

# Best Interest of the Child: Surrogate Decision Making and the Economics of Externalities

Joseph P. DeMarco · Douglas P. Powell ·  
Douglas O. Stewart

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**Abstract** The case of Twin B involves the decision to send a newborn to a less intensive Level 2 special care nursery (SCN) than to the Level 3 neonatal intensive care unit (NICU) that is considered optimal by the physician. The physician's acceptance of the transfer is against the child's best interest and is due to parental convenience. In analyzing the case, we reject the best interest standard. Our rejection is partly supported by the views of Douglas Diekema, John Hardwig, and Lannie Ross. Instead of the best interest standard, we offer and defend an approach we base on a microeconomic analysis of externalities, such as those involved with automobile emissions. This extends our previously presented general microeconomic approach to patient decision-making. It provides a clearer way to evaluate situations, like those

of Twin B, in which burdens faced by family members may be used to determine the appropriate level of treatment for a decisionally incapable patient.

**Keywords** Informed consent · Decision-maker · Surrogate · Best interest · Bioethics: Medical ethics

## Twin B

Mrs. W gave birth by cesarean section to premature twins. Twin A was healthy and remained at the Level 1 community hospital with his mother. Twin B, the second born, weighed 4 lb, 3 oz, at birth, was in respiratory distress, and needed supplemental oxygen. The attending physician believed that Twin B required transfer to a neonatal intensive care unit (NICU) and proceeded to arrange a transport to a Level 3 NICU facility. Twin B's parents requested a transfer to a less intensive Level 2 special care nursery (SCN) located closer to their home. The father claimed that the nearer location would make visitation and delivery of breast milk more convenient. The attending physician believed that a Level 3 NICU was in the best interest of Twin B because she might require more specialized treatment. If more specialized treatment would be required after transfer to a Level 2 SCN facility, the delay and possible complications during a second transfer could have unfortunate long-term consequences. A need for a subsequent transfer to a NICU was thought to be unlikely, but it was difficult to predict

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J. P. DeMarco  
Department of Philosophy,  
Cleveland State University,  
Cleveland, OH 44115, USA

D. P. Powell  
Department of Neonatology, Cleveland Clinic Foundation,  
Cleveland, OH 44195, USA

D. O. Stewart (✉)  
Associate Professor Emeritus, Department of Economics,  
Cleveland State University,  
Cleveland, OH 44115, USA  
e-mail: d.o.stewart@csuohio.edu

the course of Twin B's illness. The parents stated that they understood all of this, but they continued to request transfer to a Level 2 unit. The attending physician understood that referral to a more distant Level 3 unit would cause a hardship for the parents and believed that the infant most likely would not require more intense treatment. He also believed that if he insisted on transfer to the Level 3 treatment facility, the parents would agree to it. The attending physician chose to transfer Twin B to a Level 2 unit closer to the parents' home. Twin B's respiratory distress worsened and she required intubation and mechanical ventilation, but she progressed well and a second transfer was not needed. At 21 days of age, Twin B was discharged home. Twin A remained at the Level 1 community hospital. She had transient difficulties breastfeeding, but no other problems and was able to be discharged at 10 days of age.

Young children are not capable of making their own medical decisions. Typically, parents and guardians are called upon to make those medical decisions for them. Typically, too, bioethicists believe that parents and health care professionals should decide on medical treatment for a child based on their perception of the best interest of the child. "Best interest of the child" is a standard also thought to be widely accepted in the law when making proxy decisions for infants and babies (Beauchamp and Childress 2001). The best interest standard involves *only* the interest of the patient, but a young child's interest might be linked to or dependent upon the interests of other family members or parents. An example of this is when a parentally desired treatment alternative makes it easier for that parent to give the treated child more effective home care. In this type of situation, it is acceptable under the best interest standard to account for the interests of others; otherwise, considering the interests of others is not acceptable under the standard.

In the case of Twin B, the best interest standard was not the basis for the attending physician's decision. The physician had no expectation that the parents' increased convenience would improve Twin B's medical care. If he used the best interest standard, at the least the physician would have attempted to persuade the parents to accept transfer to the NICU. We shall consider whether it was morally acceptable not to take further action to achieve transfer to the higher level NICU. In support of the physician's

decision, we shall argue against exclusive use of the best interest standard.

