Tailoring Immunization Programmes (TIP): Observation and interview study with health workers in Serbia

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Executive summary

Background

This report presents the findings of qualitative study conducted in Serbia as part of a Tailoring Immunization Programmes (TIP) project. TIP was a collaboration between the WHO Regional Office for Europe, the WHO Country Office in Serbia and the Institute of Public Health of Serbia "Dr Milan Jovanovic Batut". The research focused on health workers' experience, practices and skills in communicating with parents of various positions to childhood vaccination (accepting, indecisive, delaying, refusing). The aims were to explore the process of vaccination communication and identify the support health workers may need in facilitating effective interaction with parents on the subject of vaccines and vaccination.

Methods

The study employed two methodological approaches. In-depth interviews with 14 health workers were supplemented and qualified by observations of 40 consultations, using thematic analysis. Findings were organised by the Capability-Opportunity-Motivation-Behaviour (COM-B) framework that ensures that both individual and context factors are considered. Study sites were two community health centres in two Belgrade municipalities where a significant drop in childhood vaccination rates had occurred.

Key findings and implications

There was a positive context for vaccination with health workers feeling generally confident in their knowledge (capability), highly motivated to recommend and administer vaccinations (motivation), and well supported by their colleagues (social opportunity). Some physical opportunity barriers existed – a perceived lack of legal protection for AEFIs and workload for nurses in identifying children for vaccination and reminding parents. Providing support for health workers for AEFIs and communication this support requires written procedures for their protection and engagement of professional organizations. Using IT systems to identify children due to vaccination and to send SMS messages to parents would free up nurses' time.

Communication mainly took place between paediatricians and parents, while nurses focused on administering vaccines. These doctors were confident in their skills to communicate and address concerns of accepting and indecisive parents, successfully applying specific strategies (capability). Their challenges mostly related to discussing vaccination with delaying and refusing parents, captured in three themes.

- Health workers' behaviour in consultations was sometimes affected by refusing parents *demonstrating (dis) trust* in their recommendations about vaccination.

- When interacting with delaying and refusing parents, doctors sometimes agreed to delay vaccination to maintain relationships confident that most parents would vaccinate in due course, thus *keeping the door open.*

- Some refusing parents *asked questions of a non-medical nature*, grounded in a socio-political agenda regarding vaccines or vaccination. Such questions exceeded the domain of health workers' expertise, which affected the communication between them.

Technical (to address knowledge gaps) and communication skills training are needed and requested by health workers. This could be extended to nurses to empower them to engage in conversations with parents.

Other TIP project work packages have developed information for different groups of parents and a continuing medical education programme for doctors.

Conclusion

The study revealed that health workers in Serbia require additional skills and strategies to respond to parents who refuse and wish to delay vaccination, to secure timely vaccination. These insights will now inform tailored strategies to improve vaccine acceptance and demand in Serbia.

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1. Introduction

Serbia has a population of approximately 7 million with 1.7 million living in the capital city, Belgrade.[1] It has a long history of mandatory vaccination with typically good vaccination coverage for almost two centuries.[2] However, in recent years immunization rates became suboptimal and fluctuating, most significantly for the measles-mumps-rubella (MMR) vaccination.

Until 2011, MMR vaccination coverage was above 95%, which is the target for eliminating measles and rubella in the European Vaccine Action Plan 2015–2020.[3] Between 2011 and 2016 MMR coverage declined from 90% to 81%, with particularly low coverage reported in Belgrade (65.2%).[2] By 2017 a decline in MMR vaccination uptake resulted in coverage of slightly more than 60% in the two largest Serbian cities (Belgrade and Nis) with almost half of children eligible for this vaccine, needing to be immunized.[4] Delays in vaccination as compared with the national recommendations were also a considerable challenge, again particularly for the MMR vaccine.[4] From October 2017 until August 2019, there was a measles outbreak with almost 6000 cases and 15 deaths recorded.[4] The majority (91%) of cases were unvaccinated, and age groups most affected were under 5 years and over 30 years.[4] Serbian health authorities responded by tightening the legislation, but failed to sufficiently solve the problem through engaging in active communication with parents and the general public.

Against this background, the consensus was that urgent action was needed to halt the decline in coverage and to prevent further spread of measles. In April 2017, the Institute of Public Heath of Serbia in April 2017 initiated a Tailoring Immunization Programmes (TIP) project[5,6] supported by the World Health Organization (WHO) Regional Office for Europe with the aim of identifying the factors related to sub-optimal vaccination uptake in order to inform a long-term strategy to increase vaccination uptake and avoid future diseases outbreaks.

1.1 Tailoring Immunization Programmes (TIP)

Drawing on proven behavioural and community insights approaches and social science research techniques, the WHO TIP approach[2,3] offers a structured process through which to 1) define and describe sub-optimally vaccinated population groups and prioritize between them; 2) diagnose barriers and drivers to vaccination through social science research to obtain behavioural and community insight, engaging with affected communities and broad stakeholder engagement; and 3) develop effective and cost-effective strategies to increase vaccination coverage.

This approach applies a broad perspective on barriers and drivers to vaccination, drawing upon an adapted version of the COM-B model[6,7] as a framework for changing behaviour (see Figure 1). This model identifies the inter-linked

factors of capability, physical opportunity, social opportunity, and motivation as influencing vaccination behaviours.

The specific objectives of the TIP project in Serbia were to:

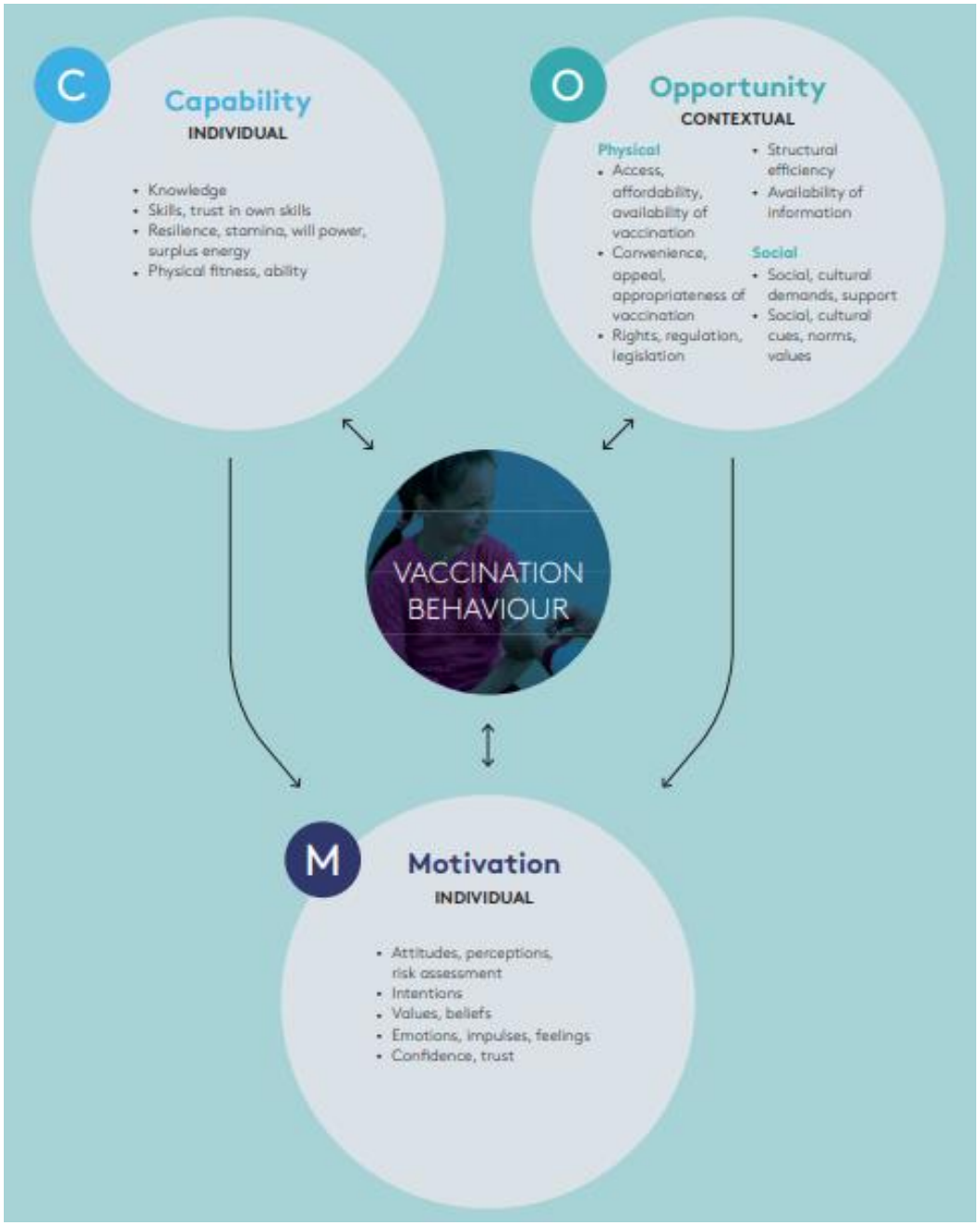
1. Identify, describe, segment and prioritize between the population groups who are sub-optimally vaccinated in Serbia
2. Gain insight into the capability, physical opportunity, social opportunity and motivation barriers and drivers to vaccination among priority target groups, through social science research and broad stakeholder engagement
3. Use this insight to develop tailored, effective and cost-effective strategies to increase vaccination uptake

The first step was a situational analysis from which it was decided that the target population of the TIP would be urban parents with the health worker-parent encounter as the critical focus. An action research project – to adapt, implement and evaluate an existing vaccination communication package[8] for health workers – was developed. Within this project were three work packages (WP):

- WP 1: Information for parents
- WP2: Vaccination related communication skills training of paediatricians and nurses
- WP3: Continuing Medical Education (CME) with paediatricians (to reach those who are hesitant)

This report presents a qualitative study (interviews and observations) with health workers (paediatricians and nurses) conducted within WP2 which focused on their communication with parents of various positions to vaccination (accepting, indecisive, delaying, refusing). The findings were to inform the adaption of an existing vaccination communication package[8] to the Serbian context. The study has been published in an international journal.[9]

Figure 1. The adapted COM-B model – a framework for understanding vaccination behaviours[5]



Source: World Health Organization, Tailoring Immunization Programmes, 2019, available at: https://apps.who.int/iris/bitstream/handle/10665/329448/9789289054492-eng.pdf.

2. Study aims

1. Explore the process of vaccination communication between health workers and parents
2. Identify the barriers and drivers to effective vaccination communication between health workers and parents
3. To explore if, and how, health worker vaccination communication varies for parents with different positions to vaccination (accepting, indecisive, delaying, refusing)

3. Methods

This qualitative study employed two methodological approaches: first in-depth interviews with paediatricians and nurses, followed by observations of paediatricians and nurses in their vaccination consultations with parents. Whilst parents can discuss vaccination with their child's paediatrician or nurse during any consultation, these conversations commonly occur during the vaccination appointment. The interviews sought to explore health workers' experiences of communicating about vaccination with parents, and their views on the barriers and drivers to effective communication. We used observations to supplement and qualify interview findings, basing them on theoretical insights that non-verbal communication, like body language, facial expression or tone of voice, significantly complement verbal communication elements in face-to-face interactions.[10]

Ethical approval was secured from the Ethics Committee of the Institute for Public Health of Serbia "Dr Milan Jovanović Batut". Interview participants were informed about the research by means of participant information sheets and provided written consent before the interview commenced. Observation participants gave their verbal consent. All visiting parents verbally consented to observations upon being verbally informed about the research.

3.1 Setting

Interviews and observations were carried out in two Community Health Centres (CHC) in Belgrade, the capital of Serbia (labelled as CHC 1 and 2). CHC is a primary health care facility that usually covers the territory of one municipality or town. Belgrade is divided into 17 municipalities, each with one CHC. In this study, the municipalities were selected as areas where a significant drop in childhood vaccination rates had been detected in previous years.

3.2 Participants and recruitment

Fourteen in-depth, face-to-face, individual interviews were conducted from June until August 2018 – nine with paediatricians and five with nurses. The heads of paediatric wards in both CHCs circulated study information to

health workers and were asked to invite a mix of health workers based on their presumed different approaches in implementing vaccination and communication with parents. All the contacted health workers agreed to participate. The interviews took place in the CHCs, usually before or after a participant's shift. Due to the large size of the area covered by CHC 1, the interviews were conducted at four different sites with six paediatricians and four nurses. In the smaller CHC 2, three paediatricians and one nurse were interviewed at one site.

Observations of consultations between health workers and parents were carried out in July 2018. Participants in the observations also participated in interviews and were a convenience sample available on the day that the researcher attended the facility. Three teams (each consisting of one paediatrician and one nurse) were observed during their eight-hour work shift. As paediatrician and nurse perform their work simultaneously in separate rooms, it was impractical to observe their interaction with parents at the same time. Therefore, the observations were mostly carried out in paediatrician's room where the main consultations normally took place. Two shifts were observed in CHC 1 and one shift was observed in CHC 2. In total, 40 vaccination consultations were observed, each lasting approximately 15 minutes.

All participants were women with extensive work experience. This gender imbalance reflects health workers in Serbia where the vast majority (almost 90%) of both paediatricians and nurses are women.[11] The paediatricians had over 30 years of work experience, with the exception of one paediatrician with 15 years of experience. The work experience of nurses ranged from 19 to 36 years. This also reflects the age structure of paediatric health workers in Serbia where the average age of paediatricians is 52[11] and approximately 30% of paediatricians are older than 55 years of age.[12]

3.3 Data collection

The interviews were conducted using a topic guide that was pilot tested with one paediatrician and one nurse. It particularly focused on health workers' experiences, practices and behaviours related to questions and concerns that parents raised in vaccination consultations (see Appendix 1). The interviews were audio recorded and lasted between one hour and one hour and a half.

Field notes were made during the observations using a template with pre-determined topics to record in detail the communication between health workers and parents. The following aspects were documented:

- Time when parents entered consultation room and when they left (to determine how long consultations normally lasted)

- Number of visits
- Who brought a child (mother, father, or both)
- What visits to paediatricians consisted of (conversation – what about, examination – what kind).
- If both parents were present, who communicated more with paediatrician
- How parent(s) acted during the visit (their questions, concerns, doubts)
- Paediatrician's communication with parents (tone of voice, patience, approach to parents, information given to parents)
- How the paediatrician acted towards children (talked to them, played with them etc.)
- Relation between paediatrician and nurse
- Communication between parents and nurses

An additional tool modified from the Sharing Knowledge of Immunization (SKAI) approach[13] was used to document parents' questions and heath workers' approach to communicating with parents, e.g., initiation and guiding of conversations (see Appendix 2).

3.4 Data analysis

Interview recordings were transcribed verbatim, and half were purposively selected for translation into English, to include a mix of paediatricians and nurses, across both CHCs. A coding framework was developed based on the topic guide and the four COM factors (see Figure 1). It was piloted and refined using the seven English transcripts. The data were then coded in Serbian. The next step was to identify commonly recurring themes across data, organised by the COM factors. The focus was the process of vaccination communication between health workers and parents, and barriers and drivers to effective vaccination communication.

4. Findings

The findings for the observations and interviews now follow.

4.1 Observations of vaccination consultations

We first describe the observed paediatrican-nurse relationships, followed by the common features of vaccination consultations observed for all three teams. The approach of each consultation team is then presented. Of note, the paediatricians' approach in teams 1 and 2 (both from CHC 1) was fairly consistent. The paediatrician's approach in team 3 (from CHC 2) was somewhat different.

Paediatrician-nurse relationship

Communication between paediatricians and nurses appeared friendly and close, and their teamwork was highly valued. Two paediatricians emphasized how important a good team nurse is, "who knows her job", as one put it. Thus, a situation was observed when a nurse reminded a paediatrician that there was varicella in the family of a child scheduled for examination and that vaccination needed to be delayed. In another team, the nurse corrected the paediatrician who accidently documented that two children had received Pentaxim vaccine instead of Hep. B vaccine. Commenting on this, the paediatrician pointed to it as an excellent example of how important the role of nurse was in vaccination process. Beside measuring children, preparing them for paediatric examination, applying vaccines and keeping records of vaccination, nurses also acted as a source of information for paediatricians – they informed and reminded paediatricians of any important aspect regarding visiting parents and their children.

