with a goal of rapidly vaccinating as many children as possible, the parents' decision would have been considered final even in the very moment of the needle pricking, and school nurses would have had to, for example, hold children down in order to vaccinate them.

This allows us to contribute to the existing literature in sociology and public health. In this literature, improving the vaccination is primarily viewed as a matter of information and knowledge (Mattebo et al., 2021; Rockliffe et al., 2020). For example, Runngren et al. (2020) suggest that concise guidelines should be provided to school nurses in order to reduce inappropriate variation in how information is provided to children and their parents. Similarly, the issue of 'needle anxiety' is presented as a matter of talking to the children 'about the vaccination and to educate them, as well as calming nervous girls [children] down before the procedure, and dispelling misconceptions and fears' (Rockliffe et al., 2020, p. 139). In turn, Mishra and Graham (2012, p. 63) argue that 'the management of the flow of students between the site and the classroom allows time to share information with the teenagers', something which 'limits the spread of anxiety'. However, and as Virtanen and Salmivaara (2021) have shown, children might not experience the HPV

vaccination as a knowledge-based decision, but one centred on the very event of the needle stick. If that is the case, more sharing of information is not the solution. Adding to this research, we suggest that approaching the needle pricking as primarily a matter of knowledge and informed consent overlooks the importance of school nurses' mundane work around the vaccination. The school nurses' ways of 'responding to' each child in the moment of the needle stick suggest that, in practice, there will always be a component of unpredictability, and that the school nurses' mundane ways of handling this unpredictability is a key part of their practice. Instead of attempting to remove this unpredictability through better information, this requires an appreciation of a care that 'stays open' towards what might be good to do in specific situations. By highlighting the 'local solutions' (Mol et al., 2010) school nurses use in the particular meeting with each child, we make visible a care that requires school nurses to be able to respond to children whose actions are not fully possible to anticipate. Indeed, we suggest that this openness towards *how to* care is already a key part of how school nurses do their mundane work around the needle stick.

This also fosters insights into matters of HPV vaccination policy. When the vaccination is pictured as a rapid event with informed and prepared children, the school nurses' mundane work of 'getting a sense' of what they need during the often very short, yet crucial, situation of the needle stick, becomes invisible. This 'invisible work' (Star & Strauss, 1999) of responding well to the children is, then, not considered in policy discussions about the vaccination, and in discussions about time-frames for the vaccination. The present article shows how school nurses tinker with ways of caring well, which may serve as an important basis for defending 'attentive' care in policy spaces 'where it is currently at risk of being squeezed' (Mol et al., 2010, pp. 10–11). Therefore, and based on our findings, we argue that it matters politically whether HPV vaccination is conceptualised as an abstract matter of 'two minutes per child' or as a matter of adaptive tinkering with vaccines, children and routines in a concrete school nursing practice that is continuously made and remade.

AUTHOR CONTRIBUTIONS

Lisa Lindén: Conceptualization (lead); Data curation (equal); Funding acquisition (lead); Investigation (equal); Methodology (equal); Project administration (lead); Writing – original draft (lead); Writing – review & editing (lead). **Ylva Odenbring**: Conceptualization (supporting); Data curation (equal); Funding acquisition (supporting); Investigation (equal); Methodology (equal); Project administration (supporting); Writing – original draft (supporting); Writing – review & editing (supporting).

ACKNOWLEDGEMENTS

We would like to express our gratitude to the school nurses we have interviewed, for giving of their time and for sharing their insights and experiences with us. Moreover, we would like to thank two anonymous reviewers for constructive and insightful comments and suggestions, which have significantly improved this article. Finally, we would like to thank Helena Cleeve, Doris Lydahl and Anna Mann for very helpful comments on previous versions of this article.

DATA AVAILABILITY STATEMENT

Research data are not shared because of ethical restrictions.

ORCID

Lisa Lindén https://orcid.org/0000-0001-9816-7164
Ylva Odenbring https://orcid.org/0000-0002-8221-8980

ENDNOTES

[1] HPV vaccination has been part of the national vaccination programme for children in Sweden since 2012 (Public Health Agency of Sweden, 2022). This programme includes vaccinations against rotavirus infection, diphtheria, tetanus, whooping cough, polio, infections caused by Haemophilus influenzae type b, measles, mumps, rubella, serious diseases caused by pneumococcus and human papillomavirus. Infants and preschool children are offered vaccinations by the child health services. From the age of six, the vaccinations are offered by the student welfare team and under the management of the school nurse at the respective school. Each municipality has a 'chief' school nurse who informs the other nurses about guidelines, information to be provided to the children and their parents, and so on. All vaccinations are voluntary and offered free of charge. Most parents choose to have their children vaccinated.

[2] The inclusion of boys has rendered new challenges for school nurses concerning how to discuss HPV and sexual responsibility with the children. For instance, while the new policy opens up the possibility of a focus on diverse sexual identities, the school nurses' narratives tend to be heteronormative.

[3] Mol et al. (2010) use the notion of 'daily practice'. We use 'mundane practice', because the vaccination only happens a few times a semester.

[4] While beyond the scope of this article, some of the school nurses' accounts of the children were gendered. For example, Klara referred to the girls who were being vaccinated as sometimes being 'such drama queens'. Other school nurses asserted that the boys were 'calmer'. For instance, Linda said: 'The boys are maybe calmer when they are vaccinated. The girls can sometimes stress each other out in a way the boys don't'. We will analyse these matters within the realm of the larger project.