In what follows, we explain our rejection of sole reliance on the best interest standard when making medical decisions. We then model the decision about treatment on the economic theory of externalities.<sup>1</sup> In the course of the discussion leading up to the application of our analysis to the case of Twin B, we identify three bioethicists who, for differing reasons, do not support sole reliance on the best interest standard for making medical decisions for children. We summarize the bases for rejecting the best interest standard put forth by these bioethicists. We briefly describe their suggested alternatives and identify weaknesses in their alternatives that we believe our approach can overcome. Further in what follows, we sketch out our economic theory of patient decision-making and extend our theory by relaxing an implicit assumption that there are no externalities. Finally, we apply our extended theory in light of rejection of the best interest standard to provide a rationalization of the physician's decision in the care of Twin B.

### Three Alternatives to the Best Interest Standard: A Review

We examine here the positions of Lainie Friedman Ross, Douglas S. Diekema, and John Hardwig, three bioethicists who reject sole reliance on the best interest standard. These three bioethicists, in effect, make the case for us against exclusive reliance on the best interest standard, and we rely on their arguments in our rejection of the best interest standard.

In distinction to the best interest standard: Lainie Friedman Ross uses a holistic, family-centered standard; Douglas S. Diekema supports a standard in which there is a threshold of harm below which parents need not decide in the best interest of their children; and John Hardwig uses a family court model that allows for the inclusion of family interests. While there is much to be said in favor of these views, we believe that they are not fine-tuned enough to provide adequate advice to Twin B's physician or medical care professionals in general. We offer a fourth approach,

<sup>1</sup> Our use of economic externalities is an extension of our previously published microeconomic model of patient decision-making (Stewart and DeMarco 2005).

one based on the economic theory of decision-making when externalities are present.

### Lainie Friedman Ross' Family-Centered Position

Lainie Friedman Ross offers a perspective that leads her to reject exclusive use of a patient-centered standard. Ross rejects the best interest standard because it ignores the special status of the family as an intimate entity in itself, with its own goals and interests (Ross 1998). Under the family-centered view, the interests of the family as a whole are not reducible to the interests of any individual family members. Exclusive reliance on the health interest of one family member might conflict with the interests and goals of the family as a whole. Such conflict might arise because more emphasis placed on the interest of other family members could benefit the family as a whole. Ross claims that the best interest standard “leaves no room for compromise, and does not offer a viable solution for dealing with a family in which there is more than one child, each with competing and conflicting best interest claims” (Ross 1998, 10).

For Ross, parental decisions should not be interfered with except (1) to avoid abuse, neglect, and exploitation of children and (2) to provide the goods necessary for children “to become persons capable of devising and implementing their own life plans” (Ross 1998, 11). Drawing a line at abuse and gross neglect is similar to Diekema's view, but for Ross that line is not simply directed at legal action but also places a limit on any morally permitted interference with a family's proxy decisions.

Ross probably would support the physician's choice in the case of Twin B, especially because any inconvenience to the parents might also affect Twin A. Furthermore, even in a similar case if the parents' reasons were frivolous, the physician should not attempt to persuade the parents to accept the higher-level intensive care unit because no abuse is involved.

Centering on an intimate family and its goals may often be appropriate. As such the notion of the intimate family provides a rationale for rejection of exclusive emphasis on the best interest standard of proxy decision-making. The view, of course, makes best sense within the evolved set of familial relation-

ships. When decisions need to be made by health care providers about accepting a proxy decision, such as in the case of Twin B, there may be indications that a family's position improperly burdens an ill child. Those outside the intimacy of the family are at a disadvantage in evaluating a proxy's decision.

The talk about an intimate family and its goals sounds noble and has a ring of truth. However, we should recognize that it is vague. What are these family goals? How are they to be established and evaluated? Are all goals worthy of respect? Accepting a family's decision may be problematic because many families are not intimate. Some parents are overly selfish in relation to their children. Some parents unfairly, even grossly, favor one child over another. Other families may be well intentioned but unwise or thoughtless in their decision-making.