Common features of vaccination consultations

The observations were conducted during the summer, i.e. at the time when there were usually not many parent visits due to out-of-town vacations. Each team had between 16 and 20 visits, lasting around 15 minutes, excluding nurse/vaccine administration time. However, one paediatrician emphasized that in other seasons, especially in autumn, there could be up to 40 visits in a shift and that is when the team's work would usually become challenging.

A paediatrician-parent encounter would typically start with detailed questions about the infant's diet, hygiene maintaining and stimulation through playing with the child. Usually the paediatrician asked questions about these aspects (diet was the primary focus) and gave advice on them while performing a physical examination (listening to lungs and heart, checking for nappy rash, examining the child's throat, basic neurologic examination). This took up most of the time in the consultations. Afterwards the paediatrician would inform parents about the vaccines

that their infant was supposed to receive on that day and send them back to nurse for vaccination. Paediatricians mostly assumed an active role in these consultations (they were the ones who initiated and guided conversations with an educational approach that implied giving instructions on how to maintain hygiene, choose and prepare food or stimulate child's psychological and physical development through playing). Parents were more passive (they would answer paediatrician's questions and were encouraged to ask questions if they needed clarifications, more information or had any other doubts). Usually both parents would attend the consultation, or one parent would come with a relative (a mother or a sister). This may have been for practical reasons as infants were often restless or agitated which made hard for one parent to remain focused on consultations and look after a child at the same time. Such restless infants also made consultations and examination hard and challenging. In CHC 1 mothers were the ones who mostly communicated with paediatricians, while fathers were more concentrated on the child. In CHC 2 both mothers and fathers were equally engaged in communication.

The three observed paediatricians had similar approaches to infants: while performing examinations they would smile to them, cuddle and play with them, call them by their names or nicknames and never showed impatience with those who cried and were hard to examine. Parents normally smiled in response to this, seemed relaxed during consultations and freely asked questions according to their interests (mostly about diet, a child's progress or some medical condition). They listened carefully to what paediatricians were saying and explaining. Paediatricians and parents often joked together, engaged in brief chat and no tensions were observed.

Nurses' communication with parents could be described as passive in comparison to paediatricians. It appeared to mostly depend on the parents – if they asked questions then nurses would engage in communication. One observed nurse would mainly instruct parents on how to hold a lying infant so she could apply the vaccines. The other two observed nurses were more engaged in communication with parents. In one case, the nurse took over communication about vaccination when the paediatrician left the room. She advised parents on how to organize their next visit so they wouldn't miss the next vaccine, reminded parents of revaccination, instructed them to apply a cold compress at the place of application, and informed them on how many vaccines a child was receiving at that time.

The third observed nurse mainly played the role of a "vaccination facilitator", with emphasis on a psychological aspect. Again, parents didn't ask her any questions about vaccines, but she would chat and joke with them when applying vaccines, show affection by calling younger parents "my children", use baby-talk sometimes in communication etc. She would tell parents where she would apply a vaccine and instruct them to take the baby into their arms immediately after application for more effective comfort.

The observations showed that nurses mainly gave technical instructions regarding vaccination after parents had already consented to it.

Specific observations of each team

Observation Team 1, CHC 1

After examination and detailed consultations about other issues, the paediatrician would initiate conversation about vaccination as the final important part of routine consultations. The following information about vaccines and vaccination would be provided to parents:

1. Which vaccines their child was supposed to receive that day
2. What those vaccines were for
3. Spot where the vaccines would be applied
4. In how many doses they come
5. Which vaccines come next
6. Vaccine side effects (fever and swelling at the place of application would be noted as the only unwanted reactions and parents would be advised on what to do in those cases). Parents would be encouraged to come back if they noticed some other reaction.

The paediatrician remarked that her communication with parents about vaccines depended on their interest – if they asked additional questions she would answer, otherwise she would only provide the aforementioned information.

No attending parent refused vaccines or raised any considerable doubts about them. Their main questions concerned fever as a reaction to vaccines and what to do about it, or how to apply cold compress in case of swelling. Only one vaccination was delayed which was the paediatrician's decision because the child had been sick and blood test results were needed. It seemed that parents were generally accepting of vaccines, they would listen to what the paediatrician had to say about that, nod and then finish the consultations by going back to nurse for vaccination. Some parents would let the paediatrician finish the talk about vaccines and then return to some other issue that they were worried about or wanted to know more about, completely unrelated to vaccines and it typically concerned diet.

Observation team 2, CHC 1

The paediatrician would initiate conversation by providing the following information:

1. Which vaccines a child had previously received

2. Which vaccines a child was receiving at that time
3. Which vaccines a child would receive in future

She would always ask parents if there had been any adverse reactions to prior vaccines. She didn't talk about possible vaccine side effects if unsolicited. Only one child was scheduled for MMR vaccine, and the paediatrician told the mother that some reactions were possible, like fever or rash, but that it was the most important that the child was healthy at the time of receiving vaccine. The parent accepted this without any objections. Parents mostly wanted to know what they could expect after vaccination, with fever as their main interest and how to act in that case, but no parent seemed significantly worried about it. Again, none of the parents refused, questioned or raised any particular doubts about vaccination during the observation.

Observation team 3, CHC 2

The third paediatrician had different approach in communication about vaccination with parents. She would initiate conversation about vaccines by asking parents: "Are we going to have a vaccine?", or "What have you decided about vaccines?" She also told parents whose child was scheduled for Hep. B vaccine that they could wait for another month if they didn't want it at that moment. These parents decided to leave the decision to the paediatrician, and the child was vaccinated that day. This paediatrician provided information on what the scheduled vaccine was for, and which would be the next scheduled vaccine. The main parental inquiry was about fever as a side effect, in which case the paediatrician would advise them to buy paracetamol. Most parents accepted vaccination, but there were two cases of delaying and one case when a child received a vaccine after some delay:

1. A mother brought a five-month infant who hadn't received any vaccines up to that time. She delayed vaccination again, which the paediatrician accepted without objection and remarked that it had to be noted in the infant's records. The mother asked if that was necessary to which the paediatrician said that it had to be done. There were no tensions in communication between them. The paediatrician asked the mother until when she would delay vaccination and her answer was until the infant turned nine months.
2. Another mother accepted Hep. B vaccine, but she wanted to delay MMR as long as possible, which the paediatrician accepted. This mother was very worried about her child who was seventeen months old and still didn't walk for unknown reasons.
3. One child got vaccinated after a period of delay and received the second Pentaxim dose. According to the paediatrician, the child was vaccinated for the first time after turning one year and six months, which was exclusively the parents' decision. She also remarked that the child would receive all vaccines before kindergarten without any problems or stress. By this she meant without stressing parents or herself by forcing parents to vaccinate if they were not ready.

Other visiting parents accepted vaccination without any questions and the paediatrician didn't initiate talking about vaccines or vaccination.

4.2 Interviews with health workers

The interview findings are organized by the COM factors (capability, physical and social opportunity and motivation)[3]. For each COM factor a headline statement on the key barriers and drivers to effective vaccination communication is presented followed by a detailed description. Where there were differences in opinion between paediatricians and nurses these are highlighted; otherwise they were not evident in the data. The final section focuses on health workers' views on communication skills training and on information for parents.

Capability

Health workers were generally confident in their knowledge of vaccines and vaccination attributing this to their many years of experience. Some were uncertain about the specifics of contraindications.

They were also confident in having vaccination conversations with accepting and indecisive (hesitant) parents. They found communication with delaying and refusing parents more challenging, sometimes agreeing to delay vaccination to maintain relationships. Parents' distrust in their recommendations negatively impacted on conversations, whilst questions from refusing parents grounded in a socio-political agenda regarding vaccines or vaccination sometimes exceeded their expertise.

Paediatricians sometimes postponed vaccination when children have minor acute infections despite knowing these are false contraindications.

Knowledge of vaccines and vaccination

The interviewed paediatricians and nurses mostly assessed their own level of knowledge on vaccines and vaccination as very satisfactory. This could be illustrated by the following quote:

As I usually say, whoever wants to know something about vaccines should ask paediatricians.
Paediatrician 1, CHC 1

The responses of some paediatricians and nurses suggested that such confidence of health workers into their own knowledge could be based on many years of work and experience in paediatric service:

I think that I am informed quite enough. I've been doing that for a long time, and that whole time I have been included in this, in this whole vaccination cycle. When it comes to vaccines, I think I know enough.
Paediatrician 5, CHC 1

You know what, I have been working for so long now and I know about that-- [about vaccines and vaccination].
Nurse 4, CHC 1

In other words, long practice and associated accumulated experience in that process could be one of the main pillars that health workers' confidence rested on when it came to their knowledge regarding vaccines and vaccination.

Skills in communicating with parents

The main communication regarding vaccines and vaccination takes place between paediatricians and parents. There are different types of parents that health workers may come across, classified according to their behaviour in the process of vaccination:

1. Parents accepting vaccination
2. Indecisive (hesitant) parents
3. Parents delaying vaccination
4. Parents rejecting vaccination

Parents accepting vaccination

This category is for parents who agree to have their children vaccinated without hesitation, doubts, and distrust towards the chosen physician, vaccines or the whole vaccination system. Most (38/40) of the observed consultations were with accepting parents. Health workers described communication with such parents as highly satisfactory, that often occurred even without additional questions:

I start talking, tell them what the child is about to receive and they say, "No, doctor, we trust you. Apply whatever you say is necessary." Paediatrician 2, CHC 1

In cases when accepting parents asked questions, their inquiries fell within health workers' expertise, who hence provided answers without any problems. Examples of such questions were: what illness a vaccine protects against; which reactions could be expected and what to do should they occur; when a vaccine was due to be given and

how many times; what to do in situations when parents were for some reason prevented from coming for the scheduled vaccination; etc. Health workers said that their communication with these parents usually went smoothly. However, it emerged that parents' consent to vaccination without hesitation did not necessarily guarantee timely vaccination. Despite trusting and relying on paediatricians and the healthcare system, parents would sometimes forget their scheduled vaccination appointments:

Sometimes they are late with Pentaxim vaccine because they simply forget and somehow become lazy. And then when you warn them, they say, "We live far away", and "the child was ill." So I say, "Try and come as soon as possible, (s)he might get hurt, you'll be on vacation." So most of them come. Paediatrician 2, CHC 2

<u>Indecisive (hesitant) parents</u>

According to the health workers' experience, indecisive parents could be defined as those who have a dilemma whether to agree to the vaccination or not, and whose indecisiveness is based more on rumours circling in the public domain than on having a previously developed and clear position on vaccines. They believed that these parents tended to resolve their dilemmas by consulting health workers and asking for their opinion. As the rumours on vaccine safety were the main cause of indecisiveness for these parents, they usually didn't ask precise questions about vaccines, but mostly tried to establish whether there was some truth to those rumours:

So they mostly say: "That story, everything that is being said and written, for this reason I have to ask you about it", that's usually how it goes. I mean, their questions are: "I would like to hear your opinion. It is important for me to hear what you think about it." Everything is like, "I have heard this and watched that [on TV or the Internet]." And then when you ask them a concrete question: "And what exactly are the arguments, what does it mean that you have heard something somewhere and who is the one who came up with that story?", they don't have a concrete answer. "But where there's smoke, there's fire." I mean, it mostly comes down to that, they have nothing else to tell you. Nurse 1, CHC 1

Some say: "I have doubts whether to receive that vaccine or not, I'm not sure myself. You see all what is happening." Paediatrician 6, CHC 1

More specific dilemmas of indecisive parents concerned the questions whether to postpone vaccines, whether to do additional analyses, etc.:

Upstairs, at the Department, we had a mom who delayed vaccination, and she always asked me: "What do you think? I trust you." And "Should we do it now? Should we do blood tests first?". In principle I refer them to the physician, but I say there is no need, that she should relax and not think about that so much. That she simply has to believe there will be no problems and that the child should come and get vaccinated. That she should not worry because with every delay she is making a problem for herself and torturing herself in a way. They most often ask questions like is it safe, and what they can expect. Nurse 2, CHC 1

An important characteristic of indecisive parents was that despite the fear they openly showed, they still maintained confidence in health workers, who by talking to them tried to eliminate that fear. Health workers on those occasions tended to respond with empathy, showing understanding and encouragement. This trustful relationship between indecisive parents and health workers brought about specific practices in their mutual communication. One of those was using social instead of strictly medical arguments in favour of vaccination. An example of that was stressing the common identity of "being a parent" which, according to participants, had very positive effect on the acceptance of vaccination:

Then, they often ask me: "Did you give that to your child?" I say: "Yes, I did." That's the best argument. That has a positive effect. They say, "Ok then." Paediatrician 1, CHC 2

Well, a mother use to come upstairs. At the end of our conversation, she told me "If you say so, you who have been doing all those things, and you have vaccinated your own children-Then why do I have the problem with that?" She really said: "For me, those are the strongest arguments I have ever heard. If you have told me so, then there are no more dilemmas for me, I am really going to vaccinate my child now." Nurse 1, CHC 1

Another practice the paediatricians stated they use to help these parents make a positive decision on vaccination was providing concrete evidence of tested and confirmed quality and safety of vaccines in Serbia. Considering widely spread rumours about the quality of vaccines used in Serbia not being the same as in some developed countries, some paediatricians showed indecisive parents that the vaccine lot number was the same both in Serbia and abroad, which, in their experience, had positive effect:

For instance, we tell them this same lot of vaccine was applied to a child that lived in France. Then I show them that lot number in the records and I say, "Here, see, the French give that same vaccine to their children, and we give it to ours." In Germany a child was vaccinated against hepatitis with the vaccine from the same lot that we are using, if they say the vaccine is not good. We tell them that Torlak Institute has issued the certificate, that there

is an approval for use under specific serial number. So they can check everything. Parents check all those things now. The information is available to them on the Internet and they really check. Yes, yes, that helps them.
Paediatrician 3, CHC 1

Based on the responses and experience of health workers, parents who were showing indecisiveness often solved their dilemmas and agreed to vaccination after consultations. As the questions of these parents did not concern exclusively strict medical aspects of vaccination, health workers used other arguments of social and administrative nature to get their consent. On such occasions they not only used specific evidence, but also showed friendly rapport and behaviour towards these parents. Still, it should be noted that the used arguments were mainly convincing owing to the trust that these parents preserved towards the health workers and healthcare system in general.

Parents delaying vaccination

Two of the 40 observed consultations were with delaying parents The common opinion amongst health workers seems to be that parents delay vaccination because they are indecisive and insecure in this regard. Although indecisive parents, spoken about in the previous section, could also delay vaccination due to their insecurity, the responses of health workers showed they were also faced with those parents who were certain in their decision to delay vaccination. This distinction was important because it shaped the communication between health workers and these parents in a special way and pointed towards the necessity of somewhat different approach to that used for indecisive parents. Namely, the behaviour of delaying parents was not based on insecurity that might be overcome in the aforementioned ways, but rather on the goal those parents had, and that goal was for their child to be vaccinated as late as possible.

Accordingly, unlike indecisive parents who mostly did not show a developed clear position on vaccines and vaccination, delaying parents usually had an already formed opinion that children got vaccines too soon and that their body was not mature enough for vaccination. They did not reject vaccination, but they also did not want to adhere to the existing schedule of immunization.