[5] This is one example of how the HPV vaccine was talked about as different compared to other childhood vaccines in schools. The school nurses also talked about how the concerned children were old enough to be more involved in the decision about whether they are to be vaccinated or not.

REFERENCES

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101.

Casper, M. J., & Carpenter, L. M. (2008). Sex, drugs, and politics: The HPV vaccine for cervical cancer. *Sociology of Health & Illness*, *30*(6), 886–899.

Charles, N. (2014). Injecting and rejecting, framing and failing: The HPV vaccine and the subjectification of citizens' identities. *Feminist Media Studies*, *14*(6), 1071–1089.

Gottvall, M., Tydén, T., Larsson, M., Stenhammar, C., & Höglund, A. T. (2015). Informed consent for HPV vaccination: A relational approach. *Health Care Analysis*, *23*(1), 50–62.

Haraway, D. J. (1997). *Modest_Witness@Second_Millennium. FemaleMan_Meets_OncoMouse: Feminism and technoscience*. Routledge.

Hilton, S., Hunt, K., Bedford, H., & Petticrew, M. (2011). School nurses' experiences of delivering the UK HPV vaccination programme in its first year. *BMC Infectious Diseases*, *11*, 226. https://doi.org/10.1186/1471-2334-11-226

Law, J. (1994). *Organizing modernity*. Blackwell Publishers.

Lindén, L. (2016). *Communicating care: The contradictions of HPV vaccination campaigns*. Arkiv.

Lindén, L., & Lydahl, D. (2021). Care in STS. *Nordic Journal of Science and Technology Studies*, 3–12. https://doi.org/10.5324/njsts.v9i1.4000

Lydahl, D., & Hansen Löfstrand, C. (2020). Doing good: Autonomy in the margins of welfare. *Sociology of Health & Illness*, *42*(4), 892–906.

Martin, A., Myers, N., & Viseu, A. (2015). The politics of care in technoscience. *Social Studies of Science*, *45*(5), 625–641.

Mattebo, M., Gottvall, M., & Grandahl, M. (2021). School nurses' perceptions and experiences of delivering a school-based intervention to improve primary prevention of human papillomavirus among adolescents – A focus group study following a randomized controlled trial. *The Journal of School Nursing*, 1–8. https://doi.org/10.1177/10598405211046174

Mishra, A., & Graham, J. E. (2012). Risk, choice and the 'girl vaccine': Unpacking human papillomavirus (HPV) immunisation. *Health, Risk & Society*, *14*(1), 57–69.

Mol, A. (2008). *The logic of care: Health and the problem of patient choice*. Routledge.

Mol, A., Moser, I., & Pols, J. (Eds.). (2010). *Care in practice: On tinkering in clinics, homes and farms*. transcript Verlag.

Pols, J. (2003). Enforcing patient rights or improving care? The interference of two modes of doing good in mental health care. *Sociology of Health & Illness*, *25*(4), 320–347.

Pols, J. (2015). Towards an empirical ethics in care: Relations with technologies in health care. *Medicine, Healthcare & Philosophy*, *18*(1), 81–90.

Public Health Agency of Sweden. (2022). Barnvaccinationsprogram – Allmänt program för barn. Retrieved February 23, 2022, from https://www.folkhalsomyndigheten.se/smittskydd-beredskap/vaccinationer/vaccinationsprogram/barnvaccinationsprogram/

Puig de la Bellacasa, M. (2017). *Matters of care: Speculative ethics in more than human worlds*. University of Minnesota Press.

Rockliffe, L., McBride, E., Heffernan, C., & Forster, A. S. (2020). Factors affecting delivery of the HPV vaccination: A focus group study with NHS school-aged vaccination teams in London. *The Journal of School Nursing*, *36*(2), 135–143.

Runngren, E., Eriksson, M., & Blomberg, K. (2020). Balancing between being proactive and neutral: School nurses' experiences of offering human papilloma virus vaccination to girls. *The Journal of School Nursing*, *38*(3), 270–278. https://doi.org/10.1177/1059840520933323

Schrader, A. (2015). Abyssal intimacies and temporalities of care: How (not) to care about deformed leaf bugs in the aftermath of Chernobyl. *Social Studies of Science*, *45*(5), 665–690.

Star, S. L., & Strauss, A. (1999). Layers of silence, arenas of voice: The ecology of visible and invisible work. *Computer Supported Cooperative Work: The Journal of Collaborative Computing*, *8*, 9–30. https://doi.org/10.1023/a:1008651105359

Verkerk, M. A. (2001). The care perspective and autonomy. *Medicine, Healthcare & Philosophy*, *4*(3), 289–294.

Virtanen, M. J., & Salmivaara, S. (2021). From knowledge to a gendered event and trustful ties: HPV vaccine framings of eligible Finnish girls and school nurses. *Sociology of Health & Illness*, *43*, 1221–1236. https://doi.org/10.1111/1467-9566.13287

How to cite this article: Lindén, L., & Odenbring, Y. (2022). The needle pricking and two modes of 'doing good' in the Swedish school-based human papillomavirus vaccination programme. *Sociology of Health & Illness*, *44*(8), 1344–1360. https://doi.org/10.1111/1467-9566.13515