### Douglas S. Diekema's Threshold of Harm Standard

Douglas S. Diekema attacks in a detailed way exclusive use of the best interest standard when making medical decisions for children (Diekema 2004). He claims that: “It is not clear that the best interest of the child should always be the sole or primary consideration in treatment decisions” (Diekema 2004, 246). Diekema claims it is socially recognized that parents should be given latitude in decision-making regarding children and that they are not typically required to act in a way that promotes a child's best interest. Summarizing, he states: “We ... regularly grant parents the freedom to make medical decisions that most people would argue are inferior to other alternatives and allow them to limit the choices of actions of their children for reasons that are not always out of concern for the child's interests” (Diekema 2004, 247–8). Recognizing that parents must take into account interests besides those of an ill child, he cites a telling remark by John Lantos: “The interests of children are neither absolute nor unambiguous. They are always intertwined with the interests of others, and often must be weighed against those interests” (Diekema 2004, 248).

Diekema is most interested in the decision-making of law courts in cases where parents have rejected treatment for their children. Instead of using the best interest standard, Diekema contends that the standard

for court intervention should be a threshold at a high level of harm to the child: “The state must establish that parental choices endanger the child and thus fall below the acceptable threshold” (Diekema 2004, 248). In other words, a court should reject parental decision-making when the decision seriously harms the child. Diekema leaves the appropriate level of harm undefined. Once we have a threshold of harm—a level of harm above which parental decisions should not be respected—we know when the state should intervene. Diekema’s main concern is determining when the state should intervene.

Diekema’s proposal is designed for the special circumstances of a case brought to a judge; our concern is broader. We are interested in situations in which the state does not intervene, such situations as those in the case of Twin B *as well as* circumstances involving more serious harm when state intervention may occur.

We agree with Diekema’s rejection of the best interest standard. However, we reject both his failure to take into account the interest of the child when harm is below his threshold and his failure to take into account the interests of the parents when harm is above the threshold. As we shall see, our theory consistently considers the interests of both parties.

### John Hardwig’s Position on the Interests of Family Members

John Hardwig rejects the best interest standard based on reasoning similar to Diekema’s (Hardwig 1993). Hardwig points out that family members frequently face financial and emotional difficulties in caring for sick relatives: “Now, if medical treatment decisions will often dramatically affect the lives of more than one, I submit that we cannot morally disregard the impact of those decisions on all lives except the patient’s” (Hardwig 1993, 23). While health considerations may be extremely important and often outweigh other interests, Hardwig concludes that: “Everyone with important interests at stake has a morally legitimate claim to consideration; no one’s interests can be ignored or left out of consideration” (Hardwig 1993, 23). Consequently, according to Hardwig, the morally proper medical treatment may be other than the treatment that is in the best interest of the patient.

In his rejection of the best interest standard, Hardwig considers Immanuel Kant to be an ally (Hardwig 1993). He argues that, despite the fact that Kant is often enlisted as support for reliance on the best interest of the patient as a way to respect the patient, Kant would have insisted on fairness. In effect, bioethicists who depend exclusively on a patient’s best interest treat others as merely means to the good health of the patient. We believe Hardwig’s rationale for rejection of the best interest standard is well stated and commendable.

Hardwig, like Diekema, calls for a theory that takes into account others’ interests, but he is forthright in stating that he has no such theory to offer (Hardwig 1993). Instead of rebuilding a theory of proxy decision-making, he suggests that a family law model may offer appropriate guidance (Hardwig 1993).

Hardwig claims that it is legitimate in the family law model to override the best interest of a child; for example, when that interest conflicts with other familial interests. Family law uses an acceptable minimal level of care as a standard. His invocation of this family law standard makes Hardwig’s proposal similar to Diekema’s. We react to Hardwig’s proposal in a way similar to our reaction to Diekema’s proposal: it is best used in legal circumstances and does not address some of the moral problems that arise in health care situations, such as when evaluating the decision made by the physician in the case of Twin B.

