“Juggling with dilemmas when promoting public health

- Nurses’ and physicians’ motivating strategies towards vaccine hesitant parents”

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ABSTRACT

Background: To achieve control of a vaccine preventable communicable disease, it is of importance to establish high enough coverage to reach the threshold for herd immunity. Preventive public health interventions, such as vaccination programmes, create dilemmas between societal versus individual benefits of the programme. Vaccine providers handle this dilemma when motivating hesitant parents and vaccine providers’ own perceptions of vaccine benefits will possibly influence the parental decision. The motivating strategies need to support parental autonomy, the best interest of the child and societal benefits. By using the bioethical principles autonomy, beneficence and justice, strategies can be analyzed regarding what agents are most benefitted by the strategy. Purpose: To gain insight in how vaccine providers balance between individual, societal, parental and internal values when promoting vaccine towards vaccine hesitant parents. Method: Explorative qualitative interview study. Results: The respondents’ strategies are more or less influencing and adjusted according to the underlying reason the parents have for hesitation. An underlying strategy is to use means of social interaction to build trustful relationships. Respondents perceived reasons to vaccinate are ranging from individual to societal and are reflected in the strategies and the respondents aim to aid parents to a well informed decision. Some strategies are more persuasive than others and in rare occasions infringe on parental autonomy in a less plausible manner. Conclusions: The findings from this study reflect that the public health dilemma is indeed present in the clinical context when motivating vaccine hesitant parents. Respondents do their utmost to aid the parents to a well informed decision, regardless if the child will be vaccinated or not, or whatever reason parents have for hesitance. Since vaccination is a voluntary action that is required from many to reach herd immunity, vaccine providers need to consider the ethics surrounding motivating hesitant parents to reach best possible outcome regardless if this is benefitting the child, society or parental autonomy.

Key words: bioethics, herd immunity, public health, immunization programs
SAMMANFATTNING


Nyckelord: bioetik, flockimmunitet, folkhälsa, vaccinationsprogram
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INTRODUCTION

In the eighteenth century smallpox was dreaded with high mortality rates. To avoid that the disease would lead to death the practice of variolation was common. Later on the physician Edward Jenner discovered that having been sick in cow pox the body got an ability to withstand the far more lethal disease smallpox. After having inoculated an eight year old boy with cow pox the boy did not develop smallpox (Smith, 2011). These practices were the starting point for one of the most revolutionary discoveries for mankind – vaccination.

Since 1980 smallpox is considered eradicated through persistent vaccination programmes (Smith, 2011). Based on the success of this eradication programme, forty years ago the 27th World Health Assembly established the Expanded Programme on Immunization (EPI) to ensure that all children, in all countries, benefitted from this life-saving vaccine. Today immunization programmes are routinely reaching over 80 percent of children under one year of age. These programmes now include many more vaccines against a wide range of communicable diseases. Vaccination is considered being the most cost-effective and safest mean to improve lives and prevent deaths (World Health Organization, WHO, 2013b). Immunization currently averts an estimated 2 to 3 million deaths every year (WHO, 2013a).

To ensure that every child will have the possibility to be vaccinated, it is of importance to investigate how vaccine providers motivate vaccine hesitant parents since the motivating strategies might affect the final decision by the parent.

BACKGROUND

Vaccines

Active immunization is usually considered synonymous with the term vaccination, and is the process of administration of an antigen that can induce a specific immune response that protects a susceptible host from infectious disease. Some draw a distinction between the two terms. Narrowly defined, vaccination is the process of administration of an antigen and immunization is the development of a specific immune response (Kim-Farley referred in Detels, Beaglehole, Lansang, & Gulliford, 2011). In this thesis the term vaccination will be used and refer to the action of administrating specific antigens. If nothing else is specified, vaccination program refers to the basic vaccination programmes for children.

The different vaccines included in the programmes have been in use for a longer or shorter
period of time. The risks of adverse events vary but some general risks can occur when undergoing vaccination; fever, redness and pain at the site of the injection (Netterlid, Månsson, & Håkansson, 2009). Severe reactions such as anaphylaxis are rare but occur from time to time. Vanlander and Hoppenbrouwers (2014) reviewed the literature and offer a guideline on the prevention of anaphylaxis after vaccination as a help for providers.

Depending on varied vaccine effectiveness there is still a small risk of contracting the disease despite being vaccinated (Cohen et al., 2007; Defay et al., 2013; European Center for Disease Control and Prevention, ECDC, 2013). This shows that despite being vaccinated, some individuals are still vulnerable for disease.

Vaccination coverage differs globally and it is estimated that 22.6 million infants are still missing out on basic vaccines (WHO, 2013a). Statistics show high coverage for Swedish children and over 98 percent are covered for diphtheria, tetanus, pertussis (DTP) polio and Haemophilus influenza type B (HiB); 97,6 percent for pneumococcus and 97,4 percent by measles, mumps and rubella (MMR) (Smittskyddsinstitutet, 2013b). In the county council of Stockholm 2012, the coverage for DTP, polio and HiB are 98 percent. 97 percent is fully vaccinated against pneumococcus and 96 percent is fully vaccinated against MMR (Stockholms Läns Landsting, 2013a).

**Herd immunity**

The phenomenon herd immunity can be defined in different ways. One is; the relative protection of a population group achieved by reducing or breaking the chains of transmission of an infectious agent because most of the population has immunity to infection through vaccination or prior natural infection (Fine 1993 referred in Detels et al., 2011).

To reduce the risk of cases among susceptible individuals, for example infants, unvaccinated persons or vaccinated persons with reduced vaccine effectiveness, it is crucial that a large enough number of people in a population are vaccinated. The incidence or prevalence of a particular infection within a human community is largely determined by the level of herd immunity (i.e. the proportion of the population immune to infection) and the net rate of input of new susceptible individuals. It is not necessary to vaccinate everyone in the community to prevent the spread of infection (Anderson, Hollingsworth & Nokes referred in Detels et al., 2011).
As shown above and highlighted by Fine, Eames and Heymann (2011) there are several definitions of the term herd immunity but one often used is that the risk of infection among susceptible individuals in a population is reduced by the presence and proximity of immune individuals. Further on, it is argued that managers must be wary of target thresholds for vaccination, insofar as thresholds are based on assumptions that greatly simplify the complexity of actual populations. In most circumstances, the sensible public health practice is to aim for 100 percent coverage, with all the doses recommended, recognizing that 100 percent is never achievable, hoping to reach whatever is the ‘‘real’’ herd immunity threshold in the population concerned.

When the number of unvaccinated persons in a cohort is below the herd immunity threshold, there is an increased risk of a disease outbreak which has been shown repeatedly. In 2012 there was a rubella outbreak in the county council of Södermanland where the [vaccine]uptake is less than 90 percent (Stockholms Läns Landsting, 2013a). In this area an anthroposophical community is based (Antroposofinfo, 2009). Despite national vaccination coverage above 95 percent, an outbreak of measles in The Netherlands occurred amongst Orthodox Protestants and groups with anthroposophical beliefs. These are groups who does not in general vaccinate their children and vaccination coverage was below 90 percent in these communities (Knol et al., 2013). Also in Catalonia, Spain, an outbreak of measles in 2006-2007 spread in the population where herd immunity was not established. Another example; in 2011 there was a measles outbreak in Europe with 32 124 measles cases, including confirmed, possible and probable cases. Vaccination status was known for 82 percent of the cases, and of these, 81,9 percent (21 502) were unvaccinated. 46,6 percent (14 966) of all cases occurred in France. In 2012 the number of cases dropped and was comparable to levels of 2010 (ECDC, 2013).

**Vaccination decliners**

In a literature review by Brown et al. (2010) 31 studies were included to examine factors underlying parental decisions about combination childhood vaccinations. Seven main groups of reasons for lower vaccine uptake were discovered. These were vaccine factors including concerns about effects/safety concerns, lower perceived vaccine effectiveness and importance, belief that vaccine causes autism, own and others’ experiences of vaccines and vaccine adverse events, belief in safety of single vaccines, belief in a danger of immune overload, thinking about vaccine in advance of it being due, belief that children receive too many shots; Healthcare system/Government including lower trust in healthcare system and/or
Government, perceptions that discussion with health professionals about vaccination concerns was inadequate in length and depth, dismissive and difficult, perception that vaccine research is vital but currently inadequate and perception that health professionals do not agree with one’s decision; *Information needs* showing that perceived inadequate information was linked with lower vaccine uptake; *Disease factors* lower vaccine uptake was typically linked with lower perceived disease severity, lower perceived likelihood of catching vaccine-preventable disease and preference for natural immunity obtained by having the disease rather than the immunization; *Parental/Social context* lower vaccine uptake was typically linked with disinclination to vaccinate for the benefit of wider society, valuing parents’ right to choose whether to vaccinate, lack of peer support for decision and engagement in personal research. Qualitative studies showed that for vaccine-acceptors, protecting the community by vaccinating their child was a bonus (rather than a driver of uptake), whilst vaccine-decliners viewed it as an unwelcome obligation in conflict with their primary aim to protect their own child; *Practicalities* lower vaccine uptake was typically linked with having missed or declined vaccinations previously and planning to give vaccinations in future; *Demographics* lower vaccine uptake was typically linked with lower parental income, low parental education, and the child in question not being firstborn. Findings also showed that some parents feared that vaccine refusal could negatively affect their relationship with their health professional, and viewed vaccine refusal as rebellion – there was some evidence of parents seeking out health professionals who support the decision they have already made.

Nan, Zhao and Briones (2014) found that strong predictors of parental acceptance of the HPV vaccine had to do with trust in medical authorities. Trust in health information from doctors/health professionals and government health agencies were positively related to willingness to vaccinate one’s child. Earlier findings by Zimmerman et al. (2005) show that parents find more or less reliable information about vaccines on the Internet and that there are an abundance of vaccine criticizing web pages.

The coverage can decline within the general population due to specific events. One such event was the article by Wakefield et al. (1998) that claimed a correlation between MMR and autism. The article caused great alarm and vaccination rates dropped. 1999 there was a dramatic drop down to 88.5 percent among 2 year olds in MMR coverage in Sweden in the aftermath of this article. Parents chose in a larger extent to postpone the start of vaccination with MMR than the recommended age of 18 months (Smittskyddsinstitutet, 2003). Herd immunity was lacking
in 50 percent of the Swedish municipalities (Hedbäck, 2002). The coverage for the other included vaccine did not change (Smittskyddsinstitutet, 2003). Since then, thorough research has been performed and it is now a well-founded opinion that the MMR vaccine does not cause autism (Taylor, Swerdfeger and Eslick, 2014). The coverage increased over the following years and over 97 percent of the children born in 2009 were vaccinated with MMR at the age of two (Smittskyddsinstitutet, 2013a).

Another, recent event that possibly could have affected the participation in vaccination programmes is the incidence of narcolepsy following the mass vaccination against H1N1-flu in 2009 (Wijnans et al., 2013; Partinen et al., 2012; Miller et al., 2013). However, statistics on vaccination coverage in Sweden including children born in 2010 shows high rates in participation in most programmes (Smittskyddsinstitutet, 2013b).

