

## Session 9. Infectious Diseases

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### Overview

Infectious diseases present unique ethical dilemmas in which a child may be both a patient and a vector for disease. As such, patient-level decisions may have broader implications for public health. Physicians must strive to work with families to ensure the best interest of the child is being met while also considering the health of the community.

Two common issues related to the ethics of pediatric infectious diseases are vaccine refusal and antibiotic demand. Vaccine refusal stems from a variety of reasons, but in most cases, the parents believe that they are acting in the child's best interest. Vaccine refusal should lead to a thorough parent-physician discussion of the risks and benefits of immunization for the child as well as the risks and benefits in the context of the family and larger community. Antibiotic demand also typically arises from a parent's desire to promote the child's well-being. Nonetheless, physicians are professionally obligated to refrain from providing antibiotics when they are not clinically indicated. Not only does this promote the medical best interest of the child, but in the case of antibiotics, it may also curb the development and spread of multi-drug-resistant organisms (MDROs) in the population.

In any clinical situation, parents and physicians generally both seek the best interest of the child/patient. When differences of opinion occur, physicians should remember that their first obligation is to the child. Tensions may arise for the physician when dealing with patients with infectious diseases, because the risk to others and to public health must also be considered.

### Instructor's Guide

- Case Summary
- Alternative Cases
- Learning Objectives
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- Case Discussion
- Conclusions and Suggestions

## Case Summary

A 12-month-old boy presents for a well-child visit with his mother. He is a new patient and you review with the mother the vaccines that are recommended at this visit. The mother agrees to all vaccines, except the measles-mumps-rubella (MMR) vaccine, citing the low incidence of measles in her community. She has also heard rumors that the MMR vaccine causes autism. The boy is an only child who does not attend child care. The family has no plans to travel or to receive foreign visitors.

After a thorough discussion, the mother agrees to give the MMR vaccine at 4 years of age, prior to school entry.

- Why do parents refuse vaccines? Should refusals be permitted?
- Why are parents more likely to refuse the MMR vaccine?
- What is the difference between refusal and delay?
- What if this child's community were in the middle of a measles outbreak?
- What is your duty as a physician to public health?
- Under what circumstances, if any, should you discharge the patient from your practice?

## Alternative Case

1. A 6-year-old girl presents with cough, rhinorrhea, and a sore throat. The child has no underlying medical problems, and the physical examination is only notable for a mildly erythematous throat with no exudates. A few small posterior cervical lymph nodes, but no anterior cervical lymph nodes, are palpable. You suspect a viral etiology and recommend supportive care. The mother demands treatment for a bacterial pharyngitis. You agree to do a rapid strep test, the result of which is negative. The mother still demands antibiotics, stating that her child has had multiple episodes like this in the past and she only gets better once antibiotics are prescribed.
  - What is the current state of antibiotic prescribing practices in the United States?
  - What is your duty as a physician to antibiotic stewardship?
  - How are the 2 cases similar?

## Learning Objectives

1. Understand the limits of parental autonomy in the context of vaccine refusal and antibiotic demand.
2. Examine the tension between the physician's obligations to individual patients and to the community.
3. Recognize the duty of the physician to public health and stewardship.

## **Suggested Reading for Instructor**

Diekema DS; American Academy of Pediatrics, Committee on Bioethics. Responding to parental refusals of immunization of children. *Pediatrics*. 2005;115(5):1428-1431. Reaffirmed May 2013

American Academy of Pediatrics, Committee on Infectious Diseases. Infection prevention and control in pediatric ambulatory settings. *Pediatrics*. 2007;120(3):650-665

American Academy of Pediatrics, Committee on Practice and Ambulatory Medicine, Council on Community Pediatrics. Increasing immunization coverage. *Pediatrics*. 2010;125(6):1295-1304

Edwards KM, Hackell JM; American Academy of Pediatrics, Committee on Infectious Diseases, Committee on Practice and Ambulatory Medicine. Countering vaccine hesitancy. *Pediatrics*. 2016;138(3):e20162146

American Academy of Pediatrics, Committee on Practice and Ambulatory Medicine, Committee on Infectious Diseases, Committee on State Government Affairs, Council on School Health, Section on Administration and Practice Management. Medical versus nonmedical immunization exemptions for child care and school attendance. *Pediatrics*. 2016;138(3):e20162145

## **Further Reading**

Offit PA. *Deadly Choices: How the Anti-Vaccine Movement Threatens Us All*. New York, NY: Basic Books; 2011