We view the main strength of Hardwig’s presentation to be his argument supporting the need to consider the interests of others when making treatment decisions for the patient. Typically, the patient has an interest in good health care. Other people may find that this interest conflicts with their interests. In this situation, satisfying the interest of the patient may harm others. While measuring the harm done to others is difficult, evaluating the best interest of the patient is difficult as well. Judges in a law court are frequently called upon to make such evaluations, as difficult as these evaluations might be.<sup>2</sup>

<sup>2</sup> For example, in *Little v Little* (1979), the court considered whether a daughter with Down syndrome should be used as a kidney donor for her sister. A court-appointed lawyer representing the prospective donor argued that donation is not in her medical interest. The court disagreed, arguing that the continuing life of the younger child would be a psychological benefit to the donor.

In the case of Twin B, the physician made a quick, albeit implicit, evaluation of the various interests involved. There is no guarantee that he did so appropriately, but decision-making under risk and uncertainty is a typical circumstance in medicine as in many other fields. The theory we shall offer is intended as an early step in developing a guide to such decision-making.

### Rejection of the Best Interest Standard

We believe that the authors we examined make a strong case against exclusive use of the best interest standard. Our objections to exclusive use of the best interest standard are similar. Ross argues that it is typically best to leave it to families to decide the balance of interests within the family (1998, 10). Diekema views the exclusive use of the best interest standard as an unnecessary intrusion into family life (2004, 244). We agree with Diekema that in day-to-day medical practice the best interest standard is often, perhaps typically, violated in cases similar to those involving Twin B. Diekema hopes to bring clarity and guidance to actual practice (2004, 248).

From both a Kantian and a utilitarian view, failure to consider the interests of parents and other siblings is either disrespectful or leads, on balance, to harm. We agree with Hardwig's reliance on Kant (1993, 24). Failure to take family interests into account means that parents and siblings may sometimes be used solely as means to the child's ends. This failure violates Kant's respect principle. Furthermore, we agree with Hardwig that a Kantian perspective runs counter to total disregard of affected interests, viewing that as unfair (1993, 24). A basic utilitarian approach similarly would require taking into account interests beyond those of the child, because failure to do so would not optimize happiness and the avoidance of pain and suffering.

Our main addition to the debate over the best interest standard is not our objection to it as morally inappropriate. The main problem we tackle is the best way to balance the interests involved. Instead, in what follows, we propose using the theory of economic externalities as superior to the proposed alternatives to the best interest standard of Ross, Diekema, and Hardwig.

### An Economic Theory of Patient Decision-Making with Externalities

We present the economic theory of decision-making with externalities as an alternative to the best interest standard. We begin by identifying the best interest of the patient from the perspective of microeconomic theory and then allow for the existence of externalities to represent the interests of other involved parties. We use *externality* in a standard way, as does the economist Gregory N. Mankiw, who defines it as “the uncompensated impact of one person's actions on the well-being of a bystander” (2008, 11).

If externalities are not factored in, the level of treatment chosen through application of this microeconomic theory is the same whether the decision-maker is the patient or a surrogate applying the best interest standard. A patient considering only his or her interests optimizes well-being by pursuing additional treatment whenever the benefits of additional treatment—marginal treatment benefits (MTB)—are equal to the costs of that additional treatment—marginal treatment costs (MTC). MTB are the additional benefits to the patient when the level of treatment is increased, and MTC are the additional costs imposed on the patient when the level of treatment is increased.

Benefits and costs are broadly construed in this theory and are evaluated by the patient using his or her preference structure. Treatment benefits include, for example, additional mobility, absence of pain, ability to work, longer life expectancy, and so on. Treatment costs include treatment pain and suffering, adverse side effects from treatment, time lost in treatment, direct monetary cost of treatment, and the like. Some treatments are more or less one-time occurrences of a given magnitude. In that case the self-interested patient should accept the treatment when the benefits of it are greater than the costs. If treatment comes in degrees and over time, as it does for diseases such as diabetes, then the patient should accept additional treatment (for example, extra exercise in each time period) until the point that additional treatment benefits are just equal to the costs of that additional treatment.<sup>3</sup>

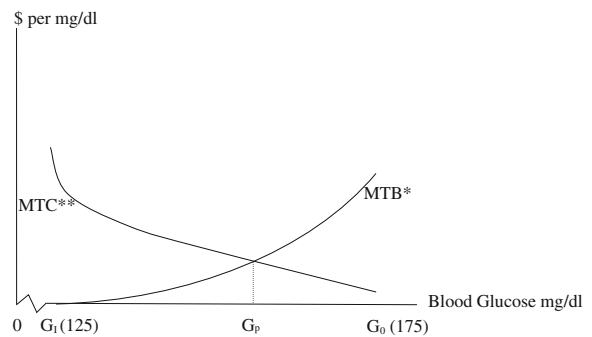
<sup>3</sup> Benefits and costs of treatment are conceived technically as present discounted values of future benefits and costs.