They are trying to postpone by two months, by three months, until the child has started walking, then until it has started talking, and then until it has started to attend kindergarten. And then at one moment they come and say, "We can have the vaccines now." There are such parents too. "We are not in a hurry, it's not urgent."
Paediatrician 3, CHC 1

The following quote shows how widely spread and socially legitimated is the position according to which vaccination is not refused, but delayed until it is considered acceptable:

Then she said: "My daughter is not running away from vaccinating her baby, but, well, she studies Special Education and there are even professors at the faculty saying that a child needs to be vaccinated against the measles, but by no means at 12 months of age, but when it turns two, when the child starts to walk, talk and everything else." She, for example, taught by this experience and by what she had heard from her professors, decided to vaccinate her child at the age of two. Nurse 1, CHC 1

Parents whose goal was for their child to receive a particular vaccine as late as possible did not ask specific questions. They would mostly come asking for the vaccination to be postponed, and they also asked for additional analyses to establish whether the child was completely healthy, i.e. that (s)he had no allergies (which appeared to be a strategy for delaying vaccination). Health workers commented that the reasons for this can mostly be found in beliefs that vaccines might negatively affect the insufficiently developed psycho-motor development of children, or be the trigger for the occurrence of some illnesses that exist in family history if applied too early:

There are no particular questions. They come forward, "We would not like to vaccinate our child right now. We would like to wait a bit." Then they start saying that one grandmother suffered from some illness, the grandfather suffered from another, they come up with outrageous disease, which naturally have nothing to do with vaccines, but it is also not a problem to prolong the vaccination a little bit and finish everything by the time the child enters a collective. Paediatrician 1, CHC 2

According to the experience of health workers, the great majority of these parents questioned the MMR vaccine and agreed to it in the end, when they believed that their child was ready for it:

Just today I have had parents who rejected MMR vaccine, the baby is 13 months old, he still hasn't started walking, he doesn't talk. The child is completely--so far, he has had normal psychomotor development, he has received all vaccines due for the first year of life and they came for the systematic check-up done at 13 months of age, when it's time for the MMR vaccine. The child has absolutely no contraindications, neither allergic nor adverse reactions to the vaccines he previously received. The parents are fully cooperative, they do not reject vaccination, but they do not want the child to receive the vaccine today. They know everything very well, they are informed about the importance of vaccines, but they simply want the child to receive the vaccine in September, not today.
Paediatrician 3, CHC 1

The common reaction of paediatricians in such cases was to be responsive to the wishes of delaying parents to the extent they found acceptable, which could mean anything from a couple of weeks to a couple of months. Such practice was based on the opinion that it was more tactful to delay vaccination and talk to parents about it on several occasions, because this increased the chances that parents would agree to it in the end. Hence, delaying vaccination was the strategy that all the interviewed paediatricians said they used when they encountered parents for whom they assessed they might accept vaccination at some point. Pressuring parents and insisting on vaccination "here and now" was not considered a good approach by any of the health workers, while they found the delaying resulted in success in most cases. So, despite the rules compelling them to report such parents, paediatricians typically chose not to do that at once and preferred to get their consent by being persistent. Persistence was, therefore, the main characteristic of the practice paediatricians applied in communication with delaying parents. In their opinion, this was demanding work, but often with good results as most parents agreed to vaccination in the end.

We gave in under their [parents'] pressure, and we wait until (s)he is 15 months old, some of them [parents] wait for two years for no good reason. I don't know why they delay, but in principle they receive the vaccine. We stretch the timelines a bit, but at least we get them vaccinated. Paediatrician 5, CHC 1

All interviewed paediatricians at every next meeting with delaying parents would initiate the conversation on vaccination to check whether their positions had changed in the meantime. On those occasions some would simply ask parents whether their position changed, while most would also try to convince parents to agree to vaccination as they considered it their duty. Paediatricians would use different arguments in that respect – they would mostly stress possible complications of the illness or epidemiological situation (at the time of measles outbreak); point out that parents' reasons for delaying vaccination were not justified; explain why vaccination was necessary in general; warn about legal obligations and stress parents' personal responsibility, i.e. that by not vaccinating they exposed to danger not just their own children, but other children as well:

"But, think a bit. Do you know how many children have died so far? Do you know how severe was the illness of those children? If you don't know, do you want me to tell you? And how you die from those illnesses and what it means to develop pneumonia because of measles. Think a bit about those things and then come. See me in two weeks." And at the same time, you inform them about the legal regulations should they refuse.
Paediatrician 6, CHC 1

Beside all this, some paediatricians would ask the parents to sign a waiver if they, in paediatrician's judgment, delayed vaccination without foundation. They would also inform the parents they were going to be reported should they not come to the next appointment.

I saw one dad yesterday and told him, "All right, in September." The child is about to turn two, but they keep avoiding vaccination. He has already signed once that they are delaying and he comes now. I say, "Ok, let's give the vaccine now. Do you see what the epidemiological situation is like? You see that this is a big epidemic, your child will get infected, and you won't even know where the child got infected." And he agrees with everything. "But can we delay it a bit more?" I say: "Fine. Here, I'll be on vacation in July, you'll be on vacation in August. After August, when you return, I'll be waiting for you in September, if you don't show up, I'll have to report you." He signed again that he wants to delay vaccination, he didn't make any problems. He said he didn't want to do it until the child started to speak. Paediatrician 2, CHC 1

It could be said that the arguments the paediatricians used in conversations with these parents mostly belonged to the sphere of reminding parents of their responsibility and warning them about the consequences of getting infected or about paying the fine. The success of such communication varied in paediatricians' experience – with some parents these arguments produced results, while others kept delaying vaccination. Despite the often-used strategy of reminding parents of the legal implications of non-vaccination, some paediatricians worried that this might undermine their relationship with parents:

Laws should not be mentioned, because whenever something is mandatory it creates resistance and we lose communication. When I respect the law and they don't, there is no trust between us, that bridge between us and the suspicious parents is destroyed. Paediatrician 3, CHC 1

In this research, it was noted that paediatricians didn't use arguments to address the main reason for vaccination delay, i.e. the belief that vaccines were applied too early in child's life. In other words, none of the interviewed paediatricians mentioned that they talked to parents about why the vaccines were applied exactly at a specific age, i.e. what were the reasons for that.

The paediatricians assessed the communication with some of these parents as extremely arduous and tiring because of repetitive conversations and constant recommending vaccination. The situation in which problems might particularly appear between health workers and delaying parents was when parents by far exceed the period during which the paediatricians were willing to wait for immunization. According to the answers provided

by health workers, in such situations parents turned to manipulation to prolong the receiving of vaccines as long as possible, stating for instance the child was ill as the reason for not appearing for the scheduled appointment. This was frustrating for paediatricians, as they knew whether parents are telling the truth from their records.

"Why did you miss this revaccination, what happened?" Then they say, "He was ill, we travelled." "But you're a year late!" Ah, I am rigorous in such cases -- those are the patients that you see all the time, you know whether the child was ill or not and whether a parent is avoiding vaccine or not. Paediatrician 4, CHC 1

One paediatrician stood out as an example of a different approach as she accepted the delaying of vaccination in agreement with parents and did not practice insisting on vaccination on every occasion that arises during appointments:

At the very beginning, at first check-up, I make an agreement with parents, I assess what type of parents they are, whether they want to or not to vaccinate the child immediately and we slowly make a deal. Trust me, this is a great success. When it comes to my patients, I can say that by the time they start attending kindergarten 80% of them are vaccinated. By the time they start kindergarten, that means by the age of a year and a bit more. Maybe not by the 6th or 7th month like with other doctors, but by the age of a year and a bit over it they are [vaccinated] and they can freely join kindergarten. Healthy as an ox, nothing wrong with them. Paediatrician 1, CHC 2

This paediatrician assessed her communication with such parents as very good, unlike other health workers who said that their communication could be improved. The practice of delaying vaccination brought about many challenges that negatively affected great part of health workers. Fatigue and frustrations that such conversations caused in some cases, point toward the need of health workers to be provided support with developing more effective interaction with delaying parents.

We also have the possibility to do some of those tests they can fill in to see at what level of development they are. They are most often worried about the psychological development where they cannot assess psycho-motoric development. We have those tests that allow them to see in which zone their child is once they fill them in. In the light or dark zone. This is something that UNICEF did--When they see their child is in the light zone, they are carefree. This means they need some sort of support too. Paediatrician 3, CHC 1

Parents rejecting vaccination

Parents rejecting vaccination can refuse all vaccines, or particular ones, of which, according to health workers, the most problematic is MMR vaccine and sometimes TT (tetanus toxoid) vaccine. None of the observed consultations were with this group of parents. These parents can be divided into the following subgroups: those who delay vaccination for so long that in the end they shift to the category of refusing parents; and those who at the very beginning make it clear they do not want vaccination. Knowing the difference between these groups is important because different behaviour of such parents to a great extent affects the interaction between them and health workers.

In the first case, the procedure is the same as with the parents who delay vaccination, but with a negative outcome i.e. the child is never vaccinated. Although it is usually believed that parents who reject vaccination from the beginning are unfaltering, based on the experience of some health workers one can notice that they can change their opinion in certain cases:

Last week I saw a mother who told me this: "I don't want you to give my child unregistered vaccines, on which it says their origin is unknown." I told her, "And where have you seen such a vaccine?" I tried to explain things to this mother, but she told me this, "No, I want the vaccine produced by Torlak." I told her, "But, madam, Torlak's vaccine does not exist." She saw on this immunization certificate that it read "unknown origin" next to the vaccine. When I showed her on the computer and when I showed her Dultavax, an explanation in our language, translation into Serbian, how-- "Who could have then put it in here in Serbian if--?" Then she backed away a bit and said, "Well, nobody has told me that before." The result was that the woman went and bought Dultavax. But when you explain things to parents, many problems disappear. Paediatrician 2, CHC 1

This example shows how important is the very reason for the refusal of vaccination that significantly determines whether a parent can be successfully directed towards vaccination by using adequate arguments. Similar to indecisive parents, providing evidence yielded a positive outcome in this case, as it was an argument that obviously weighed a lot in parental system of thinking. The change of attitude in refusing parents can also be the consequence of support they can get from health workers with different expertise:

We have had situations when [a child] had to receive [a vaccine], particularly tetanus, and they [parents] refused that. Then I referred them to doctor [epidemiologist] and he talked to them and did a great job and they received it in the end. It has never happened that they didn't get it. Paediatrician 1, CHC 2

This example shows that cooperation between paediatricians and epidemiologists can produce positive effect on refusing parents. Still, it should be noted that in both mentioned cases of the change of opinion, one of the preconditions for the change was the presence of a certain level of parents' trust, either in the healthcare system or in health workers.

Finally, the practice has shown that a significant change of behaviour among refusing parents can happen under the influence of external factors such as the measles outbreak that occurred in Serbia due to the low coverage with MMR vaccine. According to the testimonies of health workers, nothing could have challenged the position of some parents as much as the fear that occurred on that occasion, when many of those who had previously refused then rushed to receive this vaccine.

I have four parents who previously signed the refusal form, until the epidemic started and children in Belgrade started getting ill. All four of them came and got all vaccines. I have a patient who did not even want to listen to what I had to say but took his child's health card and said, "I'll see another doctor." But when we had the outbreak, he was the first to come to have his child vaccinated, and the child was already five years old and had not had MMR. Paediatrician 2, CHC 1

The second group of parents who firmly rejected vaccination from the very beginning mostly asked the following questions: who could guarantee the vaccine would not harm the child; why vaccines were imported and not produced by Torlak; why vaccination in Serbia was mandatory; what vaccines contained. One can notice that most of these questions were of non-medical nature, and that refusing parents tended to direct the conversation towards social and political issues. This meant the communication with them sometimes exceeded the domain of medical expertise and that health workers would lose the safe ground where they could talk about vaccines as professionals. If we add to that the distrust into healthcare system some of these parents showed, the manoeuvring space of health workers in communication with them did not exist. They described how the arguments they could offer as experts or based on social and administrative evidence had almost no effect on some of those parents. In persistent, but effortless attempts to convince them, paediatricians would present evidence in favour of vaccines, use the strategies of warning and threatening i.e. they reminded parents of their legal obligations and spoke openly to parents about reporting them, but also tried to use concrete examples that parents might relate to:

I have talked and mentioned an example of a child I treated. Having turned two, the child presented symptoms of autism, but had not had a single vaccine. I told her about that child and said, "Could you explain that to me then?". It did not help, nothing helped. Paediatrician 2, CHC 1

Every time the child is ill, I say, "If the child had the vaccine, I would not be considering now whether your child has one of the diseases (s)he has not been vaccinated against and we wouldn't have to do these analyses now." But this comes across an absolute wall because they have it clear in their heads that they don't want vaccines. Paediatrician 3, CHC 1

Interaction with these parents also depended on their disposition to have their refusal noted in their child's health record. Paediatricians paid particular attention to this as they considered that it liberated them from responsibility should the child contract the illness as parents took over the responsibility. For this reason, further communication with parents who agreed to record their decision would continue relatively simply and briefly, and paediatricians would keep checking on every new occasion whether they had changed their mind. Problems in communication occurred when parents refused for their decision to be recorded. In such cases difficult conversations sometimes happened between paediatricians and parents who believed this record was a legal trap, i.e. that the paediatrician could report them.

As an analogue to this practice, in communication with paediatricians, parents would ask them to sign a guarantee that vaccines would not harm their child. This is another impasse that parties reach in their interaction, since paediatricians are not able to make that concession. Still, such request could suggest that some of these parents also seek support to change their decision.

Just like with delaying parents, in this case as well, paediatricians would show great persistence by initiating conversations on every occasion. However, most of them said they simply could not reach refusing parents.

Each of us has had a situation where we could not establish communication with parents because they came with already formed positions and they do not want to listen to you. You can say whatever you want, it is all dismissed lightly. Paediatrician 1, CHC 1

An additional frustrating aspect in communication with refusing parents was their attitude and behaviour on such occasions. So, according to one paediatrician, they would even ask the questions on the vaccine ingredients more with intention to create polemics and oppose the doctor, rather than to be informed. The confirmation of this is

the so-called Request for Information, a printed document with large number of questions some parents bring to paediatricians, who cannot answer many of those questions because most of them do not belong to the sphere of medicine. In such cases paediatricians forwarded that Request to the Legal Department of their CHC.

They have their own sources of information. They do not even ask about our sources of information. When they ask the question, they ask it with the goal to undermine your response. I call that undermining questions. He wants to compromise vaccine or to provoke you. Paediatrician 4, CHC 1

According to health workers, some of these parents could be unpleasant, quarrelsome and hostile. In such cases some paediatricians would withdraw in front of them, while other would get involved in the vicious circle of polemics, conflict of opinions and trying to convince them without positive outcome.

Well those are the most willing to start a fight. Because you checkmate them with three questions. He asks you, and then you ask him. So, when he asks you, you answer. When you ask him, he doesn't have the answer to any question, if you understand me? In general, I try to be delicate, but sometimes you have to be unbelievably unpleasant if he is so short-tempered, insolent, thinks he knows everything. He wants to humiliate you, with that knowledge of his. When you have such parents, then you try to dissuade them, to tell them something they are going to remember. And that's effective. One of the effects is that they never come again, that happens too. Paediatrician 4, CHC 1

Judging by the statements of health workers, the communication with refusing parents could be quite hard, tiresome and tense for the paediatricians as the ones who primarily talk to them. Many of them stated they felt exhausted and frustrated after such conversations.

You know what, they simply bully you. Imagine talking to a woman who, first of all, does not have anything to do with medicine and she is badgering me. I end up looking as someone who puts children in enormous danger by giving them medications. And then they accuse us how--Those are horrible words. "How do you even treat children without performing tests? You prescribe medicines without testing them. How do you give injections?" I say, "A child is not allergic, until the allergy is proven." Without any-- no haste, no raised voice, but they eat your soul. Paediatrician 2, CHC 2

They often did not know how to behave in these situations and how to channel the conversation, whilst at the same time avoid conflict and protect themselves from stress they experienced on those occasions.

Knowledge and skills in managing contraindications

Some paediatricians spoke of being uncertain about some specifics of contraindications for vaccination, usually turning to experts for advice.

Let's say, a child which has a contraindication, I don't know, allergy to eggs so it does not get the MMR vaccine, and then if at some point the allergy test is repeated and the allergy to eggs does not exist anymore, should the vaccine be applied. Or if a child received two doses of some vaccine abroad. In our country, those two doses are sufficient, but over there, third doses are required. Should I proceed in line with their rulebook on vaccination or in line with ours? Paediatrician 3, CHC 1

All the paediatricians admitted sometimes postponing vaccination when a child is not completely healthy, for example with a minor acute infection. This practice did not seem to be a consequence of insufficient knowledge, but rather more about the self-determined rules and principles paediatricians adhere to when implementing immunization.

I always stress that epidemiologists have a paper in front of them, but we have a child in front of us and a parent next to him/her. Sometimes we consciously and unconsciously make concessions. I guarantee you that no paediatrician is going to vaccinate a child who is running a 37.5, 37.6 degrees fever. Nobody. You see fear and now, whether you want to or not, it is not easy to oppose that fear. I personally think, why traumatize a child and a parent if I can schedule a check-up in three days and do the immunization then. Paediatrician 2, CHC 1

I know what instructions say about temporary contraindications, but since I wouldn't vaccinate my child in such a situation of acute viral infection, regardless of her/him being febrile or not, I am neither going to vaccinate somebody else's child. So we arrange for them to come on another day. In ten days, once the illness passes.
Paediatrician 1, CHC 1

Although this practice deviates from expert recommendations and affects timely vaccination, the health workers saw is as important for the building of a relationship of trust between health workers and parents, showing the parents that they care.