Mnookin S. *The Panic Virus: A True Story of Medicine, Science, and Fear*. New York, NY: Simon & Schuster; 2011

The White House. National Action Plan for Combating Antibiotic-Resistant Bacteria. March 2015. Available at:  
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The President's Council of Advisors on Science and Technology. Report to the President on Combating Antibiotic Resistance. September 2014. Available at:  
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## **Case Discussion**

### ***Why do parents refuse vaccines?***

Parents refuse vaccines for a variety of reasons, and it is important for the pediatrician to assess what those reasons are. Some parents refuse on religious or philosophical grounds, while others believe the risks of vaccination outweigh the benefits.<sup>1,2</sup> Because parents' choices may be based

on misinformation, pediatricians have a responsibility to provide accurate, evidence-based information on the topic.

***Should parents be allowed to refuse vaccines?***

Parents have a duty to promote the well-being of their child. This responsibility includes maximizing benefit while minimizing harm. Parents are free to choose how and when medical care is provided to their child, unless there is significant, imminent risk of substantial harm.<sup>1</sup> To determine whether significant risk exists, one must consider the likelihood of contracting the disease if unimmunized, which depends on the communicability of the disease and the prevalence of the disease in the community. Additionally, one should consider the potential harm to the patient if he or she were to become infected.

Measles is a highly contagious infection that can result in debilitating and potentially fatal complications.<sup>3</sup> However, the acute risk of infection to the unvaccinated healthy child in a well-immunized community is relatively low, and in a well-resourced country like the United States, many of the risks from the disease can be mitigated most (but not all) of the time. As such, outside of a major epidemic, a parent's decision in the United States to refuse measles vaccination (or to delay it) may not be the best decision but fails to reach a threshold level of abuse or neglect. In this case, the parents should be allowed to exercise their right to make medical decisions for their child.

***Why are parents who are compliant with other vaccine recommendations more likely to refuse the MMR vaccine?***

In 1998, British physician Andrew Wakefield published a study in *The Lancet* that suggested there was a link between the MMR vaccine and the development of autism. Although the study was later retracted by the journal, and Wakefield was eventually barred from practicing medicine in the United Kingdom after findings of ethical misconduct in research related to the study, the influence of the study on public opinion persists. Several large multimillion dollar studies provide further evidence to refute Wakefield's claim,<sup>4,5</sup> and yet the association continues to be promoted by some parent groups and celebrities.<sup>6</sup>

***What is the difference between vaccine refusal and delay?***

Vaccine refusal is the decision by a parent not to give a child a particular vaccine or not to vaccinate at all, whereas delay is the decision to give permission but only at an age later than that recommended by professional bodies like the Advisory Committee of Immunization Practices of the Centers for Disease Control and Prevention (CDC) and the American Academy of Pediatrics (AAP). Parents may choose to delay vaccines on the basis of misinformation, as noted in the case of MMR vaccination and autism, or the mistaken belief that it reduces the potential rare risks of vaccination. The latter is a misunderstanding of vaccine science, the timing of which is based on a balance between risk of disease and likelihood of developing immunity.

Immunizations are given in infancy for certain diseases, such as pertussis, *Haemophilus influenzae* type b (Hib), and pneumococcal disease, because infants are at risk for these infections and are able to mount an effective immune response to these particular vaccines. Delaying vaccines like Hib until after 1 year of age fails to protect the child from the risk of infection at a time when he or she is most vulnerable. Vaccines for other diseases, such as measles and varicella, must be delayed until at least 1 year of age, because even though younger infants are at risk, they do not develop effective immunity. Vaccine delay after a child is able to

mount an effective immune response is inadvisable, because it unnecessarily exposes the child to the risk of infection.

The risk to the child of vaccine delay is increased if the child is cared for in a group setting like child care, where there may be other children who have not been vaccinated because of age, medical contraindications, or parental refusal. Even in the child who does not attend group child care, vaccine delay is problematic, because the child may still go to a playground or amusement park where infected individuals may be present. The unvaccinated child who becomes infected also poses a risk to other children, because he or she may unknowingly be contagious before symptoms appear. In addition, vaccines are studied for safety and efficacy based on a vaccine schedule. Efficacy and safety in vaccinating “off schedule” is untested.

***What if this child’s community were in the middle of a measles outbreak?***

The role of community is important when considering the risk of vaccine refusal to the individual. In an area with low MMR vaccination rates or an active measles outbreak, compared with a well-vaccinated community without active disease, the risk to an unimmunized child of contracting measles is considerably higher. This risk must be taken into account when deciding whether a parent’s refusal to vaccinate is in the best interest of the child.