Specific groups have different reasons not to participate in these activities and therefore reduced coverage. Examples of European sub groups that have low vaccination coverage are migrant and nomadic groups such as the Roma children in Bulgaria who face various barriers to accessing health services, including those related to poverty, lower levels of education, and living in geographically remote areas (Rechel, Blackburn, Spencer, & Rechel, 2009). In the Netherlands the coverage among the orthodox Protestant minority is low (Ruijs, Hautvast, Ansem, et al., 2012; Ruijs, Hautvast, Kerrar, van der Velden, & Hulscher, 2013). Also in anthroposophical communities low vaccination coverage is more common (Duffell, 2001; Harmsen et al., 2012).

In Sweden low vaccination coverage is seen within some immigrant groups. In parts of the Somali community it is believed that there is a link between the MMR vaccine and the higher prevalence of autism for Somali children (Socialstyrelsen, 2009; Barnevik-Olsson, Gillberg, & Fernell, 2010). There is also a small group of children with uzbek origin that have low vaccination participation (Smittskyddsinstitutet, 2013c). Lower coverage is also seen in anthroposophical communities (Stockholms Läns Landsting, 2013a).

Quadri-Sheriff et al. (2012) reviewed the literature to examine if concerns for benefit to others impacts childhood immunization decisions. The included studies addressed different vaccination types with an overweight on MMR vaccine and childhood immunizations in general. The review showed that the effects of herd immunity were known by the parents but that only a small number considered this to be the most important reason to vaccinate their
child and the decision is in general largely based on the perceived benefit to each child. There where little evidence on how parents would respond to a discussion about herd immunity and benefit of others during a clinical encounter. One study cautioned practitioners against trying to “strong arm” parents into accepting vaccines via hypothetical scenarios that emphasize parental anticipatory guilt about potential transmission to others. The findings showed lack of convergence about the relative impact of the value of benefit to others as a parental motivator in the context of childhood immunization.

Brunson (2013) performed a qualitative interview study and showed among other things, that vaccinating participants expressed negative opinions about parents who did not completely vaccinate and in some cases even anger. Using words like “lazy,” “selfish,” and “irresponsible,” these participants suggested that parents who did not vaccinate were not doing what was right for the community or their individual children.

**The Swedish State and vaccination programmes**

The present Swedish public health politics are based on the principle that:

> “Effective public health politics should be founded on the individual’s integrity and freedom of choice and be built on the correlation between the determinants for health and the individual’s preconditions”’ (Riksdagen, 2008, p 1).

The current vaccination scheme in Sweden includes nine vaccines: diphtheria, tetanus, whooping cough, poliomyelitis, Haemophilus influenza type B, pneumococcus, measles, mumps, and rubella and for girls it also includes vaccine against human papilloma virus. For certain vulnerable groups other vaccines are recommended for diseases such as Tuberculosis (Socialstyrelsen, 2013). In the County Council of Stockholm, vaccine against Hepatitis B were introduced 2013 (Stockholms Läns Landsting, 2014) and vaccine against Rota virus is being introduced during spring 2014 (Stockholms Läns Landsting, 2013b).

It is stipulated that responsible authorities are obliged to offer vaccination to every child’s caregiver\(^1\) (Socialstyrelsen, 2013). The decision to participate is for the parent to make. The goal of the Swedish vaccination programmes is to control the included diseases, i.e. to limit the spreading of each disease to an accepted level or to eliminate it from the country (Socialstyrelsen, 2008).

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\(^1\) In this thesis the caregiver, whatever formal relationship to the child may be, will be referred to as the parent.
In the information leaflet to health care personnel (Socialstyrelsen, 2008) it is clearly expressed that the parents should be given clear and thorough information about the consequences of letting their child be vaccinated or not. The decision of the parents should be accepted. Later on it says that risk negotiating can be used if a parent hesitates to vaccinate their child and that it could be accepted to postpone the vaccination but that this practice should howsoever obviously not be promoted.

The main providers of vaccines to Swedish children are primary care nurses or pediatric care nurses at children healthcare centers (CHC). It is for the parent to choose CHC and admittance is voluntarily and free of charge and starts with a home visit by the nurse usually within in a week after the child is born. The child is often admitted to CHC until pre-school at six years of age. The centers are primarily run by nurses and it is common that physicians act as consultants for routine or specific consultations. Besides general medical check-ups, administration of vaccines constitutes a substantial part among the basic programmes that are delivered by CHC. The centers primary focus is on preventive medicine (Vårdguiden, 2013). Unvaccinated children are not excluded from the other basic health care programmes and still welcomed to be admitted at CHC.

**Vaccination and ethics**

Public health work and vaccination saves billions of lives every year and can at first glance appear unproblematic from an ethical perspective. But when looking closer to the ethics surrounding public health work in general and more specific on vaccination it is clear that several ethical dilemmas arise, as will be shown below. Depending on the context in which the examination occur different dilemmas will appear. For example, the costs and benefits of vaccination will be different in developing or industrialized countries (Ulmer & Liu, 2002). This thesis will only have the perspective of the industrialized country and leave dilemmas that are more relevant for developing countries aside. The same is done with the discussion whether vaccination should be mandatory or not, from a legal or policy perspective.

**Public Health versus Individual Interests**

Public health as a discipline has grown the last decades which can be illustrated by a search in the database Pub Med (May 2014) using the term “public health”. In 1980 1086 articles were published, compared to 29 451 articles in 2012. One definition of the discipline is:
“Public health is field of medicine and hygiene dealing with the prevention of
disease and the promotion of health. It encompasses different fields primarily
epidemiology, hygiene, biostatistics and social medicine. Public health is one
of the efforts organized by society to protect, promote, and restore the
people’s health, the goals being to reduce the amount of disease, premature
death, and disease-produced discomfort and disability in the population. It is
the combination of sciences, skills, and beliefs that is directed to the
maintenance and improvement of the health of all the people through
collective or social actions. Public health is thus a social institution, a
discipline, and a practice.” (Kirch, 2008)

The definition indicates that interventions are preventive, that they require actions from
society, i.e. collective actions and serve people on population level. Another definition of the
aims of public health work is “public health aims to provide the maximum benefit for the
largest number of people.” (WHO, 2014). This is quite vague in regard to what counts as
public health interventions and what outcome measures, benefits, they intend to improve. The
definitions leads us to presume that interventions in the name of public health are seen as
something positive – maximum benefit, regardless of what these are, for many can be seen as
a good thing. Anomaly (2011) points out that this can be reflected in the wide use of the term
“public health” in a broad range of scientific and political fields and can sometimes even be
misused. Since there is a lack of consensus among experts about the scope of public health,
and public health measures are ranging from vaccination programmes to food inspection
anyone interested in influencing public policy has an incentive to use the phrase ‘public
health’ to justify otherwise controversial programmes and regulations. A coercive law passed
in the name of public health is more attractive than the same law sold as a paternalistic
restriction on individual liberty, or a rights violation done in the name of promoting social
welfare.

The second part of the definition by WHO, (2014) “…the largest number of people”
illustrates that public health work is aiming to provide benefits on population level. To reach
preventive public health targets, interventions must reach a large number of people or groups
of people. Since groups consist of many individuals and interventions cannot fit them all there
will always be some individuals that will not gain from public health interventions. In fact,
some individuals can be harmed, at least carry the risk of harm, as a result of preventive
public health interventions. There is an inherent dilemma between the societal benefits and
the individual’s rights and freedom in the field of public health. This dilemma can indeed be applied on vaccination programmes since herd immunity is dependent on the action of many individuals.

Dawson (2004) tests whether vaccination programmes are unethical by applying the Prevention Problem. He concludes that vaccination programmes are benefitting both the individual and the population as a whole because 1) there are some individuals who will benefit from the programmes i.e. the ones who otherwise would be infected and 2) given that herd protection (the term used by Dawson) is obtained all individuals benefits from those programmes because each person has a share of the herd protection as a public good.

As illustrated above public health programmes can sometimes benefit society more than each individual included in the intervention. Not only can an intervention give little benefit for the individual but it can even infringe on an individual’s best interests for the sake of what is best for society as a whole.

*Biomedical principles*

When motivating vaccine refusing or hesitating parents the vaccine provider face different dilemmas and need to adjust their motivating strategies according to the clinical context. i.e. promoting vaccine for individual protection for the child, respecting the parental decision right, and promoting vaccine for societal interests. It is a delicate task to balance between the agents (child, parents and society). One can handle the dilemmas by using moral principles that helps us to detangle if a strategy is reasonable in regard to different moral perceptions, or values (Krantz, Sachs, & Nilstun, 2004).

To handle the public health dilemma of society versus the individual there are a number of principles of biomedical ethics that often are referred to. These principles can be used to analyze public health interventions and help us to detangle or to understand whether interventions or actions are reasonable or not depending on which agent should be protected or benefitted. Commonly referred principles are the ones defended by Beauchamp and Childress (2013); respect for autonomy, non-maleficence, beneficence and justice, and can be used to illustrate how different values can be inter-mutually conflicting and hence create dilemmas. Beauchamp and Childress (2013) do not imply that any of these moral principles are given priority over any other.
Autonomy
Beauchamp and Childress (2013) define personal autonomy on a minimum level as self-rule that is free from both controlling interference by others and limitations that prevent meaningful choice, such as inadequate understanding. The autonomous individual acts freely in accordance with a self-chosen plan. Three conditions are given for an action to be autonomous; 1) intentionality - an act is either intentional or non-intentional; 2) understanding – an autonomous action need only a substantial degree of understanding and freedom from constraint, not a full understanding or complete absence of influence; 3) non-control - free from controls exerted either by external sources or by internal states that rob the person of self-directedness. Not all influences exerted on another person are controlling.

To respect autonomous agents is to acknowledge their right to hold views, to make choices, and to take actions based on their values and beliefs. Such respect involves respectful action, not merely a respectful attitude (Beauchamp & Childress, 2013).

Beauchamp and Childress (2013) discuss further that an autonomous person who signs a consent form for procedure without reading or understanding the form has the capacity to act autonomously, but fails to so act in this circumstances.

Respect for autonomy is one principle that is threatened when launching public health interventions. In the case of vaccination programmes for children, the agents are two, the parent and the child. Autonomy, freedom and integrity are values that need protection for the parent alone since these are all dependent on the ability to make rational decisions. Rights are a value that include both the parent and the child and can be reciprocally conflicting. Rights of the parent include the right to decide and these decisions can be contradictory to the rights of the child.