The child is the priority. When (s)he comes to me, every child is the centre of the world, and the parent is somebody accompanying him/her. By being gentle and by approaching children in a certain way, I win their [parents'] trust and that is how things go. Paediatrician 2, CHC 2

I always try to have a rapport towards them which is, how can I explain this to you, as if I were their aunt. I try not to have strictly professional relations, but to have them see that I care about their child, that I am fond of that child. In that way, I try to become closer to them in a way, to make them trust me, that is simply what I am trying. Paediatrician 1, CHC 1

When health workers and parents would meet for the first time, the former stated that they tended to take an approach of gradually building trust with the latter, which was also reflected on vaccination.

So, day by day, month by month, contact by contact. Even when they come, they do not have absolute trust in me as a paediatrician. They see me for the first time and I cannot say right away, "Now, we are going to apply vaccine." They build up their trust with every visit, with every piece of advice; they form an opinion through various questions. They gain trust and then when I say, "Next time we'll apply that vaccine. We'll give that vaccine to the baby next time." They don't contradict me. Paediatrician 3, CHC 1

Physical opportunity

Health workers typically used and trusted official sources of vaccine-vaccination information. Colleagues were also trusted sources. Technical trainings and lectures were mostly appreciated by health workers with mixed views on their availability. No health workers had attended training on vaccination communications skills.

Paediatricans relied on providing verbal information to parents due to a perceived lack of official written information for parents. Nurses referred parents to the doctors for vaccination conversations.

Procedures in case of adverse reactions, contraindications and parental refusal were well understood and implemented by health workers. Using consultations with parents to monitor and prompt childhood vaccination was seen to work well for children up to 12 months. Searching records and reminder phone calls were burdensome for nurses.

Lack of time, lack of staff and overload with administrative duties were seen as barriers to efficient childhood vaccination delivery. Health workers felt uninformed and unsupported in terms of legal protection (in case of AEFIs).

Sources of information on vaccines and vaccination for health workers

All the health workers predominantly used certified data on vaccines and vaccination, and their answers pointed towards the great confidence they had in these officially approved sources of information. Paediatricians particularly stressed lectures, seminars, paediatric schools and events organized by official institutions, followed by professional literature (primarily a document called "Expert-methodological instructions", available in printed and electronic form) and other material provided by authorized institutions (City Institute of Public Health and Batut Institute), as well as instructions enclosed with the vaccines. These sources were recognized by most as the main valid ones because they were believed to guarantee accuracy and reliability of information.

Because that is something I base my work on. I can work only with official data; I read the studies published in relevant journals. So, I read what I find to be true and correct and reliable. Paediatrician 1, CHC 1

According to the responses of most paediatricians, lectures on vaccines or "live words" as one of them put it, were particularly appreciated as the source of information:

I visit all referent events dedicated to vaccines and immunization where our professors and paediatrics teachers speak. Paediatrician 3, CHC 2

First of all our trainings, I find them to be most authoritative. What the Faculty organizes. We have our sections, we also have various meetings. That's what is used. Paediatrician 2, CHC 2

Trainings, lectures and workshops were equally available both to paediatricians and nurses, but the responses suggested that they didn't take place often, as well as that not all employees from paediatric departments attended them. Both nurses and paediatricians requested for vaccination trainings to be organized more often.

I think we have so few trainings. That we should perhaps meet more often, and talk on this topic. One always hears something new in those meetings. Nurse 2, CHC 1

Well I think we don't have enough trainings. There has recently been one at the City Public Health Institute. There are always some educational activities organized by vaccines manufacturers. But that is never enough, we could always have more. Paediatrician 3, CHC 1

Another way of obtaining information that several paediatricians pointed to was personal communication, both with colleagues, and with other experts in the field of vaccination:

I always have people I can ask something, and they ask me. So we often communicate between ourselves, we read the procedures, call the City Public Health Institute, get information in different ways, what is important is that the information is of high-quality and coming from a valid place. Paediatrician 4, CHC 1

It seems that paediatricians were sharing their knowledge on vaccines and vaccination among themselves, and obtaining additional data by contacting other medical experts. Personal communication about vaccines was predominantly used as the source of information among nurses. Most of the nurses said that they received the information on vaccines by talking to their colleagues, especially with paediatricians: They stated a high degree of respect for and trust in the knowledge of paediatricians, who were also believed to be more educated about vaccines than themselves.

Well mostly...I don't read that much, if I receive some new professional literature, I read everything that comes in. I don't read foreign literature. And I talk with paediatricians, epidemiologists, colleagues at various events and meetings. Nurse 2, CHC 1

I trust most the doctor I work with. The most. Because we trust each other and I simply believe...If he thinks it is so, then that is it. I say, we are nurses. We are not physicians after all, but we trust the things physicians tell us. Nurse 3, CHC 1

Furthermore, one of the interviewed nurses pointed out that printed sources of information intended specifically for nurses are scarce:

What can I use? Mostly experience, mostly stories from practice and instructions enclosed with vaccines. That is mostly it, nothing special. I haven't seen an educational flayer for me in ages. I expect them from you, because I trust you [Batut Institute] the most. I haven't seen a single poster in ages. I haven't seen in ages a booklet adjusted for me, person with a high-school degree, nor anything, regardless of what that might be, to educate me a bit. Nurse, CHC 2

The internet as a source of information was mentioned by some paediatricians, but primarily as the way of acquiring insight into parental views on vaccines and vaccination. Only one paediatrician stated using the internet simultaneously with officially provided information and as an additional source of data:

What I get officially from the Ministry and I like to browse the Internet and look for information even from the sources that are not recommended, including antivaccination lobbies, and others. This is because I believe those people invested a lot of efforts to obtain certain data. Paediatrician 1, CHC 2

Finally three paediatricians stated they use foreign sources in order to get informed on vaccines, such as international congresses and medical journals. The availability of those sources is determined by the language barrier.

Education (trainings held so far)

According to the interviewed health workers, trainings with regard to vaccines and vaccination primarily took place within paediatric sections, lectures organized by authorized institutions (City Public Health Institute, Batut

Institute) or vaccines manufacturers. When it came to the quality of these trainings, the experiences and opinions among health workers were divided. The participants from CHC 2 mostly expressed the following opinion:

We attended some trainings that were no different from those intended for medical students. Paediatrician 2, CHC 2

In all this time, for the second decade now, there might have been two lectures where I have learnt something new. Whichever event dedicated to vaccination I attended, it turned out it was something elementary like the things I learnt in high school, that I already know all that. Nurse, CHC 2

Such answers pointed towards the desire for the revision and updating of some trainings on vaccines and vaccination that were offered to both paediatricians and nurses. On the other hand, all participants from CHC 1 evaluated positively the trainings they had attended:

The lecture on vaccination we had at the City Public Health Institute was very nice. But then only certain people attend those. They used to organize them on several occasions, both nurses and doctors went and that was very nice. Doctors [names] were the ones talking on vaccines and when to apply which vaccine. About many things I heard something new. Paediatrician 5, CHC 1

There was a fantastic lecture [a long time ago] at the City (TN-Public Health) Institute that lasted literally five, six hours. When we saw the topics, we were the first ones to go. And you know what we said to them? "Could you, please, organize more events like this one? We'll see to send our staff in any way possible." Our staff, I am talking about the Paediatric Department of our CHC. "The more you can organize the better, we shall send staff."
Nurse 1, CHC 1

The opposed answers on the quality of offered trainings were a possible indicator that health workers did not receive the same educations or of levelled quality, and pointed towards the need for their standardization. Only one paediatrician attended a training on communication with parents which was organized by a vaccine manufacturer:

I can't remember, I think Glaxo organized a workshop several years ago, it took place on Saturday. I was interested in it, so I attended it from 10 a.m. to 2 p.m. It was very, very good. I think it even helped me a lot. There was also a lecture, even workshops of the type: "I'm a patient, you are my chosen physician", I know that then we were all like

"Wow, is it possible that this is us?". Maybe it's been ten years since then. It helped me put myself in parents' shoes, because at this age we all have grown-up children, but it helped me return to the role of a parent of a small child. Paediatrician 2, CHC 1

When it came to similar trainings aimed at developing communication skills, all other participants answered they had never had such a training. As already stressed in the previous section, health workers highly appreciated trainings and lectures as the source of information on vaccines, but, at the same time, they believed those did not exist in sufficient extent, and that some needed updating and revision. Also, the periods between received trainings were quite long so some health workers had not attended any lectures nor workshops in several years. Hence, there was a desire for the updating of trainings, as well as the need for them to take place on more regular basis.

Views about information for parents

Health workers informed parents in two ways – by talking to them and by giving them printed information on vaccines. The consultations were used as the main way of informing parents, as paediatricians in most cases stated that it was an important part of their job to be the source of information on vaccines for parents.

I think a paediatrician's role is to explain to parents which vaccine would be administered and against which disease that vaccine protects.
Paediatrician 2, CHC 1

They also generally thought that parents were sufficiently informed by way of consultations since the talks usually took place on several occasions, i.e. at every check-up and every time a child was due to receive a certain vaccine:

During every check-up I talk about vaccination and I think that is enough. I also talk to children, when we have school-age children, then I gather them in groups. Five, six of them enter my office and then I firstly explain the vaccine, why it is applied, which vaccination is due. So they always know what they receive, why they receive vaccines. Paediatrician 5, CHC 1

Although the majority of participants believed they provided sufficient information on vaccines, some also stated that informing parents could be further improved:

Well no. We can always do more, especially for the vaccines that are applied simultaneously. As when two vaccines are applied at the same time, usually the attention is paid to one of them, and everything is said about it, and the second one - it is not talked about. Well, we don't have enough time. Paediatrician 3, CHC 1

This quote also points towards the challenge of using consultations as the primary way of informing parents about vaccines, namely a lack of time. Despite being performed on several occasions, consultations to a great extent depend on the time available to paediatricians. Hence, this factor can influence the amount of information provided to parents.

According to all participants, printed information for parents was not always available, as the authorized institutions did not supply them regularly. Thus, such material could not routinely compensate for the lack of time for conversation as primary way of informing. Bearing in mind the significance health workers attached to the source of information on vaccines, there was a wide belief among them that the material coming from official institutions was the only adequate source of information for parents too, and therefore they were not inclined to share any other material. All health workers gladly distributed printed information they found appropriate when they had such material, and the majority believed that parents were very interested in it:

Well, whenever we have printed information, we very gladly hand them out. However, I said this before, that I expect you to be more active as an institution [Batut Institute], I have to complain about not seeing a flyer in ages. They [parents] are very interested, I am certain they are interested as they listen to anything we have to say.
Nurse, CHC 2

The lack of printed material was sometimes compensated by giving parents the instructions enclosed with the vaccines. Although health workers acknowledged that these instructions are not appropriate source of information for parents as they are not written for them. Indeed, one participant made the following remark:

The parents won't read that. When we had that unfortunate outbreak of swine flu, and we got [vaccines], then a couple of parents said, "Can we read the instructions for the vaccines." And they take them and read only the beginning, no. But again, I think the most important thing is for the chosen physician to explain to a parent what vaccine is, what [the child] receives. I think that's more effective. Paediatrician 2, CHC 1

The interviewed nurses mostly stated that they usually referred parents to paediatricians for more information:

In principle, I refer them to physicians. Nothing else. I think it is best if they get more information they require from their paediatrician. I say it is not a problem for me to talk, but I simply do not know whether I can provide all information. Nurse 2, CHC 1

Just like they relied on paediatricians for their own information on vaccines, nurses believed that paediatricians should be the primary source of information for parents as well. Besides, it was evident that health workers themselves divided the knowledge on vaccines into different domains – the nurses' domain and the paediatricians' domain. Therefore, nurses believed that when it came to providing information to parents, they should not interfere in the domain of paediatrician's work, as they saw it as meddling in somebody else's job:

Well, I refer them to the doctor so they can ask about everything they don't understand. I think that is the right source of information. Now, I don't interfere with the doctor's part of work, if you understand me? As a nurse I can't talk, nor...you know-- You have children with contraindications for vaccination and all that. I can't meddle. I say some basic things I know and that I've been doing for years.
Nurse 4, CHC 1

Based on this, it could be said that nurses were confident only in providing parents with information from their sphere of knowledge and work. Beside applying vaccines, this sphere involved basic information about vaccines and technical instructions regarding vaccination (the place of application, possible usual side effects and how to proceed should they occur etc.).

Vaccination system and procedures

The vaccination is implemented in line with "Expert-methodological instructions" developed by the Serbian Public Health Institute. There are also prescribed procedures in case of adverse reactions, contraindications and parental refusal. Further, there are certain systems in place to invite parents and keeping records on vaccination, as well as keeping track of and reminding those patients that are lagging behind with vaccination.

Most health workers described having in their offices the printed procedures and "Expert-methodological instructions", and those documents are also always available to them in electronic form. They did not state any special difficulties concerning the procedures for the reporting of adverse reactions and contraindications. In both cases, reporting was performed by using the existing forms, the documentation was centralized and usually kept by one nurse who would forward it to the relevant institutions. The consensus was there were no deviations from both procedures as they concerned the aspects where precise records were of great importance.

Refusal procedure

Health workers viewed the procedure for parents refusing immunization as designed to function at the level of CHCs and introduced because of the increased number of parents opposing vaccination. It prescribed what they needed to do, with the main aim of encouraging parents to sign the refusal form:

It is prescribed how to deal with them [parents]. They have to sign they either refuse or delay vaccination. Paediatrician 1, CHC 2

The practice of signing and recording that parent either refused or delayed vaccination was seen as a way of protecting health workers should there be consequences to such actions:

We had meetings in which the Head of Department used to say, "Protect yourself, as if tomorrow some child contracts measles, parents are going to accuse the paediatrician, that the paediatrician did not apply the vaccine." So I say to my physicians, "When a healthy child comes in, write down that the child is healthy but the parent refuses immunization." Because they [parents] don't want to sign. Paediatrician 2, CHC 1

Therefore, in case parents did not want to sign the refusal statement, an official note would be drawn up:

We draw up an official note, that is also written in the procedure, and the note has the same weight as the statement of immunization refusal. The official note is signed by the team that was there with the parents. Paediatrician 6, CHC 1

Signed statements or official notes on refusal are also collected at a central level and then sent to the Sanitary Inspection which is again done by one nurse. As it has been mentioned in the previous sections, insisting on parents signing the refusal statement might cause a conflict between them and paediatrician. Using only the official note to report parental refusal might help avoid such potential conflicts.

Monitoring regular vaccination

Health workers described how they monitor vaccination. Informing parents of vaccination and scheduling the next vaccination is done after a performed systematic check-up, but also during consultations at the so-called "sick side" (where a team receives visits of sick children). Such consultations are always used as an opportunity to check

whether a child has had a regular and full vaccination. In that way, the parents who have been delaying for a long time or simply forget about the vaccination are monitored.

Every professional in the field of paediatrics knows that you check the vaccination before you even open the records and then you say, "Come when your child is healthy". I also write down, "Parent warned about vaccination, date, sign here, please."
Paediatrician 4, CHC 1

Some participants noted that the shortcoming of this method of monitoring was that it failed to detect irregularly vaccinated children who would not get ill often, and therefore would rarely come for consultations. The other way to discover irregularly vaccinated children is by reviewing medical records, which is occasionally performed mostly by nurses. The procedure in that case is to register those who have missed regular vaccines, and then call them by telephone. If parents do not show up after several telephone calls, the practice is to send summons in writing. Finally, if parents refuse to come even after that, those who refuse vaccination are reported by means of official note. The task of summoning parents in all these ways is performed by nurses, and several participants commented that the whole procedure is demanding and time-consuming. Apart from that, another shortcoming of reviewing records as the method of vaccination monitoring is that sometimes this procedure cannot be performed regularly:

It happens that you cannot update the records. This mostly happens in October, November when we have large epidemics, when the staff is either on sick leave or too busy so they cannot do it. Paediatrician 6, CHC 1

In short, the limitation of both ways of detecting irregularly vaccinated children is that their implementation to a great extent depends on other factors, such as the regularity with which children come for consultations, or the availability of time and staff for the reviewing of medical records.