***What is your duty as a physician to public health?***

First and foremost, a physician’s duty is to the patient. However, as a member of the larger community, the physician also has an obligation to public health. Fortunately, a decision made in the best interest of the patient is often also in the best interest of public health. For example, ensuring that patients are immunized not only decreases the risk of disease to that individual but also creates herd immunity for those patients who are too young or who have medical contraindications to vaccination.

Respect for patient (parent) autonomy is challenged when others are placed at substantial risk of serious harm because of the actions of the individual. Although refusal of routine vaccinations does not typically meet this harm standard, an individual’s right to refuse may be restricted in epidemic situations or in the case of diseases with severe morbidity and mortality (such as smallpox) when an effective vaccine exists.<sup>1</sup> The physician, in collaboration with the parents, has a duty to weigh the risks and benefits of decisions that may affect both the individual and his/her community.

Furthermore, parents who refuse to vaccinate their children often do so with the knowledge that there is a low incidence of disease in their community—made possible by *vaccinated* individuals. These so-called “free-riders” are benefiting from a public health landscape to which they did not contribute. Highlighting this fact to the parents and urging them to consider their obligation to their community is an important function that physicians can perform in promoting public health.

***Under what circumstances, if any, should you discharge the patient from your practice?***

In general, physicians are discouraged from discharging patients from their practice.<sup>7</sup> Respect for the parental right to make decisions that the parent views as in the best interest of their child is an important element of the physician-family relationship. Although the physician may not agree with the parent, building a trusting relationship with the parents is essential to ensure the child has access to good medical care.

In limited situations in which the physician feels strongly that trust cannot be established with the parents, then the physician is not obligated to continue the relationship. However, the physician must ensure that the patient is transitioned to another appropriate care provider.

Assuming that the physician does not dismiss a family for refusal to vaccinate, and remembering his or her duty to other patients, the physician should establish infection-prevention strategies within the clinic to protect patients from spread of disease.<sup>8</sup> In addition, the physician should continue to promote vaccination. The AAP has recently published a statement that discusses strategies to overcome parental hesitancy of vaccines.<sup>7</sup>

### ***What is the current state of antibiotic prescribing practices in the United States?***

Arguably, the discovery of penicillin, and the subsequent antibiotic development boon, was one of the most health-promoting innovations of the last century, next to vaccines and clean water. However, a recent study showed that more than 30% of all outpatient antibiotics are inappropriately prescribed.<sup>9</sup> The National Action Plan for Combating Antibiotic-Resistant Bacteria highlights the importance of reducing inappropriate antibiotic use as a key strategy in reducing MDROs.<sup>10</sup> Physicians are strongly encouraged to consider their own prescribing practices and their impact on public health.

### ***What is your duty as a physician to antibiotic stewardship?***

The physician's first duty is to the patient. Antibiotics significantly reduce morbidity and mortality and, when used appropriately, are in the best interest of the patient. But antibiotics, like all medical treatments, also have risks. Physicians should be aware of the potential adverse effects and consider these in the decision to prescribe antibiotics.

In addition to potential adverse effects to the individual patient, the development of antibiotic resistance is a serious emerging concern. Through antibiotic stewardship, the physician plays a critical role in preventing and slowing the spread of MDROs. Physicians are encouraged to use the narrowest spectrum and shortest duration of antibiotic that is appropriate for a given diagnosis.

Finally, physicians have an obligation to refrain from providing nonbeneficial interventions. Parental demand for antibiotics is a common occurrence in pediatrics and physicians should be firm in their resolve to prescribe antibiotics only when clinically indicated. Nonetheless, physicians should be ready to engage in open communication with parents about their clinical decisions in a professional and compassionate manner.

### ***How are the 2 cases similar?***

Vaccine refusal and antibiotic demand are common causes of tension that can occur when parental decisions differ from physician recommendations. Physicians must build a respectful relationship with families while ensuring the medical well-being of the child. These 2 scenarios also exemplify the conflict that physicians experience, because they not only have obligations to individual patients and their families, but they also have duties to the community. With the development of MDROs and the resurgence of vaccine-preventable diseases, public health needs to be better integrated into clinical practice.

## Conclusions and Suggestions

Pediatric infectious diseases pose unique ethical dilemmas that often involve the physician and his or her relationship with the patient, the parents, and the community. The physician's primary duty is to the patient. Respect for parental autonomy in making decisions may be limited both by challenges to the child's medical best interest and also by threats to public health.

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