Beneficence
According to Beauchamp and Childress (2013) morality requires not only that we treat persons autonomously and refrain from harming them (non-maleficence). But also that we contribute to their welfare and these actions fall under the heading beneficence. Preventive medicine, public health and biomedical research embrace values of public beneficence. The principle of beneficence refers to a statement of moral obligation to act for the benefit of

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2 Depending on the age of the child the ability to grasp possible consequences of certain actions and by that make rational decisions, will differ. In this thesis, “the child” refers to the young child, or infant that not yet has that ability and therefore cannot exercise its autonomy or have the same definition of integrity as an competent adult, i.e. the parent.
others and Beauchamp and Childress (2013) distinguish two principles of beneficence; *positive beneficence* that requires agents to provide benefits to others and *utility* that requires agents to balance benefits, risks, and costs to produce the best overall results.

Beauchamp and Childress (2013) point out that the definition of utility differs compared to classic utilitarian theories that closely associate beneficence with the goal of morality itself. Instead they treat utility as one among a number of prima facie principles, and it does not determine the overall balance of moral obligations.

Public health interventions are often justified by the consequences they bring which presumably will lead to improved health on population level (Anomaly, 2011). Beneficence can be used to illustrate the public health dilemma from the perspective that what counts as good or benefitting for the population can be conflicting with values that is good for the individual.

**Justice**

Beauchamp and Childress (2013) divide the terms justice and distributive justice. In defining *justice* they refer to the terms fairness, desert (what is deserved) and entitlement and state that these accounts interpret justice as fair, equitable, and appropriate treatment in the light of what is due or owed to persons. *Distributive justice* refers to fair, equitable, and appropriate distribution of benefits and burdens determined by norms that structure the terms of social cooperation. Further on Beauchamp and Childress (2013) examine *material justice* in the light of ethical theories such as *utilitarianism* that emphasize a mixture of criteria for the purpose of maximizing public utility; *libertarianism* that lay emphasis on individual rights to social and economic liberty while invoking fair procedures as the basis of justice, rather than substantive outcomes such as increases in welfare; *communitarianism* that underscore principles of justice as derived from conceptions of the good developed in moral communities.

Krantz et al., (2004) analyzed the Swedish immunization program for measles and suggested a model for identification and analysis of ethical conflicts in regard to measles immunization and communication with parents in the clinical setting. The model contains two different

\[\text{How this population is defined, or whom are included in the population and how this population will “perceive” these benefits, whatever they are, can be discussed but range outside the scope of this thesis.}\]
dimensions: the first denotes the affected persons and the other the relevant ethical principles. Since coercion was not an alternative, the parents free choice was fixed as a starting point and the motivating strategies available were giving neutral information or a more active stance from the staff with gentle pressure or a stronger recommendation to vaccinate the child. The identified persons involved were; the children, the parents, the child welfare clinic staff and persons at the policy level\(^4\). Ethical principles were; autonomy, beneficence and justice. The analysis identified ethical benefits i.e. anything from the perspectives autonomy, beneficence and justice that could reasonably make a change for the better; and ethical costs i.e. everything that could reasonably be considered detrimental for the persons involved.

From the principle of autonomy the model gives that the child does not have autonomy and the parents act as proxies. To go against their will always implies some ethical costs and these would be very high if persuasion were used. For reluctant parents these autonomy costs are independent of the possibility of achieving or keeping herd immunity (Krantz et al. 2004).

In the light of the principle of beneficence Krantz et al. (2004) argues that it is in the child’s best interest to get vaccinated against measles but that this benefit is changing depending on the level of vaccination coverage and if herd immunity is established or not. Ethical costs and benefits can affect the parents but Krantz et al. (2004) points out that the parent’s decisions regarding their child might be based on the family’s interests or religious convictions and that this might not be corresponding to Krantz et al. (2004) standpoint that vaccination is in the child’s best interest.

Krantz et al. (2004) states that there can be no justice requirement for a child but that there could however be ethical costs to the vaccinated child in a community without herd immunity because even a vaccinated child is not fully protected against measles. There are no justice costs or benefits for the parents.

Krantz et al. (2004) point of view is that it is not so much utility but the principles of justice as solidarity that should be paired with autonomy in ethical deliberations on preventive health interventions such as the immunization programme for measles.

**Herd immunity as a Public Good and Free-riding**

The act of non-participation in vaccination programmes, or letting your children do so, in a context where herd immunity *is established* could be seen as morally questionable. One

\(^4\) The latter two will not be further discussed.
commonly referred argument is that the act of non-vaccination is morally free-riding and unfair.

According to Cullity (1995) to be able to free-ride a public good, this good must meet some of these criteria:

1) Jointness in supply: if a public good is available to one member of the group for which it is public, then it is available to every other member at no cost to that other member;

2) Non-excludability: if anyone is enjoying it, no one else (in the group for which it is public) can be prevented from doing so without excessive cost to the would-be excluders;

3) Jointness in consumption: one person’s consumption of the good does not diminish the amount available for consumption by anyone else;

4) Non-rivalness: one person’s enjoyment of the good does not diminish the benefits available to anyone else from its enjoyment;

5) Compulsoriness: if anyone receives the good, no one else can avoid doing so without excessive cost;

6) Equality: if anyone receives the good, everyone receives the same amount; and

7) Indivisibility: there can be more than one consumer of the good and each consumes the total output

When comparing herd immunity to the list we can define herd immunity as a public good and this brings the opportunity of free-riding, i.e. opting out on vaccination but still benefit from the protection given by herd immunity.

Another argument applied by Menzel (1995) is if the action of opting out passes the “What if everyone did that?”- test? If everyone would opt-out, herd immunity would indeed cease to exist and that gives reason to morally question the action.

One argument against an obligation to vaccinate where herd immunity already exists is the one by Dawson (2009) called the No Additional Benefit argument. There are no added benefits to others in you being vaccinated, but there is in addition, a potential cost to you, as
an individual, in undergoing such a vaccination if there is *any* possibility of side-effects from the vaccination. This gives that there is no moral obligation to be vaccinated.

**Game Theory and Herd immunity**

The fact that herd immunity does not require 100 percent vaccination coverage brings the possibility to opt out and still benefit from the reduced risk for disease contraction. To predict whether knowledge about the function of herd immunity or present coverage will affect vaccination behaviour, mathematical models and game theories can be used. These are models that predict how vaccination behaviour shifts depending on perceived risks and community behaviours.

Cohen, Brezis, Block, Diederich and Chinitz (2013) explored the process of decision making of getting vaccinated or not, during the H1N1 flu outbreak in 2009. The model showed that at low vaccination rates, vaccination dominated. When vaccination rates increased above 78 percent, non-vaccination was the dominant strategy.

Mathematical models do not take into consideration peoples’ intentions behind opting out or not from vaccination. Parker, Vardavas, Marcum and Gidengil (2013) did a self-reported survey including 442 adult respondents. 61 percent reported that vaccination in the social network would not influence their decision and among those who reported that it would influence their vaccination actions, most stated that an increase in network vaccination coverage would make them more likely to get vaccinated, rather than less. The reduced-risk logic of herd immunity, and more specifically free-riding, is consciously considered by relatively few individuals (6 percent). Far more common are social influences bolstering personal vaccination, such as peer pressure and social learning.

Betsch, Böhm and Korn (2013) did an online experiment including 342 respondents and measured intention to vaccinate. Results showed that when a message emphasized individual benefit from herd immunity, vaccination intentions decreased (free-riding). Communication of social benefit with herd immunity reduced free-riding and increased vaccination intentions when costs (time consumed by a hospital appointment) were low. The conclusion was that communicating social benefits of vaccination may prevent free-riding and should thus be explicitly communicated if individual decisions are meant to consider public health benefits.
Vaccine providers´ perceptions and communication strategies

In 2011 ECDC published a literature review that aimed to collect current research findings from European countries on i) the knowledge, attitudes and practices of health professionals towards measles/MMR vaccination and ii) to assess how health professionals have an impact on parental vaccination choices. The included articles exposed varied levels of knowledge and attitudes towards vaccination with ambivalence, evidence that healthcare professionals both are pro-vaccination and also that some are against it. Support and knowledge for vaccination varied between different professional categories. Homeopath and other complementary practitioners advised in high degree against measles vaccination. The review continues to describe the importance of healthcare professional as a source for information for the parents in their decision process. Lack of transparent and appropriate information could lead to lower MMR uptake (Simone, Carrillo-Santisteve and Lopalco, 2012).

In a questionnaire study by Gilca, Boulianne, Dubé, Sauvageau and Ouakki (2009) the general attitudes of Canadian nurses toward vaccines recommended by public health authorities were positive. Willingness to recommend new vaccines was associated with the perceived vaccine safety, usefulness of a potential immunization program and the perceived professional support of a new vaccine. When they were asked to rate vaccines according to priority the newer Human Papillomavirus vaccine and Rotaviral vaccine got the lowest priority. These also got the lowest scores on statements regarding vaccine safety.

In a focus group study Mollema, Staal, van Steenbergen, Paulussen and de Melker (2012) examined factors related to providers’ (nurses and physicians) intentions to recommend vaccinations to parents of young children. Themes that emerged were among others their perceived responsibility to promote vaccines and discuss pros and cons with parents. The providers also held it crucial to establish a relationship with the parents and that this is based mainly on communication to establish trust.

Rossi and Yudell (2012) explore the ethics of persuasive health communication in the public health context. Their main focus is on communication of information about risk and health on population level. They conclude that arguments that claim that persuasion infringes upon autonomy either confuse persuasion with manipulation or else posit a problematic ideal of autonomous choice as influence free. Persuasive (as opposed to manipulative) health communication infringes upon autonomy if and when it exerts a controlling influence, and persuasion may infringe upon autonomy if risk or health messages fail to provide message
recipients with the information they are due. Their definition of manipulation is when one influences another by bypassing their capacity for reason, either by exploiting non-rational elements of psychological make-up or by influencing choices in a way that is not obvious to the subject. The influence must be intentional bypassing a person’s capacity to reason effectively to count as manipulative. Manipulation infringes upon autonomy because it bypasses the ability a person has to reason and/or treats them without respect; persuasion per se does neither of these things. Furthermore they argue that unlike lies, misleading exaggeration, informational management and knowingly giving bad reasons, it is possible to appeal to emotion without the intention of bypassing a person’s ability to reason effectively.

Beauchamp and Childress’s (2013) definition of persuasion and manipulation is expanding the perspective. To qualify as persuasion, influence must lead to that a person believes in something through the merit of reasons another person advances. Appeal to reason i.e. attempted persuasion is distinguishable from influence by appeal to emotion but it is difficult to determine whether the influence will invoke emotional responses or cognitive responses. Manipulation on the other hand is defined as swaying people to do what the manipulator wants by means other than coercion or persuasion. The most likely form of manipulation is informational manipulation, a deliberate act of managing information that alters a person’s understanding of a situation and motivates him or her to do what the agent of influence intends.

Beauchamp and Childress (2013) detangle different varieties of consent. Consent to a medical procedure may be implicit in a specific consent to another procedure. Similar to implied consent is presumed consent where the presumption lies on the basis of what is known about a particular person’s choice. Beauchamp and Childress (2013) consider that presumed consent on the basis of human goods that are desirable or what a rational will would accept is morally perilous. Consent should refer to an individual’s actual choices or known preferences, not to presumptions about the choices the individual would or should make.

