Institute of Medicine Recommends a Complete Overhaul of the 510(k) Process

On July 29, 2011, the Institute of Medicine (IOM) released the long-awaited report of its Committee on the Public Health Effectiveness of the FDA 510(k) Clearance Process (IOM Committee). The IOM Committee was tasked by the Food and Drug Administration (FDA) with assessing the current 510(k) process and recommending changes to the program. To the surprise of many, the IOM Committee’s Report (IOM Report) recommends a complete overhaul of the 510(k) process.  

Summary

- The IOM Report recommends that the 510(k) clearance process — which by statute considers whether a device is substantially equivalent to a previously cleared device — should be replaced with an integrated premarket and postmarket regulatory framework focused on whether a device is safe and effective throughout its life cycle.

- While this headline-grabbing recommendation is unlikely to be adopted, the IOM Report contains extensive commentary on the current 510(k) program, and components of the IOM Report are likely to inform FDA’s ongoing 510(k) review.

- Specific IOM Committee recommendations, including some already under consideration by FDA, may lead to significant changes in the 510(k) program.

- Ultimately, 510(k) reforms are likely to lead to greater burdens on industry.

- FDA has opened a public docket to solicit comments on the IOM Report and will hold a public meeting and respond to the IOM Report in the fall of 2011.

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Background of the IOM Report and FDA’s Review of the 510(k) Program

The IOM Report is part of a two-pronged, comprehensive assessment of the 510(k) clearance process undertaken by FDA in response to concerns regarding the 510(k) program. Industry members are concerned that the 510(k) program’s opacity is stifling innovation, delaying clearance of promising medical technologies and imposing excessive burdens on industry, while certain consumers and health care professional groups worry that the program does not provide adequate assurances of safety and effectiveness nor sufficient information to allow well-informed diagnostic and treatment decisions.

As part of its comprehensive assessment, FDA commissioned the IOM to convene a committee to conduct a detailed analysis of the 510(k) process. At the same time, FDA’s Center for Devices and Radiological Health (CDRH) convened two bodies, a 510(k) Working Group and a Task Force on the Utilization of Science in Regulatory Decision Making, both tasked with considering potential improvements to the 510(k) program.

The IOM Report

In September 2009, FDA asked the IOM Committee to assess whether the 510(k) clearance process sufficiently protects patients and promotes public health by answering two principal questions:

1. Does the current 510(k) process optimally protect patients and promote innovation in support of public health?

2. If not, what legislative, regulatory, or administrative changes are recommended to optimally achieve the goals of the 510(k) process?

The IOM Committee’s review has not been without controversy. In advance of the anticipated release of the IOM Report, on June 28, 2011, the Washington Legal Foundation (WLF) filed a Citizen Petition with FDA requesting that the agency issue a determination that it is barred from using any advice or recommendation from the IOM Committee because that Committee is not “fairly balanced” as required by the Federal Advisory Committee Act of 1972 (FACA). According to the WLF Citizen Petition, the IOM Committee is not “fairly balanced” because it includes neither patient representatives nor members with experience in using the 510(k) program to gain FDA approval. In its Citizen Petition, WLF requested that FDA either proceed with its comprehensive review of the 510(k) program without the input of the IOM, or alternatively request that the IOM reconstitute its committee so as to comply with the “fair balance” requirement. FDA has yet to take action on the WLF Citizen Petition.

CDRH Plan of Action

Also in September 2009, CDRH convened its 510(k) Working Group and Task Force on the Utilization of Science in Regulatory Decision Making. In August 2010, those bodies released for public comment two preliminary reports containing 55 recommendations. In January 2011, CDRH issued a Plan of Action identifying 25 steps — relating to 40 of the preliminary report recommendations — that the Center intended to take in 2011 to improve the 510(k) process. CDRH has begun taking actions to implement those recommendations; most recently, on July 27, 2011, CDRH released

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3 The IOM Committee’s membership was also challenged by the Medical Device Manufacturers Association in a February 2010 letter to the IOM. See WLF Citizen Petition at 8.
a new Draft Guidance on “510(k) Device Modifications: Deciding When to Submit a 510(k) for a Change to an Existing Device.”

Nonetheless, CDRH’s January 2011 Plan of Action deferred action on a number of the more controversial proposals made by the Working Group and the Task Force, including seven key recommendations on which CDRH postponed a decision until after the IOM issued its report. In doing so, CDRH recognized that implementation of those recommendations might be problematic and that the IOM’s feedback might inform that process. CDRH’s Plan of Action, however, was issued late in the IOM Committee process. As a result, the IOM Report does not specifically address the seven deferred recommendations, although it considers most of the relevant issues to some degree. The appendix to this client advisory contains a chart summarizing each of the seven recommendations deferred by CDRH, its rationale for deferring decision on the recommendation, key relevant comments included in the IOM Report and the potential impact of the recommendation on the medical device industry if CDRH ultimately decides to adopt it.