Keeping records on vaccination

The records on administered vaccines are kept separately by paediatrician and nurse, and at several different places, both electronically and on paper. According to the insights based on conducted observations, such procedure reduces the possibility for errors to occur when recording vaccination. It could be assumed that it is also helpful in reducing the possibility of falsifying certificates on vaccination, which, according to the participants, has been done by some parents. On the other hand, the conducted observations revealed that keeping records in several places takes additional time which health workers already chronically lack.

Reminder system

Parents are reminded of forthcoming vaccination exclusively during consultations, and this is done equally both by doctors and nurses. This practice is not problematic during the first year of child's life as consultations are frequent during that period; hence parents are informed on such occasions.

During the first year it's simple because there is a precise schedule. They are most regular during the first year, and most interested to come.
Paediatrician 4, CHC 1

However, after the first year, when the systematic check-ups are less frequent, the possibilities for irregular vaccination increase. As already noted, the opportunity to remind parents of vaccination in such cases mostly occurs when parents bring a sick child to see a doctor.

When children grow up, when they turn one, then we have to remind them [parents] when they are supposed to have a systematic check-up and a vaccine. Because that is when they forget, they become more relaxed. When they are ill, when they come to me, then I take a look and say, "You haven't had your systematic check-up, nor the vaccine, you should come for that." Paediatrician 1, CHC 1

Thus, there are fewer opportunities for the reminding about future vaccination in children over one year old, which can affect the timeliness of vaccination. Just like in the case of monitoring irregularly vaccinated children, such reminders also depend on other factors like the regularity of coming for consultations or systematic check-ups. The only way in which parents can have precise records on the forthcoming vaccination is via a card for parents in which nurses record received vaccines and the date the following vaccination is scheduled for. However, the participants stated that parents would sometimes forget to bring the card when they came for check-ups and consultations or that they also often lose it, which revealed the drawbacks of such reminder.

Time and other structural factors

All participants stated three main, mutually related, factors that interfered with immunization implementation: lack of time, lack of staff (both of paediatricians and of nurses) and being overloaded with administrative duties related with primary health care. The combination of these factors was mostly assessed as burdening both for them and for their communication with parents:

Well, it is a burden. Certainly. You simple feel as if you haven't provided everything that you were supposed to. It feels incomplete. I'm not relaxed as I perhaps should be. You know, when you have a waiting room full of nervous parents. Nurse 2, CHC 1

Indicated within the answers of some participants, there is a prescribed total time of 10 minutes during which they are supposed to complete the consultation, while other participants stated they schedule consultations 20 minutes apart.

The communication with parents is as it is, since the Ministry of Health and our Fund have laid down such conditions that we have to schedule healthy patients, i.e. preventive check-ups prior to vaccination at every 10 minutes. I really do not know who has designed this and who thought that you can perform a preventive systematic or any other preventive check-up in 10 minutes. So, a patient comes in and in those 10 minutes (s)he is supposed to be prepared for a check-up, examined by the physician and to receive a vaccine. Nurse, CHC 2

The main strategy the participants use in order to compensate for the time they lack for interaction with parents is to continue any important conversation during the first opportunity they get. According to their answers, when it comes to vaccination, the most time is necessary for the conversation with indecisive parents or those delaying vaccination. This fact is not surprising since indecisive parents have dilemmas that they actively try to resolve in communication with health workers. The conversations with delaying parents can take a lot of time because paediatricians try to convince such parents to consent to vaccination as soon as possible. The parents demanding least time in this regard are those accepting vaccination, who ask questions that are easy to answer, or often do not ask any questions on vaccines at all. When it comes to refusing parents, according to participants, they mostly come with already formed attitudes, which makes the communication with them more difficult, but not necessarily longer – such parents state their decision from the beginning and later often refuse any further conversation on that subject.

Adding to all this, one paediatrician noted that in some seasons, especially in autumn, there could be up to 40 visits in a shift. Beside the limited time for consultations, this could be interpreted as another important physical opportunity barrier.

Legal support

The majority of participants found that legal support was something they lack to a significant extent in the process of vaccination implementation. First, health workers reported dilemmas due to poor understanding of legal

regulations. These primarily concerned uncertainties regarding legal authorizations that health workers had in the process of immunization:

There are rules that we get from time to time and we learn them but I would like them to be a bit more clear, more accessible. There are some who say that we are not even allowed to report them [parents], that we are not allowed to enable insight into medical records, personal identification numbers. All this is not quite clear to me. I would like somebody to -- Perhaps I am a bit limited in that regard, but that is simply what I need. Paediatrician 2, CHC 2

Maybe about those legal regulations. We paediatricians are a bit…when it comes to legal regulations, I am under the impression that not all of us are sufficiently informed, at least I am not. What the law allows and what it covers. How much legal right do parents have to refuse vaccination? How much can we insist and still act within the law? How much can we pressure the parents to accept vaccination, without that being illegal? There. Those might be my dilemmas. Paediatrician 3, CHC 1

One might assume that these dilemmas could negatively reflect on health workers' self-confidence in communication with the most challenging types of parents (distrustful and uncooperative) as those who are most likely to refer to the law in order to avoid vaccination, so this topic frequently appears in their interaction. In that sense, participants stated they would need support in building precise knowledge about their legal options, rights and obligations concerning vaccination practice, as well as for their legal interpretation. However, they also pointed out that the right sources of information about legal aspects were often not available to them (i.e. a legal counsel who they could talk to):

We don't have legal support and it is hard for us to get right and adequate answers, at least not completely reliable ones and the ones given by a lawyer. So we are on our own in that respect. We simply neither have legal counsel nor legal advisor. Paediatrician 2, CHC 2

A particularly important aspect that participants pointed out was not having legal protection concerning immunization implementation. When asked about the main problems for paediatricians when it came to legal support, one participant answered:

Nobody is going to get their back. They are the only ones in direct contact with patients. Well, do you think it is easy to respond to various complaints submitted by [parents'] lawyers? That has to be resolved systemically. The paediatricians cannot be in the front lines of, let's say, vaccination, or be the only ones to blame if the vaccination

is unsuccessful. It is just the feeling of being unprotected and scared, simply-- I, as an individual, should have somebody to turn to and say, "this is my problem, people, protect me. I don't have time to deal with the legal issues, you take that please." Paediatrician 6, CHC 1

Personally, I am very concerned about having the feeling that more and more rights are being given to parents, and some rights being taken away from us. And that there is somebody who protects them [parents], who's got their back in case they need to set up commotion in the public. And nobody protects us, paediatricians. We don't have such support, neither legal one, nor physical in the end. Paediatrician 3, CHC 1

According to the participants, in the context of increased scepticism towards vaccination, the burden of negotiations with parents in the sphere of law and rights regarding immunization entirely fell on health workers. Since this is not their field of expertise and that health workers lack knowledge about the laws, they need systemic support in this regard. Such support primarily implies the availability of expert interpretation of the law and legal obligations, liberating health workers from dealing with legal issues in interaction with parents, as well as providing legal protection in concrete cases.

Social opportunity

Close teamwork was evident between paediatricians and nurses. Most health workers valued advice from colleagues and experts on clinical issues and on communicating with delaying or refusing parents. They believed they would be supported by colleagues should AEFIs occur.

Long term relationships with parents were considered important to develop trust, and to faciiliate good vaccination conversations with indecisive parents.

The consensus was that most of their colleagues support childhood vaccination. Some believed that family doctors/paediatricians lacked knowledge about vaccination. They were critical of health workers who spoke out publicly against vaccination.

Relations between health workers

Paediatricians and nurses implement immunization as a team, and their work is divided according to their duties and expertise. Based on their responses, it can be noted that great importance is attributed to this team cooperation, which is built on mutual trust into knowledge and skills the participants in teamwork possess. Such

trust also exists towards other colleagues in the paediatric service, which is confirmed by the frequent practice of consulting colleagues in case of a dilemma.

The team cooperation is very important and then there are more people with plenty information, nobody thinks the other person does not know something. Paediatrician 4, CHC 1

According to participants, the teamwork of paediatricians and nurses, as well as their mutual relations based on trust, have positive effects on immunization implementation.

Social support from experts

A team can also count on expert-collegial support – the one that paediatricians and nurses get from other health workers of different expertise, as well as from the colleagues they work with. Such support can be divided into clinical and psychological.

Clinical support

Expert support is primarily reflected in the possibility to consult other experts in healthcare regarding the uncertainties one has about vaccination:

We have intensive contacts. I say, I am an old doctor so I have contacts and I know people at Batut Institute and at City Institute of Public Health, our immunologists know me. So I can call them directly. So, when you are personally interested in something, you call -- I call colleagues. Paediatrician 6, CHC 1

Participants also mentioned the possibility to consult other experts when they had a dilemma, and in such situations, personally knowing the experts was not a precondition. Hence, the support in that regard exists and paediatricians use it without any particular problems. Another type of support other medical experts provided to paediatricians was reflected in encouraging indecisive and delaying parents to consent to vaccination:

Often for unyielding [parents], I primarily use my colleagues, immunologists, and so on. Sometimes not even they can't be suggestive enough to make them do it, but sometimes we benefit from them. Naturally, I have good cooperation with allergists if there is a suspected allergy, although that is not considered a hundred percent contraindication. So [a University Children's Hospital] helps such children with suspected eggs allergy, so [parents] adequately prepare the vaccine, take it there and it is applied. Paediatrician 2, CHC 2

Still, the experience of participants somewhat differed in this regard, so some of them said they needed organized support of other experts to encourage parents to consent:

Maybe somebody else should also work on [parents] changing their attitude if possible. Maybe by teamwork, where I could refer them to somebody dealing with developmental paediatric neurology, to talk to that person at what level of development their child is. That is what we lack a bit, that support. Paediatrician 3, CHC 1

This participant talked about the need for the better connecting of different types of expertise and their greater involvement in the immunization implementation, primarily with regard to obtaining parental consent.

A minority of paediatricians did not always follow the recommendations coming from reference institutions and epidemiologists, because they perceived that their judgment was not based on practical work with patients, but on statistical data.

An epidemiologist cannot know more than a paediatrician, because an epidemiologist does not ever examine a child, they only have papers and numbers, and we examine children every day. They can't know better than us, and they don't ask us anything when it comes to these matters. Paediatrician 1, CHC 2

Psychological support

Psychological support regarding immunization implementation refers to the support of colleagues that health workers can count on in case of conflicts with parents that occasionally occur. The majority of participants believed they would get this type of support.

I think we would, I think there is a lot of understanding. It depends on the situation you are in, and in which direction it is developing. We mostly comfort each other after such stress. I need the support of head of department and colleagues in conflict situations. Paediatrician 1, CHC 1

Participants did not consider this type of support to be crucial for their willingness to encourage parents to vaccination, since they primarily considered immunization as the part of their job and as their obligation. On the other hand, they said that they valued such support and that it meant a lot for them in psychological terms.

Relations with parents

Interview accounts suggest that health workers with many years of experience appear to develop stronger relationships with some parents. Such relationships are built on many years of acquaintance, as it happens that parents of current patients used to be themselves the patients of these paediatricians. Communication with parents appeared to partly depend on this aspect – one of the observed paediatricians posed more detailed questions about a child (diet, hygiene maintaining, stimulation through playing) to parents who she didn't know well. Another observed paediatrician remarked that paediatricians treat children from their first month of life until they are seven years old, and that some children stay with them even longer. According to her, this is the reason why paediatricians have a more personal approach to their patients compared to general practitioners. Likewise, the majority of participants noted they had a lot of their own relatives among their patients. This is relevant because of a very important factor of trust between parents and health workers, as well as for their way of mutual communication regarding vaccination. As stated by some health workers, the mentioned social relations (acquaintances, friendships and kinship) were not necessarily the guarantee of parents accepting vaccination without questioning it, but such relations did have their role in the process of negotiations with parents and in obtaining their consent.

Depending on how close I am with them [parents], I explain what is happening on the Internet [regarding false information about vaccines]. Paediatrician 6, CHC 1

According to participants, indecisive parents particularly tend to consult health workers they have known for a long time, whether they are paediatricians or nurses. One of the nurses not dealing with vaccination anymore, said that sometimes parents who knew her from the period when she worked as the team nurse came especially to her wishing to hear her opinion on vaccines and vaccination (see the section about indecisive parents).

Social norms for vaccination amongst colleagues

The majority of participants believed that their colleagues (paediatricians and nurses) predominantly had positive views towards vaccines and vaccination, but that there were also some who did not share those views. According to paediatricians, the reasons for those different views of some of their colleagues were not based on a definitive negative opinion about vaccines or vaccination, but on specifically formed attitudes about them (e.g. the effects of vaccines). The participants noted that such attitudes could motivate their colleagues to postpone vaccination, but did not result in vaccination not being implemented.

Perhaps they don't have a firm position, but they certainly vaccinate children. Maybe they do not follow vaccination schedule and start with administering vaccines early on, but, generally, we all vaccinate. I would not say that this

is about the paediatrician being insecure; it is more about their view, their thinking about the possible effect of those vaccines on the immune system, so they postpone applying some vaccines that parents are afraid of or postpone all vaccines in general. Paediatrician 3, CHC 2

Even now, there are physicians who delay vaccines, who unjustifiably postpone them. From their actions you see they share the views presented on web sites and various problematic sources of information. Honestly speaking, this is a small number of physicians, but from conversations with parents and from medical records we can see that there is small percent of such physicians. Paediatrician 4, CHC 1

In nurses' opinions, their colleagues mostly had positive view of vaccines and vaccination, but they also expressed uncertainties from time to time. According to the following quote, such uncertainties were reflected in sometimes being more inclined to interpret various occurrences or problems as the consequences of vaccination:

The majority does [have positive attitude]. There are some colleagues who are insecure, and they attribute even the slightest problem to immunization, but I do not know anyone who has a really negative view. Nurse 2, CHC 1

Several participants also had certain opinions on the actions of other colleagues as authorities in the field of paediatrics. Specifically, those authorities who speak out against vaccination can have a negative influence on the positions and practice of health workers regarding vaccination because they are influential, i.e. they figure as a relevant demotivating factor in this regard:

We have our professors, leading paediatricians in Serbia who spoke against measles vaccine in public events. That has given rise to havoc in paediatrics. When your professor, who brings the latest opinions from the world, is against the measles [vaccine] in front of 500 paediatricians. It was not various web sites and anti-vaccination lobby that started the mess for us; this was the beginning for us. This was happening in our conferences even before the anti-vaccination lobbies appeared. I listened to that with my own ears. Paediatrician 4, CHC 1

This is significant if we take into account that lectures, conferences and positions presented by authorities in certain field are one of the most important sources of information on vaccines and vaccination used by the health workers (see the section on sources of information). The negative position coming from a person of authority can be very demotivating for health workers with regard to vaccination implementation, which was shown by the statements of several participants in this research who commented on how such positions affected some of their colleagues.

Finally, some participants voiced their opinions on their colleagues regarding their communication with parents. A nurse expressed her opinion that her colleagues did not typically enter into detailed conversations concerning vaccination. As the reason for this, this participant did not state lack of knowledge or lack of confidence, but rather lack of will for conversation due to structural factors, such as being overwhelmed with obligations and conditions in which they worked.

Well the communication is rather scarce, very scarce in that regard. It is not that they are not kind, that they are ignorant, absolutely not. They respect procedure, everything is fine, but there is no energy, that is absolutely reduced to minimum. "Prepare the child, and I shall come." That is it. "If they occur, the reactions are going to be this and this. Thank you very much and good buy." Nurse, CHC 2

This, once again suggests that nurses mostly let paediatricians communicate with parents, and that their conversations with parents regarding vaccination are often reduced to the basics.

Some participants also observed the insecurity of general practitioners with respect to vaccines and vaccination. Namely, several participants said they had contacts with general practitioners who refused vaccination for their own children, i.e. who showed fear of vaccines.

Many of the colleagues from general medicine departments are afraid of vaccines. Paediatrician 3, CHC 1

According to the insight of some participants, physicians from other services, especially general practitioners, do not have enough knowledge on vaccines and vaccination:

Well, physicians from other services are very poorly educated in this regard. Can you believe they can't read the vaccination schedule properly, these general practitioners? It very often happens that they send us the records of those children who are in the period of life when they shift from the Paediatrics to General medicine Departments, with 18 or 19 years of age; they send us records to read the vaccines they received. Nurse, CHC 2

Motivation

Health workers all held positive attitudes about the importance of vaccination and were highly motivated to adminster vaccinations. They were confident in the safety and effectiveness of vaccines, believing in the approval prococcess. All but one believed that VPDs still present a significant risk.