Leask, Braunack-Mayer and Kerridge (2011) point of view is that to be able to actualize ones autonomy in health care, one needs to give a valid consent. To do this one needs to be well-informed and understand the information and act freely and voluntarily. It is also pointed out that the expanding of vaccine programmes for children makes this information giving more and more complex. Furthermore, the newer vaccines narrow the benefit/cost - ratio and this
makes it is no longer clear that parent will always make the same decision when infections may be neither very prevalent nor lethal.

Leask (2009) used standardized scenarios to investigate the ways general practitioners (GP:s) communicate about vaccine risk and benefit to parents who have strong concerns about vaccination. The study sought to assess the strategies GP:s used when communicating with parents. Findings showed that GP:s tended to adopt the role of persuader rather than informer. In the scenario where fictive mother Janice refused vaccination, GP:s appealed to her sense of social obligation to other children who were at risk from her unvaccinated child. A repeated technique was the use of hypothetical scenarios to persuade Janice:

“How would you feel if your child got something? Say your child got measles and another child caught it from your child and that child died?” (GP 9) (Leask, 2009 p.122)

Leask et al. (2012) sought to provide a framework for health professionals when communicating with parents about vaccination. The authors stress that health professionals should, in all encounters, build rapport, accept questions and concerns, and facilitate valid consent. For the hesitant, late or selective vaccinators or refusers, strategies should include use of a guiding style and eliciting the parent’s own motivations to vaccinate while, avoiding excessive persuasion and adversarial debates.

Opel et al. (2013) showed through a cross-sectional observational study that most vaccine providers (74 percent) initiated vaccine recommendations with presumptive (eg, “Well, we have to do some shots”) rather than participatory (eg, “What do you want to do about shots?”) formats. Parents had significantly higher odds of resisting vaccine recommendations if the provider used a participatory rather than a presumptive initiation format (adjusted odds ratio: 17.5; 95 percent confidence interval: 1.2–253.5).

Fernbach (2011) reviewed the literature in Google Scholar, Cochrane, and PubMed that was published between the years 2002–2009 to explore the reasons parents refuse to vaccinate their children, the ethical issues surrounding the prophylactic immunization of children, and provider strategies to handle parental ambivalence. The conclusion is that by listening carefully to their concerns, responding honestly, and providing clear information about the risks and benefits, Nurse Practitioners may be able to build trust and to convince once hesitant
parents to have their children immunized. Fernbach suggests that by considering the ethical principles to which they are bound, autonomy, beneficence, and non-maleficence, Nurse Practitioners can work with the parents to decide what treatment is best for the child.

In a qualitative interview study Ruijs, Hautvast, van IJzendoorn, et al. (2012) aimed to gain insight into the responding of healthcare professionals to parents with religious objections to vaccinate their children. Findings showed three themes of responses; provision of medical information, discussion of the vaccination decision making process, and adoption of an authoritarian stance. Regarding their attitudes towards non-vaccinators three quotes about moral arguments were included:

“The moral dilemma, I can’t relate to that. It is something that doesn’t play a role on my part at all. . ..I can only indicate what we vaccinate for: they have to fight the moral battle themselves” (R8, CHC nurse). (Ruijs, Hautvast, van IJzendoorn, et al., 2012 p. 5)

“There are always people who don’t accept it. That’s their philosophy of life, and I resigned to it, through the years. It’s their way of thinking and you have to respect it” (R 21, GP) (Ruijs, Hautvast, van IJzendoorn, et al., 2012 p.5)

“I find it interesting to learn about their arguments, to talk about it. (R1, CHC doctor”.) (Ruijs, Hautvast, van IJzendoorn, et al., 2012 p. 5)

After the Wakefield affair and the decrease in MMR-coverage Wood-Harper (2005) presented ethical arguments related to parental decisions about vaccination for their children and to suggest how the emphasis of education policy could be shifted towards more persuasive communication about consideration of the implications of individual decisions for public health. She discusses difficulties that arise concerning parents right to refuse consent to vaccination, respect for autonomy, collective responsibilities and altruism, if free-riding should be tolerated and that if health professionals can experience a conflict in duties when they on the one hand are agents of the state and on the other should protect the best interests of her patient. Wood-Harper concludes that healthcare workers should integrate arguments relating to the wider-reaching consequences for society when discussing immunization with vaccine hesitant parents.
Rationale of this thesis

Vaccine providers, primarily nurses, face the dilemma of treating individuals whose rights should be respected but also promoting vaccination to keep high coverage from a public health perspective. Both views are expressed in the guidelines from the Swedish authorities.

Little is written about Swedish vaccine providers’ perceptions on individual and societal benefits of vaccine and how this is reflected in their strategies when motivating hesitant parents. Nor is it known how vaccine providers deal with the dilemma of respecting the parents’ right to decide and promoting vaccination. It is reasonable to believe that the parents’ decisions might be influenced by the providers’ choice of strategy.

To keep high vaccination coverage, and in the case of coverage drop for some reason, it would be useful to get insight in how vaccine providers are balancing between conflicting interests for public and individual benefits and their strategies when motivating parents. It is also of interest to make an inventory of what reasons for parents’ hesitation the respondents face.

PURPOSE

To gain insight in how vaccine providers balance between individual, societal, parental and internal values when promoting vaccine towards vaccine hesitant parents.

Research questions

1) What characterizes the underlying reasons for parental hesitance, as described by the respondents?

2) What motivating strategies are used by the respondents and how do they reflect individual and societal benefits and the respondents perceptions of the same, as well as parental decision right; and own role as vaccine provider?

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5 Refers to the respondents own opinion, attitude or view.
METHOD

Study design
Explorative qualitative interview study.

Sample
Twenty five Children Care Centers, (CHC) were contacted by the author either via e-mail or by telephone straight to the head of department or to the nurse directly. Fifteen CHC did not respond or declined participation on different grounds including heavy work load. Sampling aimed to be purposeful and resulted in the inclusion of ten CHC within Stockholm County Council.

Four CHC are located in areas with known lower MMR-coverage within a specific ethnic minority. Following CHC were included by geographical spread from areas with high coverage. Two CHC are located in central parts of Stockholm and four CHC are situated in suburbs north and south of Stockholm.

Written approval to perform the interviews was given from the Heads of Departments who in some cases spread the word among their staff and interested nurses and physicians then contacted the author. In other cases the respondents were approached via telephone.

The purpose of the study was presented and the respondents received the information letter by e-mail. They were encouraged to read through the information and were welcomed to ask any questions and were informed that participation was voluntarily and confidential (Lantz, 2007).

Inclusion criteria
To increase the probability that the respondents would have met at least a few vaccine hesitant parents, a minimum of one year experience of working in a CHC was required.

Characteristics of respondents
12 primary care/pediatric nurses and 2 physicians with number of professional years ranging from 3-40 years of experience. 13 respondents were female.

Data collection
The semi-structured interviews were conducted by using an interview guide specifically designed for this thesis (Appendix 1). Twelve questions explored perceptions and motivating strategies. Some questions were open ended and closed questions were followed by the questions Why? and How? The interviews started with an inductive approach and the
respondents were asked to speak freely to answer the broad questions and were thereby guided into the field of the investigation (Lantz, 2007). Following this, a more deductive approach was used in order to capture specific topics that had not yet been revealed in the interview. To capture the deeper meaning of underlying perceptions the respondents were asked to expound their answers if necessary. The interviews required approximately 15 - 25 minutes.

The very first interview guide was tested (Lantz, 2007) by interviewing a consultant in infection medicine who gave valuable input and comments on the included questions. After the first four interviews the interview guide was revised in order to get more detailed data and questions were adjusted to better be suited for the purpose of the study.

Context
The interviews were conducted at the CHC in a private area chosen by the respondents. In one occasion the interview was interrupted and continued in another room. One interview was interrupted by an important telephone call to the respondent that got privacy to finish the call. The third interruption was by one of the respondent’s colleague that soon left the room. During the interruptions the interviews was stopped and continued only after privacy was again achieved.

Procedure
The interviews were conducted in Swedish and recorded with a digital recorder and a smart phone as back up if the first recording would have failed for some reason. Transcription of the interviews was done verbatim, including non-verbal emotional expressions (Kvale & Brinkmann, 2009) as soon as possible following the interview.

Analysis of data
The transcribed data were analyzed using content analysis described by Graneheim and Lundman (2004). The analysis started by reading through the printed transcribed interviews to get a full picture of the entire data material. The text was divided into meaning units which included sentences or paragraphs containing aspects related to each other through their content and context i.e. motivating strategies, ethical considerations, parental autonomy and the health care workers perception on herself as a vaccine provider. These main areas were then more carefully examined and all meaning units within an area were carefully read through and grouped together according to their manifest content. This resulted in a large number of sub categories grouped together as either strategy or as perception. The meaning
units were condensed, i.e. shortened but with preserved core and then labeled with a code. Units labeled with similar codes were grouped into categories that were named with a label that described the manifest content, see example from the content analysis, (Table 1)

The creation of theme was the last step in the process. A theme is seen by Graneheim and Lundman (2004) as an underlying meaning on an interpretative level and an expression of the latent content of the text. In the process of creation of theme, all text units were carefully examined again by recontextualisation i.e. the meaning units were once again read in their original format in the full version of the transcribed text. This was to assure that the interpretation of the underlying meaning would be true to the context in its original form (Malterud, 2001). On some occasions it was apparent that the first interpretation was wrong and the meaning unit was then relabeled. Translation of the quotes in the article has been done by the author.

Table 1 Example of the content analysis

<table>
<thead>
<tr>
<th>Meaning unit</th>
<th>Condensed meaning unit</th>
<th>Code</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>They have different reasons but some of them have just made up their minds.</td>
<td>made up their minds / &quot;We don't do it&quot;</td>
<td>made up minds</td>
<td></td>
</tr>
<tr>
<td>And I pictured the reality how the result can be; that the herd immunity doesn't help when it comes to the Tetanus bacterium. But it didn't help, they were very sturdy.</td>
<td>were very sturdy</td>
<td>sturdy</td>
<td>Firm refusers of unknown reasons</td>
</tr>
<tr>
<td>The one ones that dont want to [vaccinate] have all been very tenacious</td>
<td>have all been very tenacious</td>
<td>tenacious</td>
<td></td>
</tr>
<tr>
<td>We have some families that categorically choose not to vaccinate because that's just the way it works.</td>
<td>categorically choose not to vaccinate because that's just the way it works.</td>
<td>categorically refusing</td>
<td></td>
</tr>
</tbody>
</table>

Ethical considerations

This thesis is performed according to the ethical guidelines from the Swedish Research Council (Hermerén & Swedish Research Council, 2011) and the CODEX - regler och riktlinjer för forskning (2013). All Head of Children Care Centers were asked for approval to perform the study at the specific CHC, see Appendix 2 (in Swedish). The identities of the respondents are confidential and only the author has access to the information. In the event that respondents are being quoted they will be referred to as R. X. Since the present study does not intend to change or affect the participants’ opinions nor have any other intentions than to merely explore current perceptions and strategies, respondents will not in any way be endangered by participating. The respondents were asked for informed consent according to Appendix 3 (in Swedish) before the interview was performed. To ensure the confidentiality of the respondents, everything that could reveal the identity of the respondents, for example names or locations, were excluded or hidden already in the first transcription (Kvale & Brinkmann, 2009). The purpose of the critical analysis of strategies and perceptions was solely done from a general point of view.
RESULTS
The content analysis for the first research question resulted in one category and six sub-categories. The content analysis for the second research question resulted in an overarching theme “Ambitious motivating strategies and ambivalent perceptions of parental decision right”, two categories and several subcategories. The categories and sub-categories are not exclusive and sometimes overlap each other. Each sub-category will be illustrated by quotes.