**Summary of the IOM Report**

The IOM Committee approached its task by evaluating components of the 510(k) process and other factors it considered relevant, including: (i) the legislative history of the 510(k) program; (ii) the 510(k) regulatory framework; (iii) how the 510(k) process fits into the larger medical device regulatory framework; (iv) how the 510(k) process is implemented by FDA; (v) available postmarket information on the safety and effectiveness of 510(k)-cleared devices; and (vi) other factors that affect medical device regulation, such as the process of innovation and the environment in which medical devices are developed and commercialized. Key portions of the IOM Report’s analysis are summarized below, together with an overview of its conclusions and recommendations.

**Legislative Background of the 510(k) System**

To understand the current 510(k) system, the IOM Committee reviewed the legislative framework that governs medical devices in the United States. One theme of the IOM Committee’s findings in this respect is that weaknesses in FDA’s statutory mandate contribute to perceived flaws in the current 510(k) system and hamper FDA’s ability to evaluate new devices for safety and effectiveness. Key aspects of these findings include:

- The 510(k) process, as enacted by the Medical Device Amendments of 1976 (MDA) and subsequent amendments, was intended to assess whether new Class II medical devices (postamendment devices) were “substantially equivalent” to existing preamendment devices (predicate devices). Accordingly, this legal framework was not intended to evaluate new Class II medical devices based on a standalone evaluation of their safety or effectiveness.

- The MDA required FDA to classify existing medical devices into Class I, II or III, which categorize devices based on the relative level of risk they present. Preamendment devices placed into Class I or II were not systematically reviewed for safety or effectiveness; nonetheless, preamendment Class II devices may be used as predicate devices for postamendment devices seeking 510(k) clearance. Once cleared, those new devices become legally binding as predicate devices unless FDA rescinds a clear-

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ance or bars a device. Thus, generations of devices have achieved 510(k) clearance by being found substantially equivalent to predicate devices (often via a chain of post-amendment devices linking back to a preamendment device), generally without FDA evaluation of whether they are themselves safe and effective. Following enactment of the Safe Medical Device Amendments of 1990, when evaluating a 510(k) submission, FDA considers whether the new device is “as safe and effective” as, or raises “different questions of safety and effectiveness” than, the predicate device.

- Notwithstanding these concerns, the IOM Committee found that the ongoing use of preamendment Class II medical devices in clinical practice provides a “level of confidence” regarding their safety and effectiveness.
- The 510(k) process “was not designed to reward, recognize, or encourage innovation.” Any encouragement of innovation was a “byproduct of a process that, by minimizing unnecessary regulatory burdens, facilitated the entry into the market of new devices that did not raise novel questions of safety or effectiveness.”
- Administrative and legislative changes since the MDA have limited the issues and evidence that FDA may evaluate during 510(k) reviews. Changes have also encouraged “preferential use” of the 510(k) process over the more involved premarket approval (PMA) process by maintaining the disparity in the relative complexity and costs of the two approaches.

Medical Device Regulation

The IOM Committee analyzed FDA’s regulatory and enforcement framework for medical devices generally and specifically with respect to Class II devices, including a detailed comparison with FDA’s regulatory framework for drugs. A principal concept in this section relates to limitations on the resources available for FDA regulatory and enforcement activities, as well as procedural obstacles and weaknesses. Specific findings include:

- Although FDA has many tools for addressing safety risks in marketed devices, it has not used them extensively. FDA is subject to some procedural burdens when using them, but the IOM Committee did not view those burdens as causes of FDA’s “sparse use” of these tools. In addition, the IOM Committee found that CDRH is challenged by limited “human, fiscal, and technologic resources and capabilities.”
- The IOM Committee agreed with the CDRH 510(k) Working Group that CDRH lacks an adequate quality assurance mechanism for the 510(k) process that regularly assesses its “quality, consistency, and effectiveness.”

Analysis of the 510(k) Clearance Process

The IOM Committee examined specific aspects of the 510(k) program to identify issues related to the implementation and application of this process. Themes that emerged from this portion of the IOM Report include a lack of regulatory clarity or authority regarding certain aspects of the 510(k) process and the fact that FDA has inadequate or poorly organized data regarding various issues related to medical devices, including those cleared through 510(k) submissions. Key aspects of these findings include:

- When reviewing 510(k) submissions, FDA’s inadequate data systems impede its ability to trace chains of predicate devices back to the underlying preamendment devices.
• The IOM Committee analyzed the terms “intended use” and “indications for use,” which are separate, key concepts in the 510(k) clearance process. It found that the terms are “poorly defined and are susceptible to varying interpretations that lead to inconsistency in decision-making and create confusion.” In addition, FDA’s regulatory framework does not consistently differentiate between devices cleared solely as general “tools,” devices with specific clinical indications and “general tools that also have specific clinical applications.” The IOM Committee observed, however, that these distinctions may have a significant impact on a device’s “intended use” and “indications for use.”