This microeconomic theory-based view centers exclusively on the patient's perspective. Suppose parents serving as surrogates make decisions from a microeconomic perspective without considering costs other than those borne by their children. From the best interest of the child perspective, they would estimate how the child would, if he or she could, evaluate benefits and costs. A treatment is acceptable under the best interest standard if the benefits of additional treatment, MTB, are at least as great as its costs, MTC, from the presumed perspective of the child.

The treatment level a patient or surrogate should choose under the best interest standard is illustrated graphically in Fig. 1. We use type 2 diabetes and its treatment to illustrate the workings of the theory in the context of the choice of a goal for treatment. The choice of type 2 diabetes for the illustration is based on nearly everyone having heard of the disease and many people having knowledge of the criterion for diagnosing the disease and for measuring success of treatment.<sup>4</sup> Treatment of type 2 diabetes involves attention to diet and exercise, and patients with type 2 diabetes may be able to avoid the future need to administer insulin. Hypertension, or high blood pressure, is another disease meeting our criteria for use in our illustration.

The curve labeled marginal treatment benefits (MTB) in Fig. 1 represents the relationship between the addition to total treatment benefits per 1 mg/dl decrease in the patient's blood glucose level, i.e., MTB, or the marginal treatment benefits, and the blood glucose level resulting from a certain treatment level. Suppose that the patient presents with a blood glucose level of 175 mg/dl, a level well above the level at which type 2 diabetes would be diagnosed. The shape of MTB reflects our assumption that MTB is positive but decreasing as the level of blood glucose is reduced below the presentation level of 175 mg/dl.

The curve labeled marginal treatment costs (MTC) in Fig. 1 represents the relationship between the addition to total treatment costs per 1 mg/dl decrease in the patient's blood glucose level, i.e., MTC, or the marginal treatment costs, and the blood glucose level resulting from a certain treatment level. The shape of MTC reflects our assumption that MTC is positive



**Fig. 1** Case of diabetic child. \*Marginal Treatment Benefits starting at 175 mg/dl blood glucose level for the *i*-th patient. \*\*Marginal Treatment Costs starting at 175 mg/dl blood glucose level for the *i*-th patient

and increasing as the level of blood glucose is reduced below 175 mg/dl.

As shown in Fig. 1, at the patient's initial blood glucose level of 175 mg/dl, instituting a modest treatment plan that lowers the blood glucose level somewhat below 175 mg/dl produces marginal treatment benefits greater than marginal treatment costs. As treatment intensifies, the additional treatment further lowers the blood glucose level, and with MTB greater than MTC, treatment net benefit increases. At the treatment level yielding the blood glucose level at which MTB equals MTC, the patient's treatment net benefit is maximized. This blood glucose level is  $G_p$  in Fig. 1.

Below the blood glucose level  $G_p$ , additional treatment decreases treatment net benefit, because at blood glucose levels below  $G_p$ , MTC is greater than MTB, i.e., the additional treatment adds more to cost than it does to benefit. The blood glucose level  $G_p$  is optimal from the patient's perspective; the blood glucose level  $G_p$  is the result of applying the best interest standard to determine the treatment level and corresponding blood glucose level.

In our review of the work of bioethicists Ross, Diekema, and Hardwig, we encountered two problems with sole reliance on the best interest standard for medical decision-making. First, as Diekema points out, the best interest standard is vague. This problem with the best interest standard is overcome by using the microeconomic theory we detailed. This theory precisely identifies the treatment level that is in the best interest of the patient.

The second problem we identified in our review is that the best interest standard recognizes the patient's

<sup>4</sup> While other criteria may enter in diagnosing type 2 diabetes, we simplify by assuming that the blood glucose level is the sole criterion. Type 2 diabetes was formerly known as adult-onset diabetes and is by far the most common type of diabetes.

interest as the only legitimate interest. If others have competing interests and these competing interests are recognized as legitimate—as they might in the case of Twin B and perhaps in most cases—the best interest standard cannot be applied. We can extend the microeconomic theory and use it in analyzing the optimal treatment with competing interests by relaxing the implicit assumption of the microeconomic theory that all treatment benefits accrue to the patient and all treatment costs are imposed on the patient.