1) What characterizes hesitant parents’ reasons to opt out, described by the respondents?

Category
Sub-categories

![Fig.1 Category and subcategories that emerged through the content analysis to answer the first research question.](image)

1.1 Religion/Life Stance

The respondents described a wide range of parental reasons for hesitance. Commonly ones described was influences by religion or other life stances such as anthroposophical ideas.

“The anthroposophists are knowledgeable, they know what it is all about /they have their knowledge already about the vaccines and the side effects” R. G

“We have others that had a strong religious conviction that say that it is the will of God/I have even met children that had had haemophilus meningitis and they still didn’t want to vaccinate” R. J

“There is one group that belongs to something alike New Age, I don’t really know, but they go to South America// They say that they have met many tribal children that are not vaccinated” R.C
1.2 Knowledge level

Different level of knowledge - low or misleading, as reasons for hesitance were described in the interviews. The parents use different kinds of sources for information and do their own personal research but some are also perceived as well-informed.

“One group is extremely well prepared and have a sober view on information and have the ability to read articles that are based on more scientific facts” R. I

“They had seen some woman on YouTube that spoke negatively about vaccines” R. H

Regarding knowledge about the connection between coverage and disease prevalence two groups of hesitant parents were described: the unaware and the conscious free-riders.

“These diseases don’t exist so why should we vaccinate?” R. G

“I have had some parents that have said “We want to wait because my child is so small and the coverage is so high that the probability to get sick is so low” R. D

1.3 Fright

Fright for MMR-vaccine but also based on the narcolepsy following H1N1-vaccination or prior experience as influencing parental decision was also described.

“The swine flu didn’t do much good for us/ in the areas with low knowledge they just hear bad things and say “We told you so! We shouldn’t vaccinate our children, they became ill/ you do bad things”” R. G

“It is the MMR that are troublesome/the parents always say that the children are getting quiet” R. G

“Today I had one mother that didn’t want to vaccinate because her older child had got severe reactions. I think that is more difficult. “R. L

The respondents also described parents who want to post-pone vaccination and particularly the MMR-vaccine or divide this into single shots.

“Some wants to wait with, for example, the measles, mumps and rubella-shot because they believe the child can get a delay in mental development” R.M
1.4 Mistrust for authorities

The respondents described further on that some parents express a general mistrust towards authorities and believe in conspiracy theories.

"Hesitant families have a more sceptic attitude in general towards CHC, they think we are some sort of controlling institution that will snoop around and check on how they take care of their children" R. I

“There are many from the eastern countries that are more hesitant than before/I have the feeling that they read on the internet that vaccines are something that comes from the US and that it is conspirational theories behind" R. C

1.5 Influence by closely related persons

Parents were also influenced by closely related persons as described by the respondents. Several respondents described families where the father was the hesitant parent.

"And then there is social pressure which is revealed only after you established a trustful relationship. It turns out that the mothers push each other. Some of them are strong and dare to resist but many of them don’t want to tell that they did it” R. L

“The father didn’t want to vaccinate whatsoever but the mother wanted to" R. D

1.6 Firm refusers of unspecific reasons

The respondents also described that hesitating or refusing parents are very firm in their decision, sometimes without an explicit reason.

“They have different reasons but some of them have just made up their minds:
“We don’t do it”” R. C

“We have some families that categorically choose not to vaccinate because that’s just the way it works” R. H
2) What motivating strategies are used by the respondents and how do they reflect individual and societal benefits and the respondents’ perceptions of the same, as well as parental decision right; and own role as vaccine provider?

Fig. 2 The categories and subcategories that emerged through the content analysis to answer the second research question.

2.1 Means for motivating vaccine hesitant parents

2.1.1 Social interaction

The respondents did their utmost to influence the parents and strategies based on social interaction were frequently used. Respondents were careful not to push the parents too hard not to risk that the family would not come at all to the CHC and the respondents would then lose all contact with the child.

“I ask the parents to think about it and come back” R. G

“One cannot put blame on them, I want them to come back for other check-ups, so I don’t push it too hard” R. C

To build a trustful relationship and avoiding blame formed an important foundation for the motivational work. Appeal to emotions was also at some occasions used to influence the parents.
"I think I am much more careful with the words I am using and I think I weigh my words much more than with other families. You have to keep as a good relation as possible in order to be able to know that the child still is OK. It is hard to build some sort of trust when they at the first meeting say “I don’t like your kind”. That makes it very difficult". R.I

“I think the most important thing is to avoid blame so that they feel that I respect their decision// to use a lot of contra argument will be blaming them indirectly” R. D

“ To some extent one uses emotional things like "as a parent you would never forgive yourself if they would get ill and you knew there was a vaccine"” R. C

2.1.2 Extended information

The respondents’ perceptions of vaccine benefits range from societal to individual and are reflected in their motivating strategies in different ways. One way to raise knowledge about societal benefits of vaccines was to correct misunderstandings based on less reliable sources to give extended information of disease severity, vaccines and the importance of high coverage illustrated with historical events. It was perceived that it is important that the parents know what they say no to.

“ I really try to highlight the significance of these diseases /many times they are afraid of allergies but compared to life threatening diseases one can really compare the differences” R. K

“You have to say that the disease doesn’t exist because so many are vaccinated, that we have to have a certain percentage of the population vaccinated to keep these diseases away. You clarify the connection to the parents” R.G

” After the swine flu they got scared for vaccines in general and when you explain that these vaccines [basic vaccines] are the same vaccines that the children got sixty years ago, they understand that it’s a different thing. You say that it’s a well-researched vaccine and that the swine flu vaccine was a quick vaccine” R. E

To meet MMR-scare scientific facts and risk negotiating were used

”The parents say that the children get quiet and that is the autism. One has to start when this history began and tell what I know about how it started, the studies that are
performed before and after the MMR and the causes of autism. You use many ways to persuade and then you can tell them to come back when the child is older and have begun to talk and doesn’t have the disease” R. G

Parental decision right was perceived as valuable by some and that it is a good thing that every person would have the possibility to make up their own mind so that the decision is conscious. Despite this some feared that clear information of the causal link between high coverage and protection of herd immunity would give the parents even more reason not to get vaccinated in areas where coverage was high.

"Despite that I think it is a good thing that we vaccinate I believe it is important that one knows why we vaccinate so that the decision is conscious" R. F

“I think we should have decision right and that we have space to think on our own. My opinion is that it is good the way things are but sure, it is a dilemma” R. I

“I told them that “they are quite protected for MMR in this area because everyone is vaccinated but they might go to another place." But I was also afraid that if I talk about it they see an even bigger reason not to vaccinate, because then they will get it for free," but I didn’t brought it up [herd immunity], the father did” R.N

When introducing the question of vaccine for the first time to all parents some respondents explicitly points out that it is voluntary whereas others informed that admittance at CHC is voluntary and that vaccine programs are one among others that is offered. Hesitating parents are always informed that it is voluntary but some respondents indicated that they felt doubt that this information would even more decrease the intentions not to vaccinate.

"The voluntariness is rarely brought up actually; I seldom bring that up, well if there is hesitation then of course. But it’s something that is included and people don’t question the vaccination programs in that way" R. G

“ I do say it is voluntarily and that I understand it is a difficult decision but that it is also a choice one makes NOT to vaccinate// But I worry a bit that it actually would be more that say “ Oh, really? Don’t we have to vaccinate?"And then they would believe that that would be a good choice” R. H
2.2.3 Mediating

One category of strategies that emerged was the using of mediating processes where respondents investigate what parental reasons for hesitance is based upon and adjusts thereafter.

"Religious reasons, maybe it sounds mean, but those are possible to puncture: "What is it in your religion that makes you hesitant?" It is often halal, if the vaccines are based on an animal that is not halal. We have made sure that we don´t have those vaccines so that is not a valid reason here" R. L

"Then we have the parents that want to postpone because they think the baby is too young and then we make an individual plan for them" R. E

Mediating was also sometimes used when facing families that struggled with internal conflicts regarding the vaccination decision. This put the respondents in a difficult situation regarding parental decision. At some occasions the situation was resolved by the mother whom had taken charge and vaccinated the children. One respondent was careful not to deepen the conflict between the parents and aimed towards a unified decision that both parents agreed upon.

"The father didn´t want to vaccinate whatsoever but the mother wanted to. But once again, I don’t want to push it because the decision should be the parents´ and I don’t want to contribute to create a split between them but rather support them in making a decision that they both are behind” R. D

Another respondent described how the family was referred to pediatrics policlinic for vaccine motivation on the pretext that the child needed to undergo an examination due to its foreign heritance.

“The mother was from XX and the father was Swedish and he didn’t think that they should go to the CHC at all because it was unnecessary/We couldn´t talk to the mother and the father acted like a filter between us/It felt unsatisfactory because we wanted to discuss things with her/ We tried in many ways and referred them to the pediatric policlinic on the pretext that the child should undergo check-ups because he was born abroad like adopted children/ but one can’t be so persistent but wait on the right feeling because it felt like we could win her over in the long run” R.J
2.1.4 Individual arguments

Most respondents weighted societal and individual benefits with vaccines being equally important whereas some perceived the individual benefit of vaccines as the primary reason to get vaccinated.

“The main reason is egoistic” R. I

Some strategies also reflected the individual gain from getting vaccinated and herd immunity and coverage was used as a motivator since this is seen as unreliable from an individual perspective and sometimes irrelevant as it is in the case of Tetanus.

“It can be dangerous to rely on herd immunity, that: “Everyone is vaccinated so it [disease] won’t affect us” R. L

“An argument to use as information is that traveling to countries where the coverage isn’t as high as it is in Sweden and that it occurs larger outbreaks and that is an increased risk of getting it” R. D

“We talk about that it doesn’t benefit you if the neighbor’s child is vaccinated against tetanus//it is helpful that tetanus is included in the cocktail” R. I

2.2 Integrating own convictions

2.2.1 Protecting parental decision right

Some strategies actively aimed to leave the decision for the parents to make based on inner conviction that parental decision right is valuable because parenthood brings exclusive responsibility one has for her own child.