• The IOM Report analyzes how off-label use of medical devices and limitations on FDA’s authority in this area complicate the 510(k) process. Although FDA may add warnings about certain off-label uses to a 510(k) device’s label, FDA cannot refuse to clear a device on the basis of potential unsafe or ineffective uses that are not indicated on the label, even if they are foreseeable. A related issue is that manufacturers potentially might describe only lower-risk intended uses in their 510(k) submissions and omit higher-risk uses for which the devices could also be used, in order to avoid subjecting devices to the more burdensome PMA process. Such omissions could have adverse public health consequences. Finally, limits on FDA’s capacity to collect data and conduct postmarketing surveillance of devices adversely affects the agency’s ability to identify off-label uses and resulting adverse events.

• The IOM Committee expressed concern that a number of preamendment Class III device types continue to be eligible for marketing through the 510(k) process rather than PMAs, because FDA has yet to finish its review of those devices pursuant to the MDA’s requirements.

• Both FDA and the medical device industry have expressed concerns about “the lack of clarity as to when clinical, bench, and other types of information should be required to support” a 510(k) submission. The IOM Committee found that there is not a consistent approach for how FDA “determines the need for clinical data, the type of such data, and the manner in which such data, if available, are integrated into the decision-making process.”

• The de novo process was intended to streamline the marketing clearance process for novel low- or moderate-risk devices by reclassifying them from automatic Class III designation into Class I or II. In practice, however, and contrary to the goals of the program, the de novo process has proven to be “cumbersome and lengthy” for some Class II devices. Accordingly, the de novo process has “not met its potential as an alternative regulatory pathway” for novel, moderate-risk devices.

Postmarketing Surveillance, Compliance and Enforcement

The IOM Committee noted that a strong postmarketing surveillance system is an essential component of an effective medical device regulatory system, particularly in light of the fact that it is not possible for FDA’s premarket medical device evaluation processes to guarantee the safety of all devices before they are marketed. Similar to concerns noted above, two of the prevailing observations in this section are that FDA lacks adequate data to effectively carry out postmarket analysis of devices and that the data that is collected is not effectively utilized. Major findings in this section of the report include:

• FDA’s postmarketing surveillance program is inadequate, in part because it depends on third parties to identify, collect and report data. These and other weaknesses prevent
FDA from effectively analyzing the safety and effectiveness of medical devices that are currently on the market.

- Medical device data that is collected through FDA’s current postmarketing surveillance system is not “systematically integrated into the premarket review process.”
- FDA has used “only sparingly” tools that are available to it to improve postmarketing surveillance. In addition, although some of FDA’s postmarketing surveillance programs are “scientifically promising,” they have not fulfilled their potential because of technical issues and inadequate resources.
- Non-FDA sources, such as other government agencies, clinical registries and electronic health records, have collected data about medical devices that could enhance FDA’s postmarketing surveillance programs, but FDA has not used these sources consistently and the data they collect is not standardized.

External Factors Affecting U.S. Medical Device Regulation

The IOM Committee recognized that FDA device regulation does not exist in isolation. Accordingly, the IOM Committee considered various factors that have the potential to affect the regulation of medical devices in the United States. Among other factors, the IOM Committee examined the impact of the 510(k) clearance process on medical device innovation. In particular, the IOM Committee found that:

- While the number of 510(k) submissions varies on an annual basis, the number of types of medical devices has grown significantly since the MDA. At the same time, medical device technology has evolved rapidly and devices have become increasingly complex, including with respect to 510(k) submissions that rely upon multiple or split predicates and combination products, which combine drugs, devices and/or biologic products.
- Manufacturers are using increasing amounts of software in devices and as devices, and software plays an increasingly important role in many devices. Although software offers many benefits, it also has been linked to an increasing number of recalls. Software poses particular challenges, which the regulatory process must take into account, and it must be evaluated differently than hardware, including through validation within the system context. The IOM Committee suggests that software validation evidence for 510(k) submissions be organized as an assurance case.
- The IOM Committee defined innovation as “improving the quality of, efficiency of, or access to healthcare,” and it observed that FDA considers attention to innovation to be at the heart of its overall mission. Nevertheless, the IOM Committee concluded that the changes in the 510(k) process over the past 35 years have neither “forced nor rewarded” innovation. The IOM Report argues that currently available data do not allow an assessment of whether those changes “promoted innovation in balance with public health rather than at its expense.”
- The medical device ecosystem affects the development and commercialization of medical devices and their availability to consumers. Industry-funded assessments of the 510(k) clearance process report a lack of predictability and transparency, which has an adverse effect on venture capital investment.
Although the United States is the largest consumer and producer of medical devices, the European Union, Japan, Canada and Australia also have large, stable medical device markets, and other countries are rapidly increasing consumption of medical devices. FDA and medical device manufacturers thus operate in the wider context of international markets and regulatory structures. The IOM Committee found that other countries with strong medical device regulatory regimes do not rely solely on substantial equivalence for premarket review of medium-risk devices.