The assumption that all treatment benefits accrue to the patient and all treatment costs are imposed on the patient clearly is violated when competing interests exist and others have treatment costs imposed on them. If there are costs imposed on individuals other than the patient—“external costs” in the terminology of economists—then imposing the condition that the patient’s marginal treatment benefits equal the patient’s marginal treatment costs results in too much treatment. Gregory Mankiw offers a nonmedical example of a negative externality:

The exhaust from automobiles is a negative externality because it creates smog that other people have to breathe. As a result of this externality, drivers tend to pollute too much. The federal government attempts to solve this problem by setting emission standards for cars. It also taxes gasoline to reduce the amount that people drive (2008, 204).

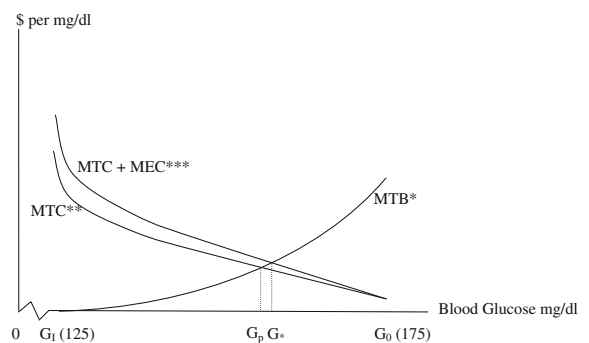
Consider an example of external costs in the context of treating type 2 diabetes. Assume that treatment of a patient’s diabetes imposes costs on others. For example, at least initially, an obese 17-year-old girl with type 2 diabetes might need help conducting regular glucose testing, administering insulin, and adjusting her diet and exercise regimen that are likely to be part of a treatment plan for her disease. It may be the parents of the girl who give this help, and helping her will reduce the amount of time available to the parents to engage in other work or nonwork activities. Regardless of the nature of these activities, helping their daughter imposes a cost on the parents. The costs of this type that the parents bear are “negative externalities.”

If negative externalities are not taken into account in determining treatment, then the level of treatment accepted by the patient will be higher than the optimal level of treatment for the combination of the patient and the third party, the patient’s parents. From the perspective

of the patient, when the negative externalities are ignored (or none are present), the desired treatment level is the level at which MTB equals MTC. The existence of negative externalities reduces the optimal level of treatment by counting the marginal external costs imposed on the third parties.

In our earlier diabetes example, the 17-year-old girl suffering from diabetes is the patient, and the parents are the third parties. Returning to Mankiw’s nonmedical example of negative externalities, the federal government taxes gasoline to reduce driving from its nonoptimal level to a lower, optimal level when driving generates the negative externality smog (Mankiw 2008).

If negative externalities are taken into account by the patient in determining treatment, then the level of treatment accepted by the patient will be lower than the optimal level of treatment for the patient when the external costs imposed on the third party are ignored. The treatment level a patient or surrogate should choose when negative externalities exist and are taken into account is illustrated graphically in Fig. 2. In Fig. 2, a third relationship based on blood glucose level is added to the two relationships represented in Fig. 1. The third relationship, labeled MTC+MEC, represents the total of marginal treatment costs (MTC) imposed on the patient alone and the marginal external costs (MEC) imposed on third parties. At any blood glucose level, marginal external costs are measured in Fig. 2 by the vertical distance between the curve labeled MTC and the curve labeled MTC+MEC. The shape of MTC+MEC reflects assumptions that both MTC and MEC are positive and



**Fig. 2** Case of diabetic child with negative externalities. \*MTB: Marginal Treatment Benefits starting at 175 mg/dl blood glucose level for the *i*-th patient. \*\*MTC: Marginal Treatment Costs starting at 175 mg/dl blood glucose level for the *i*-th patient. \*\*\*MTC + MEC: Marginal Treatment Costs plus Marginal External Costs starting at 175 mg/dl blood glucose level for the *i*-th patient

increasing as the level of blood glucose is reduced below 175 mg/dl.