“One hundred percent that they should decide for themselves. It is their children; they are the parents with responsibility. I wish I can meet them in their thoughts and answer their questions whether they should vaccinate or not but in the end it is always their decision and I respect that one hundred percent” R. H

Religious reasons for hesitation were explored but seen as a private matter for the parents.

“If the decision is based on ignorance or scare of side effects, then I feel I have a bigger responsibility to hand them correct information. But, if it is based on ethical or
religious reasons then it´s none of my business as long as I perceive that the parent is devoted” R. I

”I didn´t ask because I didn´t want to talk about their religion because they have the right to believe in what they want. But deep inside me I suspected that they had been on some meeting and had become stronger believers. Perhaps I would have asked them if they would have come back "I am so curious on your thoughts so I need to ask you if there have been any changes in your religion, Jehovas witnesses?”” R.N

2.2.2 Protecting the child

Vaccination as being the most beneficent choice for the child was reflected in some motivating strategies. The respondents also held the dilemma between parental decision right versus the best interest of the child as problematic and were sometimes reflected in the strategies that actively aimed to protect the child.

“Primarily I think of the child that doesn´t make a choice. The parent decide based on her fears and I think that every child has a right to get vaccine for her own sake” R. L

“Compare it with the school law when the parents can´t decide. This [vaccines] must be equal important” R. N

“If they want to postpone, one can argue that a three year old suffers more to have several shots than a three-four month baby // One mother wanted to give single shots and I said that then I would have to give your child 15 shots and that I won´t do. Then she realized that maybe it wasn´t such a good idea” R. E

”I have urged one parent that had a sick child that “Remember to tell them at the hospital that she is unvaccinated”. I wanted her to get an eye-opener, but no, she still didn´t wanted to vaccinate” R.C

When the parents’ hesitation still remained despite the nurses’ solid motivation, the parents were offered and referred to a pediatrician specialized in the matter.

”When the discussion is vivid I actually stop it and refer them to a pediatrician.// Sometimes they get upset and then I feel that it is a good thing to abrupt it and that a physician can answer all the questions” R. A
2. 2. 3 Societal arguments based on ideology

Perceptions that vaccines primary benefits are from a societal perspective and that this gives reasons to vaccinate despite established herd immunity also emerged in the analysis.

“Vaccination is good for many people, many times a vaccine don’t only benefits me but also others, for example Rubella or Mumps” R. D

“It is the herd immunity, that everyone does it and to eradicate diseases” R. A

These societal benefits are connected to perceptions that one should get vaccinated out of solidarity reasons and that opting out is egoistic. Strategies reflecting solidarity reasons were used but strategies reflecting the perception that it is an egoistic action to opt-out were refrained from.

“Primarily I want them to be able to make a choice, but then I want them to make a choice for everyone in Sweden. It is difficult individually but we have talked about it in group discussions and it usually is very interesting” R. H

"It is a good thing that everyone gets vaccinated because there is children that can’t do it and we have to protect them, I say that to the parents. I think it is a responsibility to protect those who can’t be vaccinated" R. E

“It can be quite selfish [opting out] you don’t take your responsibility and my opinion is that if everyone would think in that way, the coverage wouldn’t be as high as it is. // I wouldn’t put like: “It is very selfish to opt out. It is because everyone else gets vaccinated that you won’t be infected”” R. F

2.2.4 Integrating perceptions of own role

During the interviews and in the content analysis the category integrating own convictions emerged. Some perceived themselves merely as a tool for the children whereas others put themselves in a bigger perspective and part of a larger societal network that work together towards the goal that every child should be vaccinated.

“Often I don’t have do so much else than be a good civil servant that defends the values that CHC are based on” R. J
“I have never thought that I should fulfill the goals from the State. I am here for the children’s sake. Every child has a right to get vaccine and I am truly here to make sure that they get it” R. L

Some motivating strategies also reflects that not only are there societal benefits with vaccines but also that the respondent is a spokesman for Society.

“To live here [suburb with lower coverage] is a risk in itself/ so we want that everyone should have the same protection because here it is a real risk of getting infected. I guess that is herd immunity I use then in one way...” R. L

“They don’t understand that it is the taxes that pays for the vaccines / I say as an argument that we aren’t vaccinating for every disease and it takes long time before we decide which disease we are going to vaccinate against because it is very costly and that it is our tax money that pays” R. H

Furthermore, the respondents highlighted the dilemma that they, as a representative for the Swedish health authorities, in other occasions are obliged to report parents if the parental decision would infringe on what was best for the child.

“It is troublesome, because they decide for the child and one can wonder what they say when they turn 18 and want to go traveling/ but had it been some medical issue, that the child would need medicine to be well and the parents would have said no then we would have reported it to the social welfare office. It is frustrating” R. A

Whether the respondents saw themselves as a servant for the State or the child seemed to be of lesser importance in regard to their perceptions of the benefits with the since long included vaccines. When it comes to the introducing of new vaccines, there was more hesitation. Some questioned on what grounds the Rotaviral vaccine is introduced and considered the benefit of the vaccine to be of lesser importance since the infection is not correlated to high mortality rates in Sweden. Some suspected that the reasons for introducing the vaccine are merely based on economic grounds and it was seen as a not good enough reason.

“There is a bigger resistance among us providers to vaccinate against non-life threatening diseases. In Sweden a gastro enteritis isn’t that dangerous so that we have to vaccinate against it and if the intentions are merely economical, many of us are sceptic. It is expensive to stay home when they are sick and to have them admitted in
hospital but if you aren’t chronically ill, a child doesn’t have to be admitted if the parents would have made sure to give them water. We are vaccinating against troubles on another level. Sure, the child is suffering for a week or so but that is a part of life”  
R. I

But the advantages with the Rotaviral vaccine could also be appreciated.

”Well, benefits... It’s surely that people can work more and reduced pressure on the hospitals and I guess that is a good thing that people don’t sit there and infect each other with germs” R. G

When it comes to Rotaviral vaccine and parental decision right, reflections also differ from findings connected to the older vaccines.

“It will be different with the Rota vaccination, a bit tricky because I sense that it is being introduced in a way that we should ask the parents if they want it. Obviously we ought to do that with all vaccines but in a way this lies a bit aside of the regular programme. People are afraid of new vaccines so, well, I guess we have to point out that it is voluntary” R. C

”With the Rota it’s not the same...how should I put it ...life-saving situation here in our context in Sweden as it is in other countries. If one refrains from this kind of vaccination I think it is another thing” R. B

How the respondents will deal with these reflections when they motivate parents is yet to be revealed since the introduction of the Rotaviral vaccine is launched parallel to the producing of the present thesis.

One respondent compared the older vaccines with the H1N1-vaccine which illustrate the inner dilemma when own beliefs contradict guidelines from the authorities.

“I remember the swine flu. I was indeed not positive regarding that vaccine and I didn’t vaccinate anyone in my family. That felt troublesome during that mass vaccination and I couldn’t really say what they [parents] should do” R M
DISCUSSION

The nurses and physicians interviewed in this study do experience ethical dilemmas when motivating a parent who hesitates to vaccinate their child. The motivating strategies differ and are adjusted to the reasons the parents declare for the hesitation.

Result discussion

The respondents’ descriptions of parental reasons for hesitation are partly congruent with earlier research such as; *religious beliefs or Life Stance* (Ruijs, Hautvast, van IJzendoorn, et al., 2012; Duffell, 2001; Stockholms Läns Landsting, 2013a); *mistrust for authorities* (Nan et al., 2014, Jolley & Douglas, 2014); *fright* (Brown et al., 2010) and *Knowledge level* (Zimmerman et al., 2005; Brown et al., 2010) and *Influence by closely related persons* (Brown et al., 2010). It is clear that scare for MMR is still present. *Firm refuses* might be reflecting that parents do not want to explain underlying reasons or that they actually do not have well-funded reasons.

Two more specific cases of hesitating parents have not been able to be found in previous literature. The first is that the influence by the narcolepsy event following H1N1-massvaccination has amplified vaccination fears. The second falls under the category *Influence by closely related persons* and consisted of families where the father was the hesitant parent which was described by several respondents.

The fact that vaccine providers act as important sources for information and that they have impact on the decision to vaccinate or not have been discussed in earlier findings (Simone et al., 2012). Strategies aiming to raise knowledge to an informed decision through extended information are congruent with the instructions to vaccine providers from the National Board of Health and Welfare (Socialstyrelsen, 2008) that highlight the importance of unbiased information and risk negotiating. Since internet is a frequent source of information for parents, and the fear of MMR-vaccine is still present as well as mistrust for medical authorities thorough informing with reliable sources, as is done by the respondents is an important core strategy and also congruent with provider instructions (Socialstyrelsen, 2008).

When informing about collective benefits of high coverage combined with the information that there is high coverage at the moment, one respondent was afraid that would give the hesitant even more reasons to opt-out, i.e. free-riding. Earlier findings partly support this (Cohen et al., 2013) as well as findings in the present study. However, findings by Parker et
al. (2013) indicate that free-riding is considered consciously only by relatively few people, which makes game-theoretical fear ambiguous.

The strategies of social interaction to build trust with the parents is congruent with earlier findings by Mollema et al. (2012) and is also in line with the strategies suggested by Leask et al. (2012) and Fernbach (2011). The commonly used strategy to refer the parents to a pediatrician for extended medical information could be seen as a way for the nurses to still keep a good relationship in order to keep the possibility to supervise the child in other matters. This also increases the parents’ possibility to make a well informed, rational decision. The use of emotional strategies have also been shown in earlier findings by Leask (2009) and could imply that the respondents adopt the role as persuader rather than informer.

Motivational strategies using mediating processes are partly congruent with the provider instruction to use risk negotiating (Socialstyrelsen, 2008). Strategies dealing with the families with internal conflict regarding the vaccination decision will be analyzed further down.

The perceptions of vaccine benefits ranged from strictly societal to individual and reflects that the dilemma between society versus individual (Dawson, 2004) is present in the clinical context. Based on the pragmatic assumptions that herd immunity is perishable and unreliable the respondents think it is important that everyone should be vaccinated both for individual and societal benefits, despite established herd immunity. This is in line with the suggestion by Fine et al. (2011) since the coverage is fluctuating depending on location and time (Hedbäck, 2002; Smittskyddsinstitutet, 2003). There is no guarantee for hundred percent protection for the individual even with vaccine which makes high coverage benefit everyone (Cohen et al., 2007; Defay et al., 2013; ECDC, 2013); and also that a rapid decrease in coverage will strongly increase the risk for disease outbreak (Knol et al., 2013). The use of increased risk when traveling was a common reported strategy by the respondents, and traveling indeed bring risk for infections. One need not go far away since outbreaks have occurred in European countries such as France and Spain (ECDC, 2013; Plans, Torner, Godoy, & Jané, 2014) but also in closer areas in Sweden (Stockholms Läns Landsting, 2013a).

