



Quality-Improvement Research and Informed Consent

Franklin G. Miller, Ph.D., and Ezekiel J. Emanuel, M.D., Ph.D.

Tens of thousands of patients die each year because of hospitals' failure to adhere consistently to standard procedures of safe and effective medical care. Accordingly, improving the quality

of routine hospital care is a public health imperative. An effective way to promote quality improvement is to conduct evaluative research on programs designed to implement standard practices for the safety and care of hospitalized patients.

Such research, however, poses an apparent ethical conundrum: it is often impossible to obtain informed consent from patients enrolled in quality-improvement research programs because interventions must be routinely adopted for entire hospitals or hospital units. When, for instance, research on a quality-improvement initiative that affects routine care is conducted in an intensive care unit (ICU), surgical suite, or emergency room, individual patients have no

opportunity to decide whether or not to participate. Can it be ethical to conduct such research without informed consent?

A recent investigation by the Office for Human Research Protections (OHRP) — the federal agency charged with overseeing human-subjects research — places this issue in bold relief.¹ Researchers at Johns Hopkins University coordinated a quality-improvement research project aimed at reducing catheter-related infections in 103 ICUs at 67 Michigan hospitals.² The study evaluated a protocol designed to routinely implement five evidence-based procedures: having clinicians wash their hands, using full-barrier precautions during insertion of central venous catheters,

using chlorhexidine for skin cleansing before catheter insertion, minimizing the use of the femoral site for catheter insertion, and removing unnecessary catheters. In addition to the training of clinicians in such standard infection-control procedures, the project involved the use of a checklist to ensure adherence to the protocol. The result was a dramatic decrease in catheter-related infections: at baseline, the participating hospitals had a median of 2.7 infections per 1000 catheter-days; after 3 months, the median had dropped to 0, and it remained there for 18 months. Publication of the results, however, triggered an investigation by the OHRP (see timeline).¹

The institutional review board (IRB) at Johns Hopkins had judged that this quality-improvement program was exempt from federal regulations governing human-subjects research; the published report noted that "informed con-

sent was waived because the study was considered exempt from review.”² In its “determination letter” of July 19, 2007, the OHRP claimed that the program constituted human-subjects research requiring IRB review and concluded that Johns Hopkins had “failed to ensure that the requirements for obtaining and documenting the legally effective informed consent of the subjects or the subjects’ legally authorized representatives under [Department of Health and Human Services] regulations . . . were satisfied.”³ As a result of the OHRP investigation, the Johns Hopkins IRB voluntarily halted research on this quality-improvement program.

Three questions are key to evaluating this case from both ethical and regulatory perspectives. First, did this quality-improvement initiative involve human-subjects research that should have been reviewed by an IRB? Second, if so, could it have been approved through expedited review? And third, was informed consent required?

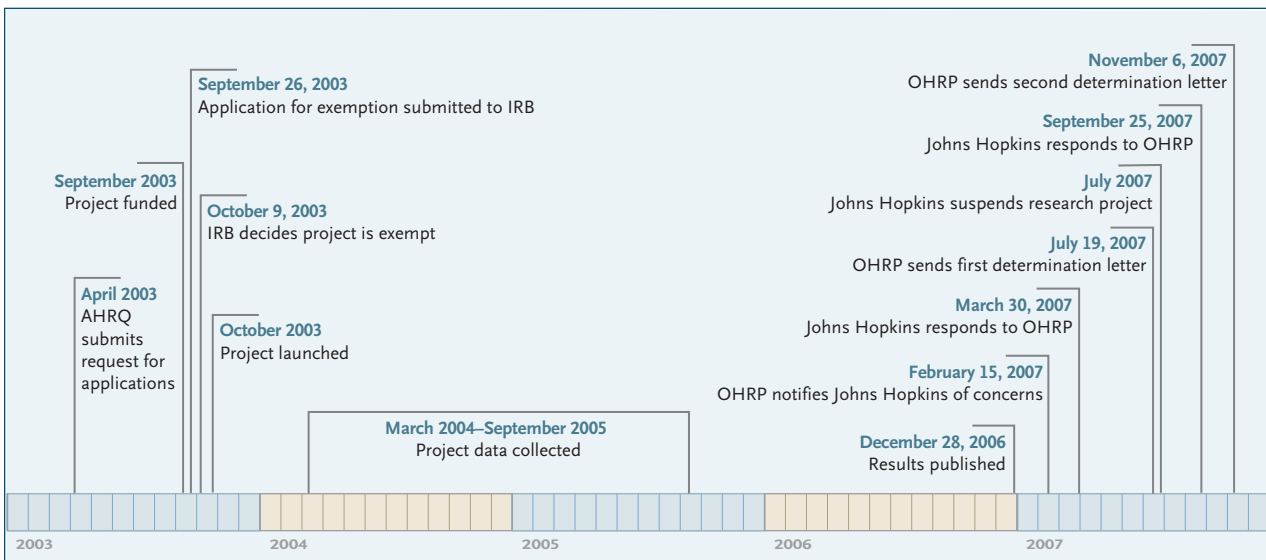
As for the first question, the IRB determined that the quality-improvement initiative was exempt under a provision applying to “research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified.”⁴ The OHRP correctly judged that the project was not exempt, since it prospectively implemented a protocol of infection-control interventions and tested hypotheses regarding its effectiveness. Publication of study results suggests that a goal was to produce generalizable knowledge.