Counting the interests of both the patient and the third party, the optimal level of treatment is the level that yields a blood glucose level of  $G_*$ , the level at which MTB equals MTC+MEC. This blood glucose level,  $G_*$ , is greater than  $G_p$ , the level of blood glucose when there are no third party interests and MTB equals MTC. When the interests of a third party are counted, the treatment net benefit to the patient is reduced as the treatment level is reduced and the patient's blood glucose level is higher. At the same time, the external costs imposed on the third party are reduced. The net result is a balancing of the interests of the patient and the third party.

### Application to the Case of Twin B

Surrogate decision-making under the best interest standard is difficult because the surrogate must make treatment decisions for the patient without full knowledge of the values or preferences of the patient. This lack of full knowledge clearly is true when young children are involved. Under the best interest standard the proxy must attempt to determine the level of treatment for the patient at the level when marginal treatment benefits to the patient equal marginal treatment costs to the patient.

In the case of Twin B, the physician must evaluate using professional criteria whether the parents, acting as surrogates and using nonmedical criteria, are deciding in the best interest of the patient. Even using medical criteria to evaluate the best interest of the child might not involve sending the child to a Level 3 NICU. For example, the level of acuity and the demands upon the physician and nursing staff in such a unit might have a negative impact on the child's care. Also, the parents may have difficulty coping with the intense atmosphere existing at many NICUs. Their reactions may have an impact on how they are able to deal with their infant. However, all this must be balanced against the possible need for the higher level of care available to the infant within the NICU. Using the best interest standard, the physician may or may not conclude that transfer to a NICU is in the best interest of the child. In our case, the physician initially came to the determination that it was in the best interest of the child to be transferred to a NICU.

Up to this point the physician's decision-making process did not take into account possible negative externalities, among which are the costs that would be borne by the parents. In the case of Twin B, the parents would suffer inconvenience and financial costs for a longer trip to the hospital with the Level 3 NICU as compared to the hospital with the Level 2 SCN. There might also be a negative externality imposed on Twin A through a loss of attention from her parents. The extra costs associated with the negative externalities are real costs that, left unconsidered, would result in nonoptimal treatment and a nonoptimal allocation of medical resources. The external costs should be added to the costs directly associated with the patient's treatment, those direct costs used when the judgment is made solely on the basis of the best interest of the child. Adding the external costs leads to a reduction in the optimum level of treatment and a reduction in medical resources devoted to treatment.

The physician chose to respect the decision of the parents in this case. The physician's decision can be justified and explained by taking into account the negative externalities involved. If the physician thought the negative externalities were not sufficient enough to raise the total of marginal treatment costs plus marginal external costs to change his original decision, then the physician would have been obligated to insist that the parents accept their child's transfer to the NICU.

In general, external costs may or may not change a decision involving a dichotomous variable such as admission to the NICU or the SCN; either the child is transferred to the Level 3 NICU or to the Level 2 SCN. In our analysis with a dichotomous variable, the child is transferred to the NICU if the external costs of that transfer are less than the net treatment benefits forgone by the patient if the patient were instead transferred to the SCN. On the other hand, the child should be sent to the SCN if the external costs associated with transfer to the NICU are greater than the net treatment benefits gained by the patient if the patient were instead transferred to the NICU.

In the case of Twin B, the expected harm to the child likely falls below Diekema's threshold level of harm. He would accept parental decision-making without analysis. It might have been the case that Twin B faced more dire circumstances, making transfer to the NICU crucial. Given the interests behind the parents' objection, our view and Diekema's would support the transfer. However, unlike Diekema, we take into account the



interests of the parents even when parental interests are not decisive. We believe our microeconomics-with-externalities approach is superior in this way to Diekema's position in cases where expected harm to the child may be great. Despite his rejection of the best interest standard, Diekema does not consider the interests of the parents when harm is great; he simply insists on treatment.

The arguments previously presented against the best interest standard remain appropriate when harm to the child is greater than Diekema's threshold. Consider, for example, a case in which parents maintain a strong and deeply seated religious objection to treatment. Diekema's theoretical position does not allow for consideration of those interests. Of course, in our theory serious harm to a child may be considered more important than the interests of parents, but our view takes those interests into consideration. In some cases, parental interests may be decisive. Consideration of parental interests is also true in court cases in the United States.