Wood-Harper (2005) argues that healthcare workers should integrate arguments relating to the wider-reaching consequences for society when discussing immunization with vaccine hesitant parents. This is done by the respondents when informing about collective benefits of herd

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immunity as well as ideological motivating. How effective this strategy will be, is however disputable. Findings by Betsch et al. (2013) do indicate that it could be a successful strategy to reduce free-riding in an experiment setting. Parker et al. (2013) on the other hand, found that free-riding is considered consciously only by relatively few people. Findings by Quadri-Sheriff et al. (2012) and Brown et al. (2010) indicate that benefit to others is rather a bonus than a main reason to vaccinate the child. Furthermore Brown et al. (2010) found that vaccine-DECLiners viewed it as an unwelcome obligation to protect others.

One respondent described how the topic of social benefits were present in parental group discussion and since peer pressure and social bolstering seem to be an important sources of influence for parental hesitation (Parker et al., 2013), this strategy could possibly be successful. Present findings illustrate that peer-influence is in fact prevalent among hesitant parents and important to take into consideration when motivating hesitant parents.

Ideological reasoning from a justice perspective reflects utilitarian perceptions that the possible consequences of eradication and control of diseases, motivates that everyone continues to vaccinate despite established herd immunity. In order to achieve these outcomes perceptions also reflect a communitarian stance when the solidarity principle is referred to. The perception that parental decision right is a value that overruns the importance that everyone should vaccinate reflects a more libertarian stance (Beauchamp & Childress, 2013).

One respondent applied the “What if everyone did that?”-test (Menzel, 1995) on the action of opting out and concludes that the coverage would not be as high as it is if everyone would opt out and in this lay the importance that everyone would vaccinate despite established herd immunity. This makes the action selfish which is also a perception that was found among the parents that were interviewed by Brunson (2013). The findings do imply that the respondents give different ethical principles priority over one another.

Ideological based perceptions reflected in the strategies in two different ways. The respondents are using positive value loaded words “It’s a good thing that everyone gets vaccinated” but avoid from using negative value loaded words “It’s selfish to opt-out”. These strategies could be paired with the strategies of building trust and avoiding blame. It is not farfetched to believe that the use of the motivational argument that opting-out is selfish would induce feelings of blame and could be contra productive. But in the light of the findings by Brown et al. (2010) that vaccine-DECLiners viewed protecting the community as an
unwelcomed obligation, any strategy reflecting this can possibly decrease parental intention to vaccinate.

The perception that parental decision right as valuable is congruent with provider guidelines (Socialstyrelsen, 2008) and the Swedish foundations for public health politics that highlights the importance of the individual’s integrity and freedom of choice (Riksdagen, 2008). Hesitant parents are always informed that vaccination is voluntarily if discussions occur and respect for this is shown in more or less active ways. When promoting the vaccine program at admittance to CHC to _every_ family some respondents adopt a presumptive approach by not explicitly pointing out that vaccination is voluntary. Some respondents feared that explicit information about the voluntariness would give parents even more reason to opt out could indeed be a reasonable based on the findings by Opel et al. (2013): Intentions to vaccinate did indeed decrease if the vaccine provider used a participatory approach rather than a presumptive approach. This could support game-theoretical reasoning but does not support parental decision right since you need full information in order to make an autonomous choice (Beauchamp & Childress, 2013).

It is clear that the respondents believe parental decision right is connected with the exclusive responsibilities that parenthood brings. Findings also imply that strategies aim to stress that the responsible thing to do is indeed to vaccinate the child.

Despite perceived parental decision right as valuable the respondents do question it when they experience a dilemma based on their conviction of the benefits with vaccine. To some extent, the comparison to other situations when they have the possibility, or even are obliged, to report the parents to the social welfare office in the case that the child is in danger, is reasonable. The dilemma lies in that admittance to CHC is voluntary yet the parents can be reported. But, although the unvaccinated child is indeed put at risk for contracting lethal diseases, vaccination is a preventive intervention and the child can not only very well go through life without contracting disease but also without having been exposed for the risk of side effects i.e. exposed to ethical costs.

When it comes to the since long included vaccines, the respondents are convinced that the benefits of these overrun the costs which differ in some extent with earlier findings that reported more ambivalent perceptions among health care professionals (Simone et al., 2012).
Whether they perceive themselves as a servant of the child or of the State seems of lesser importance since both perceptions are connected to inner motivation of promoting these vaccines and also a perceived responsibility to do so which is congruent with earlier findings (Mollema et al., 2012).

The respondents are more ambivalent regarding the Rotaviral vaccine which could imply that the respondents experience inner dilemma and conflicts of duties since they do act as representatives for Swedish medical authorities. The reason for hesitation that the infection is lesser severe is congruent with the findings by Gilca et al. (2009) whose respondents also questioned the vaccine based on vaccine safety. This was however was not mentioned by the respondents included in the present study. Instead their hesitance was based on the perception that the intentions behind the launching are based on economic grounds and this is seen as a not good enough reason.

Findings also indicate that it seems of more importance to inform every parent about voluntariness connected to Rotaviral vaccine which could possibly reflect the inner ambivalence on the benefits with this vaccine, perceived by the respondents.

**Discussion of the results from an ethical point of view**

The findings in this study show how respondents’ perceptions are being reflected in their motivating strategies. The following section will discuss some of the perceptions and strategies from an ethical point of view. The aim is not to judge whether a strategy is right or wrong but to reflect on how different agents are protected by the use of different strategies to detangle which strategy might be the most plausible one if one agent are all too threatened.

The analysis takes its starting point with the principle of *beneficence* and Beauchamp and Childress’s (2013) definition of *utility* that requires agents to balance benefits, risks, and costs to produce the best overall result. Chosen agents whose interests need protection, are illustrated in Figure 1; The Child, the Parent and Society (Public Health).
Despite that benefit/cost ratio is changing depending on coverage, the analysis holds the view that the child benefits from the vaccines included in the programmes. The costs i.e. risk for side-effects are small contra the risk of contracting a preventable disease and the consequences following the same (Netterlid, Månsson, & Håkansson, 2009; Vanlander & Hoppenbrouwers, 2014).

From a societal point of view vaccine is a cost-effective and safe mean to prevent deaths and illness world-wide (WHO, 2013b; WHO 2013a). To achieve high vaccination coverage is set to be of high value for society.

A starting point is also that guidelines from medical authorities based on scientific research are the most reliable sources of information and base for included vaccine recommendations of today. The parents´ autonomy needs protection as they act as proxies and decides for the child. It is the final decision that needs respect irrespective of whether the child will be vaccinated or not.

Some of the revealed perceptions and strategies that at first sight seem to be heavily weighing to benefit one agent over the other will hereby undergo analysis in order to detangle whether these are the most ethically plausible ones in the clinical context. The analysis regarding autonomy will be based on definitions by Beauchamp and Childress (2013, see above). Analysis of motivating strategies will also be based on the discussion by Rossi and Yudell

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6 However, Menzel (1995) high lights that societies ought to be sensitive to that the scientific case is only `decent guess work´ and hardly a heavy preponderance of evidence. But also that we have very good reason to think that parent´s refusal exposes their child to greater risks.
(2012) although this refers to communication of health and risk on population level but will here be applied on individual level.

The use of social interaction and emotional arguments
The different strategies are more or less persuasive. The use of strategies that appeal to emotions can at first sight seem manipulative and problematic from an autonomy perspective. But based on definitions by Rossi and Yudell, (2012) and Beauchamp and Childress (2013) it is only when influence is controlling that autonomy is threatened and the strategy counts as manipulative. Appeal to emotions in combination with adequate and correct information, as is done by the respondents, is thus not manipulative.

Parental decision right versus the child
One strategy that clearly protects the interest of the child is using the argument that giving only single vaccines and postpone vaccination would lead to more suffering for the child. From the principle of beneficence this could be a relevant reminder for the parent whose intention is to do good for the child. To actively refuse to meet the parent’s wishes to postpone the shots, not only threatens the parental autonomy but could also possibly lead to that the family swaps CHC and the nurse will thereby loose her supervision of the child in other matters.

Game-theoretical reasoning
As studies show (Cohen et al., 2013; Parker et al., 2013; Betsch et al., 2013) peoples’ intentions to vaccinate are affected by the information they are given, and depend on if individual or collective benefits are promoted, which makes game theoretical reasoning relevant. Findings show ambivalent perceptions regarding to what extent individual benefits of herd immunity ought to be communicated and to explicitly point it out was, although rarely, avoided with the intention not to give the hesitant parent one more reason not to vaccinate. The child and society will benefit from this strategy if the final decision end up with the child being vaccinated but the autonomy of the parent is threatened. A more neutral strategy is also used, i.e. to simply explain the causal link between coverage and protection/risk without high lighting neither individual nor societal benefits. Thereby it is up to the parents to balance the pros and cons and make an autonomous choice.

Religious beliefs
The respondents perceive parents’ religious beliefs as irrelevant and viable reason for hesitation, which reflects a respectful attitude, which is congruent with earlier findings by
Ruijs, Hautvast, van IJzendoorn, et al. (2012). One respondent expressed that she felt that it could be seen as a mean action to “puncture religious obstacles” by making sure that the vaccines are halal. But opposite to mean, one can also see this strategy i.e. to investigate what religious obstacles are in order to be able to remove these, if that is possible, as indeed an act that fully respects religious beliefs and thereby a strategy that respects autonomy both by attitude and action, as was required for autonomous choices to be fully respected by Beauchamp and Childress (2013).

Hesitant father
The findings that people are influenced by closely related persons have previously been found in the literature Parker, et al. (2013). But, in this study several respondents described families where the hesitant parent which has not been found this explicitly in previous literature and thus, no corresponding strategies. Since interview studies are not suitable for quantification or statistical analysis of results no such attempt is made here. But, since as many as five respondents spontaneously described families where the hesitant parent was the father it is a noteworthy finding. This could of course be completely by coincidence but could also reveal a not yet seen phenomenon that needs to be addressed. Up till this point, the caregivers have been named as “the parents” and referred to as one agent, but these findings clearly reflect how there can be more than one person involved and whose interests contradict the other’s.

In some cases, the situation was solved by the mother herself by simply giving her consent to vaccinate the child without the father’s consent whose autonomy then was overrun by the mother.

One motivational strategy described was to actively support the parents to make a unified decision, regardless what the outcome might result in, i.e. vaccinated child or not. Hereby the autonomy of the parents is fully respected whatever decision they make.

Another motivational strategy described, was sending the parents to a pediatrician on the pretext that the abroad born child needed to undergo extra check-ups since the feeling was that the already positive mother “could be won over”. This could be a way of empowering the mother to take charge and vaccinate the child against the father’s wish or to give her arguments to motivate him herself. But, since the strategy intentionally is using influences that is not obvious to the parents, and thereby bypasses their capacity for reason, it could be all too manipulative and infringe on the autonomy of both parents in a less plausible manner (Rossi & Yudell, 2012; Beauchamp & Childress, 2013).
The respondents’ do take into consideration ethical principles such as autonomy, beneficence and justice when motivating hesitant parents, although not always as explicitly expressed as suggested by Fernbach (2011).