Most (especially doctors) supported mandatory childhood vaccination with some prefering restrictions, penalities and incentives. One doctor propsed mandatory vaccination alongside a more flexible vaccination schedule.

All participants trusted the state's role in vaccination, seeing themselves as part of this system. They were less trusting of vaccine manufacturers viewing them as commercially not socially motivated.

Doctors viewed their role in vaccination as an important part of their health education role, including educating and motivation parents. Conversely, nurses saw their role as technical – administering the vaccinations.

Attitudes about vaccination

All the health workers shared a very positive attitude on vaccination, finding it to be important and necessary. They justified such opinion with usual medical arguments, i.e. by saying that vaccination placed many communicable diseases under control. Likewise, the majority pointed out that they had developed a positive attitude towards vaccination from observing the consequences of previous epidemics of vaccine-preventable diseases.

You know, I was among those students who saw even children dying from measles who saw--we had friends who got infected with poliomyelitis. I survived variola, I saw the variola epidemic. I saw children dying and I saw this was not a fairy tale, those were very serious illnesses. I saw women dying from tetanus because umbilical cords were cut with sickles. I saw what those illnesses meant. Paediatrician 6, CHC 1

The majority of participants also thought the vaccination should be mandatory in Serbia. They based the rationale behind this attitude predominantly on social grounds. In other words, it counteracted those who did not vaccinate their child for reasons such as poverty, lack of education, and also the "mentality" i.e. "immature society" and individuals who, as such, were not capable of making a decision about vaccination independently.

I am not sure that the level of enlightenment regarding health in a poor society such as ours is at a level where everyone knows the importance of vaccination, the importance of immunization. I think it should be mandatory. We are a poor society, we have a lot of children living in poverty and on social welfare and I can say this with confidence. Paediatrician 3, CHC 2

With our level of health consciousness and culture, I think it has to be mandatory. My position is...I think that as a society and as individuals, we are not mature enough to let people choose whether they are going to vaccinate their children or not. Paediatrician 6, CHC 1

Several participants also rationalized the vaccination being mandatory by pointing out that the immunization was also mandatory in other (western) countries, often indirectly, i.e. that it was a precondition for enrolling a child in kindergarten or school.

In the U.S. you have to vaccinate a child when enrolling him/her in school, when enrolling him /her in kindergarten, so isn't that some kind of obligation? Paediatrician 5, CHC 1

Some participants thought that such model of making immunization "indirectly" mandatory would also be effective in Serbia. Namely, they pointed out that the practice of restricting access to kindergarten or nursery by requiring vaccination certificates greatly contributed to the increase of vaccination uptake during the recent measles outbreak.

They can't go to school, can't go to kindergarten, end of story. It is not mandatory, no problem there. It is not mandatory, but you can't enrol your child in school, you can't enrol your child in kindergarten. So far, this has contributed a lot to the increase of vaccination uptake, the fact that kindergartens ask you for [vaccination certificate]. Paediatrician 2, CHC 2

Some paediatricians also thought that parents should be practically made to accept vaccination by imposing various conditions or penalties:

The parents are very sensitive about and interested in material benefits. So, all material benefits, enrolling children in kindergartens, all other social benefits, this 100,000 dinars they get for the first child --So, for instance, money should be paid when the child is six-month old and fully vaccinated. Paediatrician 4, CHC 1

On the other hand, there were also suggestions implying this positive approach was akin to being rewarded for accepting vaccination:

Well, I think people should certainly be stimulated with some reward, I just need to think of what that reward might be. We could come up with some reward. For instance, here, "You who have opted to get vaccinated right now for instance, that's great. The next time you come, we'll take some time, half an hour to do the check-up." Or, "You don't have to make an appointment at all" or something like that, I don't know. Nurse, CHC 2

The view that the vaccination does not necessarily have to be mandatory in the way it has been so far was observed to a higher extent among nurses compared the doctors:

Well, now, in principle, I agree, but I also think that those who say that it does not have to be mandatory, I mean, legally mandatory, are also right, and that there are other ways to commit parents to come on their own and vaccinate their children. Nurse 2, CHC 1

In some participants' opinion and experience, insisting on obligations and the law is not viewed as effective in securing parents' consent, and it mostly leads to conflicts. In that respect, it could be desirable to actively involve other institutions (kindergartens and schools) to insist on vaccination, which would somewhat unburden health workers from frustrating conversations on the law and rights of parents and provide them necessary wider social support for the implementation of immunization.

Only one paediatrician had a specific view about vaccination which had not been observed in others. She thought that vaccination should be mandatory, but stated that the practice should be conducted differently, i.e. in line with a different calendar according to which vaccines would be administered later than they were administered by the existing calendar.

I think it should be mandatory, but it should also be schedule-free. Hence, parents should choose freely when to begin with vaccination. I think doctors should pay more attention to deciding when to vaccinate which child, and not just stick to an imposed schedule, as every child is a different person. Paediatrician 1, CHC 2

In line with this opinion, she was delaying vaccination in agreement with parents as a usual part of her practice.

I almost always deviate. Unless parents insist, there are parents who insist on their child getting vaccinated. Naturally, at every systematic check-up I examine the child and make arrangements with parents. There are parents who want to vaccinate their children according to the vaccination schedule, but there are also parents who want to reach an agreement on the manner of vaccination. When, with what weight, in which period, were there any adverse reactions after vaccination in the family and should we wait a bit. Does the child have eczema, does the child have a respiratory infection at the moment, which is the most common infection when they are so young, and are there any autoimmune diseases in the family. So, I talk about all these things with parents and then we arrange the vaccination. Parents usually don't complain if the physician says, "Vaccinate your child, but fine, you don't have to do it today." But physicians who do things strictly by the book, so to say, they have a lot of problems with parents. Paediatrician 1, CHC 2

Attitudes about vaccines

The positions towards vaccines are closely linked with attitudes on vaccination. Many participants also stated their very strong positive opinion on vaccines, which is nicely illustrated by the following quote:

If you ask me, I think that vaccines are greater than antibiotics, as antibiotics treat illnesses, but we do not have medicines for viral diseases, and vaccines prevent a mass of viral diseases, so for me vaccines are great. I don't have any problem at all with vaccines. Paediatrician 1, CHC 1

With one exception, other participants said they had absolute confidence in the quality and efficiency of vaccines used in Serbia. This was based on their personal experience in practice, on their trust of institutions that approved the use of vaccines in our country, as well as on the evidence that those same vaccines were used in western countries:

If I had doubts about the quality of vaccines in Serbia, I would not have this attitude towards vaccination. So, if I suspected the quality of vaccines was not good, I absolutely would not stick to my current view that all children should be vaccinated. From my 33 years of experience, I don't think that any of the vaccines that we have administered is bad, or that some child had consequences for receiving it. Paediatrician 3, CHC 1

There are institutions that deal with the monitoring of the control of vaccines and their efficiency. I don't do the monitoring, certain institutions do that. If they are behind it, I accept that it is so. Paediatrician 6, CHC 1

I think the quality is good. Those vaccines are used in other countries too, not just in Serbia. I believe they are of same quality. Nurse 3, CHC 1

The exception among the opinions on vaccines' efficiency and safety was the opinion of the paediatrician who advocated different manner of immunization implementation. Firstly, this participant, unlike the others, emphasized the fact that vaccines did not provide absolute protection:

In principle, the information that vaccines are not omnipotent also reaches us, that their protection is limited, that they don't provide 100% protection. We always have to work additionally on child's immunity. We can't rely on vaccines only. Vaccine can provide support, but it is not the only defensive force in a child's organism.
Paediatrician 1, CHC 2

This paediatrician also had a specific opinion on individual and combined vaccines and said she preferred individual ones:

Firstly, they [parents] mostly do not want to have two vaccines at once, they want to have vaccines one by one. That is why individual vaccines are better. Pentaxim, we used to have DTaP, Polio, HiB, so we were able to plan the vaccination well. That was, really, much better than what we have now. Paediatrician 1, CHC 2

It appears that this position is not based so much on the personal opinion about quality of individual or combined vaccines, but instead related to parents' concerns, and the use of combined vaccines making it more difficult to implement vaccination in agreement with parents. This example once again shows to what extent, in her opinion and practice regarding vaccination, this participant is motivated primarily by her relationship with parents.

Attitudes toward vaccine-preventable diseases

As stated in the previous sections, the majority of participants formed their very positive attitude towards vaccination in great part owing to their personal memory of vaccine-preventable diseases. Most believed that these diseases still presented a significant risk.

I am concerned that pertussis might get out of control, but actually I am concerned about all illnesses. Tuberculosis, we know it has not been eradicated. Paediatrician 6, CHC 1

The exception in this regard was once again the paediatrician whose other views contradicted with the ones expressed by the majority. This participant downplayed the risk from measles as the illness that was talked about the most in the public due to ever more frequent rejection of MMR vaccine.

So far, I had two patients who contracted measles. I myself had them, so I don't think it such a big deal. Unfortunately, when complications happen, as with any other illness, it can be a very dangerous thing, but mostly it isn't. Viral infection like any other. Like any other sort of pox. You treat measles for 10 days, varicella for 21 days, and rubella for 7 days. Paediatrician 1, CHC 2

This participant also said that she did not think measles was particularly more dangerous than other diseases:

I don't think so. Because I saw complications of varicella that were really drastic. I don't say, measles, we know that you can get pneumonia, etc., but just like that varicella can also end up in pneumonia and cause great problems, and many other problems. Paediatrician 1, CHC 2

Trust in institutions and vaccine manufacturers

All interviewed health workers expressed absolute trust for the institutions involved in the whole vaccination system, especially at the state level. Their confidence concerned the state and, more specifically, the institutions conducting the procurement of vaccines and control of vaccines' quality. Such trust was based on the fact that health workers perceived themselves as the part of the vaccination system organized by the state.

After all, I am the representative of this system and this state. I trust the institutions which have been dealing with the quality control for many years. If all those vaccines have passed quality control, and I know they have passed all instances dealing with quality control, I naturally trust those colleagues who have written and issued the attest for vaccines. Paediatrician 6, CHC 1

Most paediatricians stated they did not necessarily have to be familiar with different stages of the whole vaccination system (research, manufacturing, safety control) in order to do their job successfully and conscientiously because of this confidence they had for the whole system.

In my opinion, all those things should function in the state. I am a civil servant and I know what it means to work as the part of that system. I assume that other civil servants also work in line with their consciousness and the law. From that perspective, I believe that is fine. So far, I have not had the chance to be convinced otherwise. The

moment someone convinces me to believe something contrary to what I believe now, I am going to be much more cautious and reserved. Paediatrician 4, CHC 1

Trust is somewhat weaker when it comes to vaccines manufacturers. Since they are not the part of the state-organized vaccination system, they are perceived primarily as market-orientated, and not socially-orientated.

I have trust in our institutions that perform quality control. Of course, I also trust the manufacturers, but that has to be taken with reserve, everybody speaks highly of their own vaccine.
Paediatrician 2, CHC 2

Similar kind of scepticism toward some aspects of the vaccination system that are not under the direct state control was expressed by one paediatrician:

Experience is actually the best, because when we do research, we have a specific group of children, we choose them the way we do and then we do the research. Or worse, we do it on guinea pigs; we do not even get to kids. To be honest, I trust myself the most. I believe what I see, based on observation and talking to parents, I trust myself the most. Paediatrician 1, CHC 2

Views about parents

According to the opinion of the majority of participants, parents mostly still accepted vaccination, and those who refused were, by far, a minority. Many of them also believed that the parents who delayed vaccination agreed to it in the end, particularly if health workers talked to them patiently or if they accommodated their wishes and accepted the delay. The majority of participants said that, based on their experience, the most problematic vaccine was the MMR vaccine.

High percent of parents vaccinate their children regularly. Certain percent of children postpones vaccination a bit, but there is also a certain percent of parents who do not want to vaccinate their child. Well, most of them do it because of the MMR vaccine. Paediatrician 3, CHC 2

It's a prejudice that so many parents do not want to vaccinate their children. That is not true at all; there are very few people who do not want to vaccinate their children at all. These people who want to prolong things a bit, in the end all those children receive vaccines, they just do not do it by the schedule. Paediatrician 1, CHC 2

The participants believed that the cause of parental scepticism predominantly lied in the existing social and political circumstances, i.e. distrust towards the whole state system, but also towards the foreign vaccine manufacturers, meaning that parents would prefer to have domestic vaccines. The participants also noted that the internet, the media and the church[1] caused parents' scepticism. Furthermore, most participants agreed that parents had trust into their chosen physicians, and this was important for the implementation of vaccination.

Distrust. Distrust into system, distrust into, let's say, the West that produces vaccines, and suddenly we have different vaccines, so that is it. I don't think this is the issue of distrust towards paediatricians. I don't believe that, it's simply fear caused by conspiracy theories or I don't know what. Paediatrician 6, CHC 1

There is a view among parents that vaccines are bad, that vaccines are for the Eastern market, that it is not the same vaccine. Still, generally, parents have trust into vaccines because they believe their chosen physician. Paediatrician 2, CHC 1

The majority of participants pointed out that it was parents with high education that mostly delayed or rejected vaccination and that they were more demanding in communication.

Those who are not very educated, they are simple and it is easy to work with them. And these who are--They think if they have a PhD in physics that they also have a PhD in medicine. So, it is more difficult to work with educated patients. Paediatrician 4, CHC 1

The views of health workers on the education and social status of parents who refuse or postpone vaccines could also influence their approach to vaccination implementation. The following quote shows that:

We work here with very educated population and many of them know more about everything than we, physicians, do, let me tell you that right away. So, I don't want at all, especially when such parents come, to convince them they need to do something. Just like I don't convince them to operate their children's tonsils. Any persuading is pointless here. If we were situated in some area where Roma population lives, where you see how those people live, but here 90% of people live in perfect conditions, provide maximum to their children. I can't love their children more than they love them, that's for sure. Paediatrician 1, CHC 2

[1] Serbian Orthodox Church has officially taken a stance in favour of vaccination. However, some priests act individually against vaccination and advise parents not to vaccinate. Paediatrician 2, CHC 2, stated that some parents refused MMR vaccine because their priest had advised them not to accept it.

Parents rejecting vaccination

When it came to parents refusing vaccination, the consensus among participants was they were hard to reach and rejected any conversation on that topic. According to the widespread opinion among the interviewed health workers, such parents did not show trust in their chosen paediatrician.

They believe they are fully informed and they stick to their positions whatever I say. Hence, they do not back out from their refusal of vaccination as they simply-- It is not fear, it's not fear from vaccine it is simply total distrust. They don't have trust into vaccine, nor into my attitude toward vaccination, nor into the law. They agree to be in violation of law. Paediatrician 3, CHC 1

The ones you can't talk to are those who completely reject vaccination. They stand their ground and nothing helps there, not sending summons, not us convincing them, nothing. Nurse 3, CHC 1

Nurses in particular found themselves to be helpless in interaction with refusing parents, as they thought they would have practically no influence on such parents:

I am simply under the impression there is no special effect if I as a nurse talk to them. If they have made a definite decision after talking to the doctor, my opinion is not going to achieve anything. Those who refuse, they are simply not interested in anything. Nurse 2, CHC 1

In their opinions on such parents, the participants did not express the view that such parents were problematic with regard to taking care of their child:

There are parents refusing to vaccinate their children who are perfect parents. I have no objections to their parenting or to their care for the child's health; they simply do not want to vaccinate their child and nothing else. They are parents who are very much concerned for the health of their child and there is no way these are parents who do not care for their child. They are only against vaccination. Paediatrician 3, CHC 2

The main opinion on the refusing parents was that they are uncooperative and that almost nothing could make them change their opinion. In the experience of our participants, they were often people with high education who obtained information from most varied sources, particularly online. None of the participants expressed the opinion that such parents neglected their children.

Parents accepting vaccination

In the opinions of the participants, accepting parents were cooperative and that they trusted both the system and chosen physicians. Such parents, according to participants, let chosen physicians make decisions and they were not particularly informed about the vaccines.

Well, those are parents of, let's say, different educational profiles. Of different material situation, but, in essence, parents who are open for cooperation. With whom it is easy to establish contact. They are simply the parents who have absolute trust, who do not doubt. So they are not suspicious types and they do not think that something is being forced on them, that they are being tricked. So they take advice, accept cooperation, have trust, believe their paediatrician. They trust the system. Are they more informed, well I do not really believe that. I think they are not. That perhaps they are even less informed. Paediatrician 3, CHC 1

Parents delaying vaccination or being indecisive

Finally, when it came to parents who were indecisive or who postpone vaccination, the participants believed that such attitude was temporary and that they would agree to vaccination sooner or later. In participants' opinion, those parents mostly trusted their chosen physician.