The decision in a case in the Supreme Court of Delaware that Diekema covers in detail, *Newmark v. Williams* (1991), is difficult to justify under his threshold view. The court refused to order chemotherapy treatment for Colin Newmark, a young boy who suffered from Burkitt's lymphoma. The treatment had a predicted 40% chance of success. Diekema believes that failure to treat Colin represents significant harm to the boy, with his odds of death without chemotherapy at 100%, suggesting that the harm to the boy exceeded his threshold level. Nevertheless, the court did not order treatment. In siding with the parents' objections, based on their religious convictions, the court argued that the probability of treatment success was low and that harmful side effects were significant. Still, tipping the scale for the court was the parental decision-making interest, which the court explicitly balanced against the health interest of the child. This balancing is consistent with our externality view.

## Conclusion

We reject the best interest of the patient standard primarily based on the analysis of Diekema and Hardwig. We propose a microeconomic theory with externalities to describe treatment decision-making as

an alternative to the approaches of Diekema and Hardwig. Our theory results in the best interest of the patient being overridden if marginal costs (MTC+MEC) are greater than marginal treatment benefits when the costs to third parties are considered.

Our analysis based in microeconomic theory is more consistent than that proposed by Diekema. Diekema's view is inconsistent when serious harm to the patient is involved. In that case, he believes that the best interest of the child should override parental objection to treatment. In our externalities position, serious harm to the child if treatment is forgone would mostly offset less serious interests of the parents or surrogate, and treatment would be undertaken. By drawing a bright line distinction, in Diekema's view the best interest of the child is only required when harm to the child is very serious. But under these circumstances, he fails to take into account the interests of the parents. He does not carry through on his objection to the best interest standard. Our approach consistently takes into consideration both the interests of the parents and of the child. Our approach also can deal with cases when the harm to a child may be significant yet below the line that Diekema suggests.

We rely substantially on Hardwig's Kant-based argument against the best interest of the child standard and his wish to recognize the parents' interests in treatment decision-making. Hardwig wants a theory to guide treatment decisions when both the child's and the parents' interests are recognized, but he does not provide such a theory. We have attempted to fill the void.

In the case of Twin B, the physician made a decision, which we support, not to attempt to persuade the parents to send the infant to the NICU. The physician recognized that the inconvenience to the parents was significant. Had the parents' objection been frivolous, we would not support the physician's decision. According to our interpretation of Ross, the physician should not have considered the parents' reasons. Instead, the simple fact that the parents expressed a rejection of the NICU was adequate. Given the likelihood of harm to the child, we believe that the physician properly stood as an advocate for his patient (Twin B) by considering the adequacy of the parents' expressed concerns. A simple acceptance of the parents' decision leaves the child without appropriate protection. Even though the child's health

is not, against the best interest standard, the only issue, it is an issue that should be considered. Our approach provides a way to evaluate such considerations whether the expected harm to the child is great or small. We view that as an advantage over the views of Ross, Diekema, and Hardwig.

## References

- Beauchamp, T.L., and J.F. Childress. 2001. *Principles of biomedical ethics*, 5th ed. New York: Oxford University Press.
- Diekema, D.S. 2004. Parental refusals of medical treatment: the harm principle as threshold for state intervention. *Theoretical Medicine* 25(4): 243–64.
- Hardwig, J. 1993. The problem of proxies with interest of their own: toward a better theory of proxy decisions. *The Journal of Clinical Ethics* 4(1): 20–7.
- Little v. Little*, 576 S.W.2d 493 (Tex. Civ. App. 1979).
- Mankiw, N.G. 2008. *Principles of microeconomics*, 5th ed. Mason: South-Western Cengage Learning.
- Newmark v. Williams*, 588 A.2d 1108 (Del. 1991).
- Ross, L.F. 1998. *Children, families, and health care decision-making*. New York: Oxford University Press.
- Stewart, D.O., and J.P. DeMarco. 2005. An economic theory of patient decision-making. *Journal of Bioethical Inquiry* 2 (3): 153–64.