**Methodological discussion**

*Credibility and trustworthiness*

The findings have not been confirmed by the respondents. This could have increased the credibility of the results (Denscombe, 2009; Graneheim & Lundman, 2004). The analysis would possibly have resulted in different results if two sets of eyes would have joined in the task (Lantz, 2007). The revealed strategies are solely the respondents own descriptions of how they motivate hesitant parents, and could be questioned in regard to how the motivation actually is being done. One way to increase the credibility would be to use observations of real encounters (Opel et al., 2012; Opel et al., 2013).

Since the general vaccine coverage in Sweden is high, it is important to high light the fact all respondents pointed out during the interviews – they very seldom meet hesitant or refusing parents. In order to capture motivating strategies the respondents were asked to retell specific situations from the past when motivating refusing parents. In this way data are of anecdotal character and some categories reflect content from only one or two respondents.

This study does not intend to quantify number of strategies or perceptions, nor does the methodology support this, but the purpose was solely to explore the field. This lead to that some categories are consisting of a limited number of meaning units and this reflects that some perceptions or strategies differ from the more common ones reflected in categories consisting of meaning units from a larger number of respondents. Despite this, the author perceived that theoretical saturation (Strauss, 1987) was achieved after fourteen interviews, since many strategies and perceptions became reoccurring the more interviews that were performed. The main task was to find out how the respondents deal with the dilemmas when motivating parents in the clinical setting. It could however be argued that inclusion of more respondents would have resulted in more categories than the ones that occur among the findings.

*Transferability*

Selection bias; fourteen respondents were included in this study. It can be argued that the respondents who wanted to participate differ from the ones that declined participation. Maybe the participants are more comfortable with verbally expressing their thoughts and opinions,
maybe their attitudes regarding the benefits of vaccines and hesitant parents differ from the ones who are not included in this study.

Since CHC are primarily run by nurses who are the main providers of vaccine to children and thereby do the lion’s share of the motivation to vaccine hesitant parents, the ratio 12 nurses/2 physicians is reflecting the general context in Sweden. It could be argued that the fact that hesitant parents are often referred to a pediatrician for extended medical information and motivation, before making the final decision, inclusion of a larger number of physicians would be relevant. Despite this, the general opinion during the sampling of respondents was that this was in fact not relevant and not many physicians were interested in participation.

The findings can be applicable in societies similar to the Swedish context where vaccination is voluntary and widely accepted by the general population. The sampling was done to serve this thesis’ purpose and not completely randomly. The intention with the inclusion of respondents from the areas with low MMR-coverage within a specific ethnic group was not to map how this specific situation is handled. The research questions are of general character and the strategic inclusion from this area was done with the intention to include respondents who more frequently meet hesitant parents to increase the possibility of rich and detailed data since it is in fact not common that parents are hesitant. However Graneheim and Lundman (2004) points out that inclusion of respondents with various experience gives the possibility to shed light on the research questions.

One difficulty in exploring perceptions and strategies is that data reflects what is expressed explicitly. In some occasions the respondents had no underlying reason not to use certain strategies, for example to use or not to use the motivating argument that an unvaccinated child can transmit disease to unprotected. Thereby the results reflect in most cases the active strategies that are being used. During the interviews it was acknowledged by some respondents that arguments like the one above, in fact could be used as a motivational tool and this might have given the respondents new insights.

**Dependability**

Since the interview guide was to some extent revised after the first four interviews, the dependability could be questioned (Graneheim & Lundman, 2004).

**Reflexivity**

The author of this thesis, I, am a registered nurse with experience from caring for adult patients who contracted an acute infectious disease. I have limited experience from pediatric
health care or vaccine provision. When discussing the subject with colleagues and friends before the study was performed, it became apparent that non-vaccinating parents do arouse strong feelings and that many perceive an act of opting out, to be morally questionable. This has probably influenced the research questions and interpretation of the findings, but in what extent is hard for me to tell.

During the interviews I did my very best not to influence the respondent in situations where I felt sympathy or antipathy by their perceptions or chosen strategies. Despite this, it is unavoidable that the respondents was in some extent influenced by the socio emotional interaction that is unavoidable during interviews (Hansagi & Allebeck, 1994; Lantz, 2007).

**Conclusions**

The findings from this study reflects that the public health dilemma is indeed present in the clinical context when motivating vaccine hesitant parents. Respondents do their utmost to aid the parents to a well informed decision, regardless if the child will be vaccinated or not, or whatever reason parents have for hesitance. Some strategies are more persuasive than others and in rare occasions infringe on parental autonomy in a less plausible manner. Since vaccination is a voluntary action that is required from many to reach herd immunity, vaccine providers need to consider the ethics surrounding motivating hesitant parents to reach best possible outcome regardless if this is benefitting the child, society or parental autonomy.

**Clinical implications**

Although vaccine coverage in Sweden is high, hesitating and refusing parents still exist and not every child is being vaccinated. The vaccination programmes are voluntary and will so be in a foreseeable future. This puts a heavy load on the vaccine providers, primarily nurses that are facing hesitant parents and dealing with the dilemmas presented in this thesis. At present, the programmes have high confidence from the public, reflected in the high coverage. But, as have been shown in the past, this can easily be turned around followed by sudden decrease in coverage.

Suggested further research would be studies that to gain more knowledge on: how hesitant parents perceive the motivating strategies they meet at CHC; how the adverse event of narcolepsy following H1N1-flu mass vaccination have affected parents and; it could be of interest to investigate how parents perceive the introducing of the Rotaviral vaccine.

The results from this study, can hopefully act as a supportive guide in the everyday work of nurses and physicians that do the important work of motivating vaccine hesitant parents.
As a last remark I would like to thank all the respondents that made this thesis possible. It was a pleasure interviewing you and I got new insights from every one of you. Hopefully this work can assist you in your continuing work when motivating vaccine hesitant parents. Thank you all.

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7 From January 1 2014 Smittskyddsinstitutet is integrated in the newly established Folkhälsomyndigheten.


Appendix 1 – Intervjuguide

INTERVJUGUIDE

1) Vilka associationer får du när du tänker på flockimmunitet och barnvaccinationer?

2) Vad ser du som det viktigaste skälet till att vaccinera sina barn?

3) Hur introducerar du frågan om vaccin med föräldrar?

4) Pratar ni om att det är frivilligt? Hur?

5) Hur ser du på föräldrar som inte vill vaccinera sina barn?
   5a) Hur agerar du när en förälder är tveksam till att vaccinera sina barn?
   5b) Använder du flockimmunitet för att motivera tveksamma föräldrar?
   5c) Varför/varför inte?

6) Kommer du ihåg någon specifik situation där du pratat om flockimmunitet med föräldrar som varit tveksamma till vaccination? – Berätta gärna!

7) Föräldrarna kan ha olika skäl eller intentioner till varför de inte vill vaccinera sina barn t.ex. religiösa, antroposofiska, rädsla för biverkningar, okunskap om att sjukdomarna är farliga och fortfarande existerar eller att de förlitar sig på att andra föräldrar vaccinerar sina barn.

   Spelar föräldrarnas typ av skäl eller orsaker till att inte vaccinera barnen, någon roll för hur du agerar eller resonerar? Finns det några av dessa orsaker som gör dig mer eller mindre villig att övertyga?

8) Givet att flockimmuniteten är etablerad; Är det ändå lika viktigt att ALLA barn vaccineras?
   8a) Varför?
   8b) Men om inte
   **Om det behövs:** Har du funderat något kring att det kan finnas en problematik kring att ovaccinerade barn får skydd tack vare att det så många som faktiskt är vaccinerade. Alltså att man kan dra nytta av flockimmuniteten utan att självl vaccinera sig?

9) Pratar du någonsin med föräldrar om att om deras barn är vaccinerat så kan det bidra till att skydda oskyddade barn? Varför/varför inte?

10) Hur förhåller du dig till dilemmaet mellan föräldrarnas rätt till att bestämma och statens mål att ha hög vaccinationstäckning?

11) Hur ser du på din roll i förhållande till folkhälsoarbetet i Sverige?


13) Har du något som du vill tillägga?
Appendix 2 - Informationsbrev till Verksamhetschefer

Hej!

Jag skriver till Dig för att be om tillstånd att tillfråga sjuksköterskor och läkare från din enhet om de vill delta i en intervjustudie om attityder och etiska resonemang kring flockimmunitet och barnvaccinationer.


Det skulle vara önskvärt att intervjuar två sjuksköterskor och två läkare från Er enhet.

Intervjuerna beräknas ta ca 30-45 minuter, är frivilliga, kommer att ske enskilt, spelas in och skrivas ut ordagrant. All information om informanterna kommer att vara konfidentiell och endast jag kommer att ha tillgång till den. Resultaten kommer att presenteras i form av en uppsats om 30 hp som avslutande examensarbete i Masterprogrammet i Folkhälsa vid Institutionen för folkhälso – och vårdvetenskap, Uppsala Universitet.

Som med alla examensarbeten är tiden knapp och målsättningen är att uppsatsen skall examineras 2 juni så jag är väljigt tacksam om svar kan ges med vändande post.

*Med vänliga hälsningar!*  

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Appendix 3 – Informationsbrev till respondenter

Läkare och sjuksköterskor sökes för deltagande i intervjucordie om attityder kring flockimmunitet och barnvaccinationer

Under mars 2014 kommer en intervjustudie att genomföras med läkare och sjuksköterskor från barnavårdscentraler inom Stockholms Läns Landsting. Syftet är att belysa om och hur flockimmunitet används som ett motiverande verktyg i samtal med föräldrar som är tveksamma till att vaccinera sina barn. Det övergripande syftet är att diskutera det etiska dilemma som föreligger mellan individens rätt till självbestämmande och samhällets mål med hög vaccinationstäckning.


Intervjuerna beräknas ta 30-45 minuter, kommer att ske enskilt på en plats som passar Dig och spelas in och skrivs ut ordagrant av mig. All information om Dig som deltar kommer att behandlas så att ingen obehörig kan ta del av den. Analysmetod kommer att vara innehållsanalys och resultaten kommer att presenteras i form av en uppsats om 30 hp som avslutande examensarbete i Masterprogrammet i Folkhälsa vid Institutionen för folkhälso- och vårdvetenskap, Uppsala Universitet.

Dina erfarenheter och uppfattningar är värdefulla och jag är tacksam om Du väljer att delta i studien. Deltagandet är helt frivilligt och kan avbrytas när som helst. Är Du intresserad av att delta eller har frågor kring studien, tveka inte att höra av dig, helst med vändande post!

Med vänliga hälsningar!
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Samtycke

Härmed godkänner jag efter att ha läst och ställt eventuella frågor, är införstådd i ovanstående och ger mitt godkännande för deltagande i intervjusstudien om barnvaccinationer.

Stockholm den

Deltagare