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## Risk Assessment in Infection Control: Which Risks?

*To the Editor*—The focus of infection control professionals (ICPs) is on the control of infection risks. ICPs usually work

within a geographically defined setting, such as a hospital, with services organized to control risks within that defined setting. ICPs have to consider both the risks associated with infection and those associated with control strategies, which may themselves have a significant adverse impact on individuals or groups. For example, isolation of hospitalized patients may be associated with non-infection-related adverse consequences.<sup>1</sup>

The importance of dimensions of well-being apart from those directly associated with infection is well illustrated by an example of an infection control dilemma posed in the recent article by Bryan et al.<sup>2(p1079)</sup> We are asked: “Should a postpartum woman being treated for a breast abscess due to methicillin-resistant *Staphylococcus aureus* (MRSA) be allowed to visit her infant in a busy neonatal intensive care unit (NICU) in which MRSA has not yet emerged as a significant problem?” The risks include the potential for infection to damage the infant’s health, to threaten the continuation of breastfeeding, and also to damage other dimensions of well-being related to mother-infant attachment. These risks also threaten other infants who may be in the NICU at the time, as well as in the future, if MRSA becomes endemic.

If we take a very broad definition of health, such as that of the World Health Organization (WHO)—a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity—then risks related to infection, breastfeeding, and mother-infant bonding can be considered risks to health. Many would argue that the WHO definition is impractically inclusive (eg, Saracci<sup>3</sup>). Even so, if we consider that ICPs have a responsibility to consider the *overall well-being and interests of patients*, then we should still take into account the risk of an adverse impact of control strategies on mother-infant bonding.

Some of the recently published work on public health ethics (eg, that of Powers and Faden<sup>4</sup>) has drawn attention to dimensions of well-being outside of a narrow definition of health, referring specifically to health, respect, attachment, personal security, reasoning, and self-determination. Nussbaum<sup>5</sup> has defined 10 capabilities derived from the question: “What activities are...definitive of a life that is truly human?” The list of capabilities comprises life (normal life span); bodily health; bodily integrity; senses, imagination, and thought; emotions; practical reason; affiliation; relationships with other species; play; and control over one’s environment. Nussbaum<sup>5</sup> argues that we should give priority to ensuring that everyone achieves a minimum standard of capability in all of these dimensions.

The Nuffield Foundation has recently published guidance on public health ethics in which they argue in favor of a stewardship model, stating that, as stewards, we have a special obligation to protect the most vulnerable.<sup>6(p144)</sup> The Nuffield Foundation defines vulnerability as “lacking capacity to make informed judgments for oneself, being socially or economically disadvantaged, or...[having] other factors that contrib-

ute to a lack of autonomy." Not only are infants in the NICU among the most vulnerable, according to this definition, but they are also extremely vulnerable with respect to both infection and the adverse consequences of infection. Almost all of the capabilities "definitive of a life that is truly human" (as defined by Nussbaum<sup>5</sup>) are at risk for infants in the NICU if infection spreads. Control strategies that limit mother-infant interactions also put these capabilities at risk, and this case illustrates the importance of considering all dimensions of well-being both when trying to optimize control strategies and *when defining risks*. Uncontrolled spread of MRSA has the potential to compromise other mothers and infants through infection, through interference with breastfeeding, and through interference with attachment.

The relevance of the observation that "MRSA has not yet emerged as a significant problem" depends on the risk of cross-infection to other infants. Currently, the emphasis in biomedical ethics is to support individual rights, autonomy, and self-determination. Only when there is a threat of harm to others "can [power] be rightfully exercised over any member of a civilized community, against his will, to prevent harm to others."<sup>7(p13)</sup> The case for restricting access of the mother to her baby is strengthened as the possibility of harm to other infants increases (eg, through the spread of MRSA).

The broad range of risks from infection to the well-being of infants requires that we do what we can to minimize the risk of preventable infection. With adequate infrastructure and sufficient staff, it should be possible to lessen the degree of risk of harm to others that is associated with allowing a degree of contact between a mother and her infant. Suboptimal levels of staffing and infrastructure are risk factors for increased mortality in NICU, according to the UK Neonatal Staffing Group Study.<sup>8</sup> Staffing and infrastructure in NICUs, even in affluent countries, may be below recommended standards.<sup>9</sup> It is striking that, in the United Kingdom, only 3.8% of NICUs are achieving national standards for nursing staff working in the NICU.<sup>10</sup>

If the goal of the ICP is to control infection risks in a manner that *best serves the overall well-being and interests of*

*patients* (within that defined setting), then risk management strategies must take account of both infection *and noninfection* risks to well-being. NICU infants illustrate the diversity of dimensions of well-being at risk from preventable infection.

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