Nevertheless, the research could have been reviewed in an expedited fashion by the IRB chair alone, since it posed no more than “minimal risks” and fit within two categories for expedited review specified by the OHRP: “collection of data through noninvasive procedures (not including anesthesia or sedation) routinely employed in clinical practice” and “research in-

cluding materials (data, documents, records, or specimens) that have been collected or will be collected solely for nonresearch purposes (such as medical treatment or diagnosis).”⁵ In an expedited review, the IRB would need to determine whether informed consent was required or could be waived.

Is informed consent necessary for quality-improvement research? From both an ethical and a regulatory perspective, we believe that the OHRP’s stated conclusion about the need for informed consent was erroneous. Like most ethical norms, the requirement to obtain informed consent has legitimate exceptions. In emergency settings, for example, it is even considered ethical to include patients in a randomized trial of an experimental treatment without consent, provided that appropriate safeguards are implemented.

To judge whether quality-improvement research can be ethical without informed consent, it is necessary to examine particular studies in light of the ethical purposes of informed consent. Informed consent is meant to pro-



Timeline of Johns Hopkins Quality-Improvement Project.

The October 9 decision by the institutional review board (IRB) was made by the IRB chair and one committee member, in accordance with Johns Hopkins policy. AHRQ denotes Agency for Healthcare Research and Quality, and OHRP Office for Human Research Protections.

protect people from exposure to research risks that they have not agreed to accept, as well as to respect their autonomy. None of the quality-improvement interventions in this case were experimental. They were all safe, evidence-based, standard (though not always implemented) procedures. Consequently, patients were not being exposed to additional risks beyond those involved in standard clinical care. Using a protocol to ensure implementation of these interventions could not have increased the risks of hospital-acquired infection. Moreover, the participating hospitals could have introduced this quality-improvement protocol without research, in which case the general consent to treatment by the patients or their families would have covered these interventions. The only component of the project that constituted pure research — the systematic measurement of the rate of catheter-related infections — did not carry any risks to the subjects. Thus, the research posed no risks.

Although informed consent for research participation was not, and could not have been, obtained, the absence of such consent did not amount to any meaningful infringement of patients' autonomy. Consequently, there could be no reasonable or ethical grounds for any patient to object to being included in the study without his or her consent.

For research covered by the federal regulations, the requirement for informed consent may be waived if the research in question poses "no more than minimal risk to the subjects," if the waiver "will not adversely affect the rights and welfare of the subject," if "the research could not practicably be carried out" otherwise, and if "whenever appropriate, the sub-

jects will be provided with additional pertinent information after participation."⁴ Regulatory permission to waive informed consent implies that research conducted without informed consent does not necessarily violate subjects' rights. In some cases, research participation without informed consent fulfills both ethical and regulatory requirements.

Clearly, the Johns Hopkins research on improving the quality of ICU care fulfilled these requirements. In view of the provision for waiving consent, the OHRP's conclusion about the need for patients or surrogates to grant "legally effective informed consent" in its two determination letters seems unjustifiable. Two weeks after the publication of an op-ed article in the *New York Times* about the investigation of this quality-improvement project,¹ the OHRP seemed to change its position, issuing a statement on its Web site (www.hhs.gov/ohrp/) acknowledging the possibility that the criteria for a waiver of informed consent might have been satisfied.

In sum, the IRB should have undertaken a full or expedited review of the study protocol instead of deeming it exempt. And it should have made a determination that the project satisfied the four conditions for waiving informed consent.

It would be highly unfortunate if this OHRP investigation prompted sponsors of quality-improvement initiatives to simply implement changes and forgo evaluative research, owing to concerns about the burdens of IRB review or the need for individual informed consent. Rigorous research is vital to transforming beliefs about which interventions will improve care

into empirically proven, effective programs and to promoting their dissemination. Furthermore, to minimize the burden of regulatory compliance for multisite projects, review by a single IRB at the institution responsible for research coordination should suffice — an approach endorsed by the OHRP.⁵ Most important, it is justifiable from an ethical and a regulatory perspective to waive informed consent for low-risk research when soliciting consent is not practicable and consent would not provide meaningful protection for subjects. Finally, absent genuine concerns about protecting subjects, valuable research should not be hindered.

(The opinions expressed are the views of the authors and do not necessarily reflect the policies of the National Institutes of Health, the Public Health Service, or the Department of Health and Human Services.)

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Dr. Miller is a faculty member and Dr. Emanuel is the chair of the Department of Bioethics, National Institutes of Health, Bethesda, MD.

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