Those who delay, they want to vaccinate their child and they trust the vaccine, they trust the doctor. There is no convincing there, we just need to make some plan of vaccination. Firstly, they mostly do not want to have two vaccines at once, they want to have vaccines one by one. Paediatrician 1, CHC 2

They feel fear, which is unrealistic, and they are not ready to do it at that moment, but, they'll do it next time, in a week, in ten days, when they return from vacation, they need to convince themselves that is the right thing to do. Nurse 3, CHC 1

Views about health workers' role in the vaccination process

The responses paediatricians and nurses provided concerning the attitude on their own role were somewhat different. Although the participants generally stated that both sides should perform health education in communication with parents, nurses said that their role in practice was predominantly to perform the technical aspects.

Well, my role is just to apply the [vaccine] and prepare, the patient, naturally, and apply the vaccine, in the end, that is---Care about preserving cold chain, about vaccines while they are at the department, the chief nurse does the requisition, so I do not have to care about that --there. So, care about preserving cold chain, preparing patients and application. Nurse, CHC 2

In contrast to nurses, paediatricians stated much more that their role consisted of other aspects as well, such as conversation, educating and informing parents, encouraging vaccination, etc.

Our task is to send summons, to talk to parents, to collect evidence that we have talked to those parents and wanted to vaccinate their child. It is my job to clarify and explain. Paediatrician 3, CHC 2

The majority of paediatricians stated they thought of vaccination not only as a constituent part of their job, but often as of the most important part of their work dedicated to prevention. In line with such views, some participants pointed out that their role was particularly encouraging vaccination under the circumstances of parents' trust being fragile:

I think that the most important thing is to apply it to as many persons as possible, to raise the percent as much as possible. Despite all these difficulties, and rejections and non-cooperation and all sorts of commercials we should still work on it as this is our profession. That is our part of the job. Paediatrician 3, CHC 1

Most paediatricians also stated that their role in the whole vaccination system was to follow the instructions from the leading public health institutions:

I just execute the job and follow the guidelines I get and rules prescribed by our leading institutions and the World Health Organization. Paediatrician 2, CHC 2

We can say that paediatricians see their role in relations with parents as an active one, which is seen in their encouraging of vaccination and educational approach, especially in the context of parental distrust and indecisiveness. On the other hand, some also saw their role as a passive one in comparison to the leading public health institutions in the vaccination system, in the sense that they mostly considered it their duty to follow the directions from those institutions. Nurses saw their role more in the performing of technical aspects in the vaccination process.

Ideas on communication skills training for health workers and information for parents

Health workers were keen to receive communication skills training and it was seen as important for doctors and nurses. They were unsure if colleagues would be keen, due to significant workloads and existing training commitments. They favoured interactive workshops with small group work.

There was unanimous support for "official" information leaflets for parents, seen to save time in consultation and to give parents confidence in vaccination. Suggestions were to distribute these leaflets in pregnancy, before the intensive schedule of vaccinations in first few months of life, via the home visiting service or in consultations. Leaflets should include concise information on the purpose of vaccination and vaccine safety.

The interviews were used as an opportunity to get health workers' opinions and ideas on training health workers on communication skills and on information for parents. Questions they were asked with regard to training referred to the needs for such training, as well as to its content and form. For information, we explored the needs for leaflets, their content and availability, i.e. what would be the right period to give them to parents.

Communication skills training

Needs

The participants mostly said they would like to receive training in communication skills, and that this type of training was important for both paediatricians and nurses. Some were not sure that their colleagues thought the same, citing that health workers already had too much on their plate and that they were overburdened with other trainings and educational activities:

I think they have too much on their plate and that some would [accept the training], I would, but I don't think that everyone would accept it. You run to lectures, collect points to renew your licence, collect this and that, you are alone [in shift] during vacation season. I do not know, I start with myself, would I say tomorrow, unfortunately, "Oh my, this too now?" But my personal view is that it [training] is necessary. Paediatrician 2, CHC 1

Some of the older participants also thought that they did not need this type of training and that something like that should rather be aimed at their younger colleagues who still lacked experience.

That probably depends a bit on the years spent in service. I believe that in 36 years of working experience--I don't think I need some training now. I think they could benefit, especially young physicians. Paediatrician 3, CHC 2

Content

The participants stated that the training should cover specific problems and situations that occurred in interaction with parents, and that it should also offer guidelines on how to act in such situations. They mostly said they would like to learn how to behave towards parents who were challenging communication-wise, so as to avoid conflict with them.

So how, in what way to react in some unfavourable situations, in those conflict situations, what should a person do in such situations. Where everything goes as it should, you do not need support there. I think that would be most effective, those various situations we are faced with, how should person, actually, control and restrain oneself, so that the natural anger does not come out. Paediatrician 1, CHC 1

Guidelines for different conversations. How to resolve a problem when somebody is convinced they won't have it and they even tend to be aggressive. What to do? A series of procedures, try this, then that, then that. If that doesn't work, do this, this and this. Paediatrician 6, CHC 1

What to do when you encounter resistance? What to do when you come across a person who is uncooperative, who do not want to hear what you have to say, that slams the door, swears? I don't know how to act towards people who behave that way. Who are, for instance, violent, insulting. All kinds of things happen to us. That. So far, I have ignored that, I don't know if that is wise. Paediatrician 3, CHC 1

According to these answers, the training should particularly include clear directions on how to behave and how to approach situations in which parents show resistance, distrust, uncooperativeness, even aggressiveness in communication on vaccines and vaccination.

Mode of delivery

In this respect, the majority of participants stated that the training should be organized as interactive workshops to include exchange of experience with other health workers, and not delivered as lectures.

In essence, it should be primarily practical. So, a concrete case, patient, that is a parent with a child, physician and a concrete case. I would like to see how other physicians approach this issue, what are concrete solutions, how to convince parents with firm beliefs to change them, if that is even possible. Paediatrician 3, CHC 2

Also, many participants said it would be most effective if such training was organized in small groups to encourage discussion:

Work in small groups. That cannot be done in a large group, that has to be done in a small group of up to maximum 10 people. Paediatrician 1, CHC 2

Workshops, but with small number of people and a bit more intimate venues, by departments, for instance a couple of persons, because when you have fewer people, they know each other. They are more relaxed, they talk to each other--When you go, and there are 100 people there, who's going to say something? There is no way somebody is going to say something. Nurse, CHC 2

Bearing in mind the already mentioned opinion of participants that such training might be a burden for health workers, special attention should be paid to the form of training and to making it interesting as much as possible.

Informative leaflets for parents

Needs

With respect to the needs for informative leaflets for parents, all participants agreed that such leaflets were necessary and useful, both to parents and to health workers. According to the experience of the participants, their importance for parents was reflected in the fact that parents very much liked to be informed from such material:

They are precious, patients love written material, love getting something on paper. They love it whenever I have something to give them in writing. Every time they come, they ask, "Do you still have that?"
Paediatrician 4, CHC 1

When it comes to the importance these leaflets had for health workers, the participants primarily stated they would save them time during consultation:

So, it makes things quicker for us, because they are already informed, you just talk about the things [from the leaflets] that were not clear to them. It is better if they get the information in writing from us, then to get it from various unknown forums. Paediatrician 6, CHC 1

That is primarily because we don't have enough time. So, if they ask us something we don't know, it is contained in that leaflets and we can refer them to it. Nurse 2, CHC 1

Some participants also observed these leaflets as a support to health workers in encouraging vaccination. Thus, the leaflets would also represent an official position of reference institutions in the country, which would additionally confirm paediatricians' claims about vaccines and vaccination.

Because, in a way, that would be the confirmation of what I have been saying to them, so now, here is somebody else who says the same thing, somebody else to confirm that. Well, this is some general view that it is so, this is not my personal view. Paediatrician 3, CHC 1

According to the answers of all participants, the informative leaflets are necessary and useful to parents when it comes to making the decision on vaccination, but also to health workers as additional support for efficient implementation of vaccination.

Availability

With regard to availability, the participants mostly considered that leaflets should be given to parents during the period of intensive vaccination or immediately before the beginning of that period. Many of them explained that this was the time when parents showed the greatest interest in vaccines, and that they did not show much interest before that period. However, since the first vaccines are applied at maternity clinics, some participants said that perhaps parents should be informed about vaccines sooner, during pregnancy. One participant mentioned parenting school as the good place to do that.

Other participants also considered desirable the preparation and informing parents on vaccines in advance, because, according to the immunization schedule, vaccination was envisaged for the first time that paediatricians and parents meet. Hence, some participants pointed towards the visiting nurses as a particularly good way to deliver informative leaflets to parents.

The home visiting service is the first one to enter a family and maybe this is the best way to do it. That is the first place where you establish trust towards the healthcare system. When the home visiting service enters a family having a three-day old baby. There, that first contact. We see them here when the baby is one months old and we immediately apply the vaccine without some previous preparation. Nobody prepares them by that time.
Paediatrician 3, CHC 1

Concerning the availability of leaflets, one participant pointed out that health workers should give them to parents directly, and not just leave them in waiting rooms. As the reason for that she stated that such approach increases the chances for the parents to really receive and read necessary information:

You know what, this is also something where you need to be very rational. We get leaflets, and we put that everywhere, at reception desks, and then, while they are available, you see them on the chairs and under the chairs. Does any really end up with them or not? For instance, when I get some material, I jealously keep them locked and then hand it out purposefully. I think it should be handed out purposefully. If the leaflet is on the bench, under the bench, it means they don't read it. It was children playing with them and throwing them away. Exclusively paediatrician, passing it to the parent's hands. Paediatrician 2, CHC 2

To conclude, according to participants, when it comes to the availability of leaflets one should pay attention to the time at which they are given to parents (it is best if this takes place before the first meeting with the paediatrician) and the place where the leaflets are handed out (it is desirable for this to be done during consultations).

Content

The participants mostly stated that the informative leaflets should primarily contain information concerning the vaccines. In that respect, some of them particularly pointed out the vaccine ingredients:

Vaccine ingredients, that is what parents are interested about the most, as well as to what extent are the components serving as preservatives harmful if received in certain doses. That is what [concerns] parents the most--Do they poison their children when vaccinating them. Paediatrician 1, CHC 2

The issue of vaccines safety guarantee is closely related with the previous issue, and some of the participants pointed out that this aspect was also important for parents:

Vaccines being safe for their children, vaccines having passed all the tests they need to pass. The state importing those vaccines for their children with full trust. I mean, that they are really safe, that they are --Perhaps, even some data. Maybe even some statistics. Nurse, CHC 2

The participants also believed that parents needed to be constantly reminded of the risks of contracting vaccines-preventable diseases, so, according to them, the leaflets should include the information on those illnesses. This would point out the purpose of vaccination and the need for it at the same time, and some of the participants felt that this too should be included in the leaflets content. Further to certain answers, the content should be concise and understandable to parents:

Those should be made so they do not contain too much text, having concrete things in them and they should be made so as to draw attention and be read. Not too much text, but again something has to be written.
Nurse 1, CHC 1

According to the participants, the leaflets should contain information that parents are most interested in, but they should also contain information serving as a warning, for instance the risks associated with vaccine-preventable diseases.

Other ideas about informing parents

The participants also spoke about their ideas regarding informing parents and encouraging vaccination. When it comes to informing, they said that a practical way of informing parents would be via posters that would be placed on the walls of waiting rooms. Apart from that, some of them mentioned that information should also be available in electronic form, especially via mobile phone applications:

Let me tell you, I think a good website would mean a lot. One good official website, where they could ask questions. Like the "Halo Beba" phone line, so they can call all the time and ask questions. I think that would be the best way. And those phone apps, if they could have some music. [laughter]. I'm kidding, but phone apps are a must.
Paediatrician 1, CHC 1

5. Discussion

This is the first in-depth study in Serbia to explore health workers' vaccination communication processes with parents, combining interview and observation methodologies. It builds on a previous study in Serbia[14] in which health worker-parent communication was a small component and contributes to the small, but emerging evidence base on health worker vaccination behaviours in Central Europe.[15-18] The study provides new, detailed insight on the communication strategies that health workers use, and the challenges they face. A key finding was that doctors were confident in their skills to communicate and address concerns of accepting and indecisive parents, successfully applying specific strategies. We discuss first the broader context for vaccination conversations, then

consider three themes that elucidate the health worker-parent vaccination communication process with delaying and refusing parents: *demonstrating (dis)trust, asking questions of non-medical nature*, and *keeping the door open*. For both sections, we link our findings to the relevant COM factor (capability, motivation, physical opportunity, social opportunity)[5,6] and discuss the implications for developing tailored strategies to improve vaccination communication and ultimately vaccination uptake.

Overall, the interviews and observations revealed a positive context for vaccination conversations for three COM factors (capability, motivation, social opportunity). Health workers were generally confident in their knowledge of vaccines, vaccination, and protocols for AEFIs etc., (capability) relying on official information sources, trainings, colleagues, and experts. Some knowledge gaps were evident e.g. on the specifics of contraindications, the importance of timely vaccination. Doctors and nurses were highly motivated to recommend and administer childhood vaccinations believing in their safety and effectiveness (motivation). Most (especially doctors) supported mandatory childhood vaccination or were in favour of restrictions/penalties for non-vaccination. Close teamwork was evident between doctors and nurses (social opportunity), with a clear delineation of roles; doctors focused on informing and motivating parents, whilst nurses did the technical work – administering the vaccinations. They believed their colleagues would support them should an AEFI occur (social opportunity). Physical opportunity barriers to vaccination (rather than barriers to vaccination communication) were a perceived lack of legal protection for AEFIs and the workload for nurses to search children's vaccination records and to telephone parents to remind them to bring their children in for vaccination.

IMPLICATIONS: These findings point to a missed opportunity to involve nurses in conversations with parents. Indeed the ideas for technical and communication vaccination training discussed below could usefully be targeted at nurses to enable them to feel confident to discuss vaccination with parents. Using IT systems to identify children due for vaccination and to send SMS messages to remind parents would free up nurses' time. Providing support to health workers for AEFIs and communicating this support requires written procedures for the protection of health workers as well as the engagement of key organizations e.g. Society of Paediatricians, Chamber of Physicians and health workers' trade unions.

The first theme that emerged as important for understanding health workers' reactions in communication with different types of parents, was *demonstrating (dis)trust* (motivation). Whilst indecisive parents were nervous about vaccination, they trusted health workers who in turn usually responded with empathy and understanding. Doctors sometimes expressed annoyance in communication with parents who, trusting more their own judgement, continued to delay vaccination. Refusing parents were prone to openly demonstrate distrust towards

health workers and the vaccination system, adding to more frustration of health workers. Doctors elsewhere also report the challenge of communicating with parents who decline vaccination for their children and feel responsible for ensuring parents vaccinate their children.[15,19]

IMPLICATIONS: This theme suggests that health workers needed additional skills for conversation with delaying and refusing parents. Indeed, participants were keen to receive communication skills training having received none to date. They also requested "official" information leaflets for parents to support their conversations and save time in consultations, seen as currently lacking. Communication training packages for health workers nowadays focus on tailoring conversations and information to parents' vaccination position.[8,25] The intention at the outset of this TIP work package was use the study findings to adapt an existing communication programme (SKAI)[8] to the Serbian context. However whilst the study was underway, immunization communication training developed by the John Hopkins Center for Communication Programs[25] was piloted with some health workers in Serbia. The logical next step would therefore be to use the study findings to inform the tailoring of that package to the Serbian context, for future roll-out of the training. Developing written information for parents was the focus of work package 1 in this TIP project. A general information leaflet "what every parent should know" was developed for all parents alongside a "Frequently asked questions" leaflet targeting indecisive (hesitant) parents and those delaying vaccination. Health workers' ideas for the content of these leaflets fed into their development. Parents' feedback on these leaflets and their ideas for delivery were also captured in focus group discussions, with recommendations fed back to the Institute of Public Health for taking this forward.

An important second theme identified in interaction with refusing parents was that these parents often directed the conversation towards social and political issues by *asking questions of non-medical nature*. They raised questions about institutions that guaranteed vaccine quality and safety; vaccination being mandatory; vaccines not being produced by the national manufacturer. Such questions appeared to exceed the domain of medical expertise (capability) and doctors lost the safe ground where they could talk about vaccines as professionals. Scholars usually call for strengthening of vaccine education among HWs and advise on using evidence-based data to address parents' concerns.[20-22] Our findings indicated that communication with parents on vaccines and vaccination was not always limited to medical topics. Whilst better information provision to parents may improve vaccination attitudes, this is unlikely to be sufficient in cases where the institutions are mistrusted.[23]

IMPLICATIONS: Work package 3 of this TIP project was to develop and deliver a CME programme for vaccination for paediatricians, focused on imparting technical knowledge. This was piloted and evaluated in 2019. This theme suggests that the curriculum could usefully be extended to include social and political context of vaccines and

vaccination. Addressing some identified knowledge gaps and requests from some health workers for more "advanced" technical training are also relevant to future versions of this CME programme.

The final theme related to health workers accepting delaying of vaccination as a strategy in *keeping the door open* for implementing vaccination in the end and to maintain good relations with parents (social opportunity). Developing trusting and positive relationships between health workers and parents has been recognised as pivotal for vaccination decision-making.[24] Delaying is problematic because it involves doctors investing considerable time and energy in following up and persuading parents to vaccinate, often agreeing to delay vaccination regardless of official protocols, e.g. in cases of mild sickness. Moreover the risk of this approach, if used too often, may be that delaying vaccination becomes socially acceptable among health workers which could have a spill-over effect on parents who might view delaying as socially (and medically) acceptable.

IMPLICATIONS: This theme suggests that health workers need support in using other strategies to ensure good relations with parents. This could be addressed within both types of health worker trainings. The CME programme could educate on the necessity of timely vaccination to change the acceptability of delaying. Whilst the communication training could provide acceptable strategies to use with parents to secure timely vaccine that avoiding pressuring parents with legal threats and intimidation.

STRENGTHS AND LIMITATIONS

The key strength of this study is the use of two complementary qualitative methods in understanding communication between health workers and parents. The combined approach using the same participants enabled us to identify confirming and contradicting aspects of health workers' accounts. Two templates added value to the observations, one enabling general description and the other contributing to identifying specific aspects of communication.[11]

It is important to reflect on the limitations of this study. First, the issue of generalizability (as a qualitative concept).[26] This was a small study, conducted in two CHCs Belgrade, with highly experienced health workers who were invited by their director to participate. It was summertime where there are less consultations, and at the height of a measles outbreak. It is of course, possible that we may have heard different accounts and observed different vaccination practices at a different time, and in other CHCs in Serbia with younger, less experienced health workers. However, we achieved data saturation (where no new themes were emerging from the interviews) and captured good diversity of views and practices, providing a valuable breadth of insight that indicated both strengths of, and challenges for health workers. This, and the rigour of the study design and conduct, give us

confidence in our findings. We did not collect any demographic data from the parents and so cannot comment on how age, education etc. may be associated with their vaccination position. We also acknowledge that no observations were done with indecisive and refusing parents, meaning we were unable to confirm health workers' accounts about their strategies with these groups of parents. Finally, the researcher's presence during consultations may have altered health workers' or parents' behaviour. Future research could usefully include CHCs outside of Belgrade, a broader mix of health workers and of parents' vaccination positions.

6. Conclusion

This qualitative study focusing on health worker perspectives provided important insights into the context for vaccination conversations and the interaction between HWs and parents with various positions on vaccination. It revealed that heath workers in Serbia need additional skills and strategic approaches to respond to parents who refuse and wish to delay vaccination, to secure timely vaccination. These insights will now inform tailored strategies to improve vaccine acceptance and demand in Serbia.

References

1. Statistical Office of the Republic of Serbia. Estimates of Population 2019. https://www.stat.gov.rs/en-us/oblasti/stanovnistvo/procene-stanovnistva/ Accessed 30 June 2022.
2. Institute of Public Health of Serbia "Dr Milan Jovanovic Batut". Report on Conducted Immunization on the Territory of the Republic of Serbia in 2018. http://www.batut.org.rs/download/izvestaji/Godisnji%20imunizacija%202018.pdf. Accessed 21 November 2020.
3. World Health Organization. European Vaccine Action Plan 2015-2020. https://apps.who.int/iris/handle/10665/3404002. Accessed 30 June 2022.
4. Institute of Public Health of Serbia "Dr Milan Jovanovic Batut". Current epidemiological situation of measles in the Republic of Serbia (updated 23 Aug 2019). 2019. http://www.batut.org.rs/index.php?content=1629 . Accessed 16 January 2020.
5. World Health Organization Regional Office for Europe. Tailoring Immunization Programmes (TIP). 2019. https://apps.who.int/iris/handle/10665/329448 Accessed 29 Nov 2019
6. Bach Habersaat K, Jackson C (2020). Understanding vaccine acceptance and demand—and ways to increase them. *Bundesgesundheitsblatt* 63:32–39.
7. Michie S, Atkins L, West R (2014). The Behaviour Change Wheel. A Guide to Designing Interventions. Silverback Publishing: Bream, UK.
8. National Centre for Immunisation Research and Surveillance. Talking about Immunisation. 2021. https://talkingaboutimmunisation.org.au/ Accessed 30 June 2022.
9. Trifunović V, Bach Habersaat K, Kisić Tepavčević D, Jovanović V, Kanazir M, Lončarević G, Jackson C. (2022). Understanding vaccination communication between health workers and parents: a Tailoring Immunization Programmes (TIP) qualitative study in Serbia. *Human Vaccines & Immunotherapeutics* 18:e1913962.
10. Berry D (2007). Health Communication: Theory and Practice. Open University Press: UK.
11. Association of Paediatricians of Serbia. 2015 https://ilep.eu/association-of-preventive-pediatrics-of-serbia/ Accessed 25 September 2020.
12. Bogdanović R, Lozanovic D, Pejovic-Milovanovic M, Sokal-Jovanovic LJ (2016). The Child Health Care System of Serbia. *J Pediatr* 177S:S156-S172.
13. Berry NJ, Danchin M, Trevena L, Wittemand HO, Kinnersley P, Snelling T et al (2018). Sharing knowledge about immunisation (SKAI): An exploration of parents' communication needs to inform development of a clinical communication support intervention. *Vaccine* 6:6480-6490.
14. UNICEF. Knowledge, Attitudes and Practices in Relation to Immunization of Children in Serbia. 2018

https://www.unicef.org/serbia/media/9146/file/Knowledge,%20attitudes%20and%20practices.pdf Accessed 12 July 2022.

15. Musa S, Skrijelj V, Kulo A, Bach Habersaat K, Smjecanin M, Primorac E, Becirovic D, Jackson C. (2020). Identifying barriers and drivers to vaccination: a qualitative interview study with health workers in the Federation of Bosnia and Herzegovina. *Vaccine* 38:1906-1914.
16. Musa S. Habersaat KB, Jackson C, Kulo A, Primorac E, Smjecanin M, Funk S. (2020). Tailoring Immunization Programmes: Using patient file data to explore vaccination uptake and associated factors. *Human Vaccines and Immunotherapeutics* 17: 228–236.
17. Nielsen SM, Franklin BAK, Jackson C, Ceban A, Shishniashvili M, Sahakyan G, Mosina L, Habersaat K. (2019). New vaccine introduction: strengthening health literacy to increase health equity. *Panorama* 5:123-129.
18. Habersaat KB, Pistol A, Stanescu A, Hewitt C, Grbic M, Butu C, Jackson C (2020). Measles outbreak in Romania: understanding factors related to suboptimal vaccination uptake. *European Journal of Public Health* 30:986-992.
19. Berry NJ, Henry A, Danchin M, Trevena LJ, Willaby HW, Leask J. (2017). When parents won't vaccinate their children: a qualitative investigation of Australian primary care providers' experiences. BMC Pediatr. 17:19.
20. Simone B, Carrillo-Santisteve P, Lopalco PL. (2012). Healthcare workers' role in keeping MMR vaccination uptake high in Europe: a review of evidence. Euro Surveill. 17:20206.
21. Omer SB, Amin AB, Limaye RJ. Communicating About Vaccines in a Fact-Resistant World. (2017). JAMA Pediatr. 171:929-930.
22. Leask J, Kinnersley P, Jackson C, Cheater F, Bedford H, Rowle G. (2012). Communicating with parents about vaccination: a framework for health professionals. BMC Pediatr. 2:154.
23. Yaqub O, Castle-Clarke S, Sevdalis N, Chataway J. (2014). Attitudes to vaccination: A critical review. Soc Sci Medicine 112:1-11.
24. Benin AL, Wisler-Scher DJ, Colson E, Shapiro ED, Holmboe ES. (2006). Qualitative Analysis of Mothers' Decision-Making About Vaccines for Infants: The Importance of Trust. Pediatrics. 117:1532-1541.
25. John Hopkins Center for Communication Programs. Interpersonal Communication for Immunization Package. 2018 https://ccp.jhu.edu/projects/interpersonal-communication-for-immunization-package/ Accessed 26 July 2022
26. Ritchie J, Lewis J, McNaughton Nicholls C, Ormston R. (2014). Qualitative Research Practice. London, UK: SAGE.

Appendix 1: Interview topic guide

1. INTRODUCTORY QUESTIONS
• How long have you been doing your job? • What is your role in the implementation of vaccination? • What is your role in talking to parents about vaccination?
2. VACCINATION SYSTEM

• Is there a specific immunization procedure in your PCC ?
  o In case of adverse reactions to a vaccine?
  o In case of counterindications?
  o In case parents refuse vaccination?
• Who defined this procedure?
• Do deviations from this procedure sometime happen? By you? Your colleagues?
• How do you notify parents about vaccination?
  o Who does this? In which way? Please describe briefly. How well does it work?
  o Do you remind parents prior to a vaccination appointment or only in case they don't show up for the appointment?
• Who keeps records of vaccination?
  o How do you monitor those who are unvaccinated or under vaccinated?

3. VIEWS

<u>3a. Vaccination</u>
• What are your views regarding vaccination?
  o What do you think about vaccination being mandatory in Serbia?
• According to your impression, do your colleagues have similar views to you?
• How did you form your position on vaccination? Who/what influences your position? In what way?
  o Health workers who publicly promote or contest vaccination/discussions with your colleagues and close persons/media/social media/parents?
  o Which information sources do you trust? Why is that?

3b. Vaccines

- What do you think about the quality of vaccines in Serbia? Safety? Efficacy?
- According to your impression, do your colleagues have similar views to you?
- Based on what sources have you formed your position regarding vaccines? Why those?

4. COMMUNICATION

4a.

- Which information do you provide on vaccines to parents?
- Do you use some particular source of information?
    - Why that source?
- Do you talk to parents about vaccine side-affects? How comfortable do you feel talking to parents about that? Why is that?
- Do you talk to parents about contraindications for vaccination? How comfortable to you feel talking to parents about that?
- Do you talk with your colleagues about how to talk to parents?
    - Formal meetings?
    - Informal conversations?
- Do you think parents trust vaccines and vaccination?
    - Who trusts/doesn't trust?
    - Which vaccines?
    - In your opinion why is that?
- Do you make distinction between hesitant and declining parents? What is that distinction?

4b.

Accepting parents

- How do you communicate with parents who accept vaccination?
- What is your usual approach to discussing vaccination with accepting parents?
    - Do you use some specific strategies in communicating with them? Please tell me about these.
- Do accepting parents ask any questions about vaccines? Which questions?
- How confident are you in communicating with those parents?
- Do you feel comfortable talking about vaccination with accepting parents? Why/why not?

- Do you encourage these parents to vaccinate their child? In what way? If no, why not?
- Please describe a recent example of your communication with such parent and your attitude in that communication.
- In your opinion, can your communication with accepting parents be improved? In what way?

<u>Hesitant parents:</u>

- How do you communicate with parents who are hesitant about vaccination?
    - What do you say to them?
- What is your usual approach to discussing vaccination with these parents?
- Is there anything that particularly helps in these conversations? Hinders?
- Do you encourage these parents to vaccinate their child? In what way? If no, why not?
- What questions do they most frequently ask? What do they usually want to know?
- Do you use some specific strategies in communicating with them/helping them decide?
- How confident/patient are you in communicating with those parents?
    - How comfortable do you feel in talking about vaccination with hesitant parents? Why/why not?
    - Is there something that particularly challenges you in communication with these parents? What is that?
- In your opinion, what are the best ways to encourage these parents to have their child vaccinated? Why do you say that?
- What would you see as a good outcome of a conversation?
- Please describe a recent example of your communication with such parent, what your position was and what the outcome was.
- In your opinion, can your communication with hesitant parents be improved? In what way?

<u>Declining parents:</u>

- How do you communicate with parents who decline vaccination?
    - What do you say to them?
- What is your usual approach to discussing vaccination these parents?

- Is there anything that particularly helps in these conversations? Hinders?
- Do you encourage these parents to vaccinate their child? In what way? If no, why not?
- What questions do they most frequently ask? What do they usually want to know?
- Do you use some specific strategies in communicating with them?
- How confident/patient are you in communicating with those parents?
- Do you feel comfortable talking about vaccination with parents who refuse vaccination? Why/why not?
    - Is there something that particularly challenges you in communication with these parents? What is that?
- In your opinion, what are the best ways to encourage these parents to have their child vaccinated? Why do you say that?
- What would you see as a good outcome of a conversation?
- Please describe a recent example of your communication with such parent, what your position was and what the outcome was.
- In your opinion, can your communication with declining parents be improved? In what way?
- Do you ever have confrontations with parents regarding vaccination and how often do they happen?
- What are the causes of these confrontations? Please describe one specific case.
- Do your colleagues ever have confrontations with parents? Tell me about these.

5. OBSTACLES TO ENCOURAGING VACCINATIONS

5b. System perspective

- Do you have enough time to talk to parents about vaccines? Why/why not?
- Who would support you in case parents blamed you because of an adverse reaction to a vaccine?
    - Does your supervisor support you in these matters? How?
    - Do you and your colleagues support each other? How?
- Does that affect your willingness to encourage vaccination? To what extent?
- In your opinion, is there somebody else who should support you in such case?
- In what ways would you like to be supported?

5a. Personal perspective

- Are you afraid that parents may blame you if their child experienced an adverse event following immunization? Why/why not?
- Does thinking about this affect your willingness to encourage vaccination? To what extent?
- What else are your personal concerns regarding your relationships with parents?
    - Parents threatening to sue you in case of an adverse reaction to vaccines?
- Do these concerns affect your willingness to encourage vaccination? To what extent?

6. IDEAS

- What would be the best way for you to improve your self-confidence with regard to communicating effectively with parents about vaccination?
- What kind of support do you need to establish good relations with parents when it comes to vaccination?
- What kind of training would be helpful in that regard?
- What would you like to learn in such training?
- Do you think that health workers would want to receive such training? Why/why not?
- How can we make this training attractive to health workers?
- What would be the best and feasible way to deliver such training? Online material/lectures (where)?

- How much time would you have for training on this?
- Have you received any kind of support or training in the past which you found helpful? Which and how was it helpful?

7. LEAFLETS

- How helpful do you think information sheets on vaccines and vaccination are for accepting parents? Hesitant parents? Declining parents? Why is that?
- In what way and when should these information sheets be provided to parents?
- Would these leaflets be helpful to you? How?
- Would it suit you to use these information sheets for the consultations with parents? How would you use the in consultations?
- How feasible it is to use these information sheets for the consultations with parents?
- Can you think of other ways to reach and inform parents? (meetings in the health facility – would they attend? Health workers to attend parent meeting elsewhere (kindergartens, schools)? Other?)

8. FINAL QUESTION

- Would you like to add or mention something that we have not talked about?

Appendix 2: Modified SKAI Observation Tool

CONSULTATION OBSERVATIONS	Notes
Number of questions asked / concerns raised by parent	
Nature and content of parents' questions / concerns	
Health workers' use of resources to support clinical communication	
Health worker's use of the specific SKAI skills and strategies	
• Elicit (what Qs do you have?)	
• Agenda (summarise, signpost)	
• Structure Information (checklist, pain relief) (recommendation, how does any of that change your thinking? Etc)	
• Explore (questions) (motivations for change, any you would consider?)	
• Vaccinate (or recommend vaccinating) (reassure)	
• Close (postvax sheet, what to expect, rebook/refer)	
Which resources used?	
Evidence of adaption of clinical goals according to parents' position	
Other?	