**IOM Committee Conclusions and Recommendations**

As discussed, the IOM Committee approached CDRH’s questions by examining the 510(k) legislative and regulatory framework as well as available information about the safety and effectiveness of marketed devices. Based on that review and the findings discussed above, the IOM Committee came to two major conclusions:

- First, the “510(k) clearance process is not intended to evaluate the safety and effectiveness of medical devices with some exceptions [and] cannot be transformed into a premarket evaluation of safety and effectiveness as long as the standard for clearance is substantial equivalence to any previously cleared device.”

- Second, “[i]nformation that would allow an understanding of the extent to which the 510(k) clearance process either facilitates or inhibits innovation does not exist.”

In addition to these two conclusions, the IOM Committee proposed eight recommendations aimed at improving regulation of Class II medical devices. The first is by far the most significant. The IOM Committee recommended that FDA should obtain adequate information to inform the design of a new medical-device regulatory framework for Class II devices so that the current 510(k) process … can be replaced with an integrated premarket and postmarket regulatory framework that effectively provides a reasonable assurance of safety and effectiveness throughout the device life cycle. Once adequate information is available to design an appropriate medical-device regulatory framework, Congress should enact legislation to do so.

Despite recommending this sweeping change, the IOM Committee provided only minimal guidance as to the shape of a prospective regulatory framework, suggesting that it should be based upon consideration of existing and emerging technologies, integrate elements of FDA's Quality System Regulation for medical devices and include more extensive review of device labeling as well as a system to track labeling changes.

The IOM Committee also identified six attributes of an ideal regulatory framework. The process should: (1) be based on sound science; (2) be clear, predictable, straightforward and fair; (3) be self-sustaining and self-improving; (4) facilitate innovation that improves public health by making devices available in a timely manner and ensuring safety and effectiveness throughout their lifecycle; (5) apply relevant and appropriate regulatory authorities and standards throughout the life cycle to ensure safety and effectiveness; and (6) be risk-based.

The IOM Committee recognized that its proposed overhaul would take time to implement but suggested that “a move away from the 510(k) clearance process should occur as soon as reasonably possible.” The IOM Committee opined that further investment in the 510(k) process is not a wise
use of FDA’s scarce resources and therefore declined to recommend “specific changes in the 510(k) clearance process itself.” Instead, the IOM Committee made additional recommendations that it believes are useful in both the short and long term and that would conserve FDA’s scarce resources. Those recommendations are:

- FDA should develop and implement a comprehensive strategy to collect, analyze and act on postmarket performance information. The IOM Committee suggests that FDA give high priority to postmarketing surveillance with the goals of providing information for use in the premarket review process, informing the development and use of postmarketing tools to manage the risk-benefit ratio throughout the device lifecycle, and informing the design of a new device regulatory framework.
- FDA should review its postmarket regulatory authorities to identify existing limitations on their use and determine how those limitations can be addressed. The IOM Committee believes it is particularly important for FDA to be able to use such authorities when needed because 510(k) clearances are legally binding on FDA unless it rescinds such decisions or bars the devices.
- FDA should investigate the viability of a modified de novo process as a mechanism for evaluating the safety and effectiveness of Class II devices. The IOM Committee suggests that a pilot program of a modified de novo process would allow FDA to determine whether it is a feasible replacement for the current 510(k) clearance process.
- FDA should develop and implement a continuous quality-assurance process to track regulatory decisions with respect to devices, identify potential process improvements in the regulatory framework and address emerging issues that affect device decision-making.
- FDA should commission an assessment to determine the effect of the 510(k) process on facilitating or inhibiting innovation. The IOM Committee believes this assessment should include ways to measure innovation beyond “time to market” or the number of devices of a particular type on the market. It should instead focus on the relationship among “regulation, innovation, and patient health and safety.”
- FDA should develop procedures (including updated guidance) to ensure the safety and effectiveness of software used in devices, software used as devices and software used as a tool in producing devices. The IOM Committee believes that reliance on “best practices” is no longer sufficient as they often lag behind the pace of software innovation, and that an evidence-based approach should be developed for demonstrating the safety and effectiveness of device-related software.
- FDA should promptly call for PMA applications for or reclassify Class III devices that remain eligible for 510(k) clearance. The IOM Committee recognizes that this task requires resources but finds that it deserves high priority.

**Potential Impact on Industry of IOM Conclusions and Recommendations**

The most significant recommendation included in the IOM Report is certainly the IOM Committee’s call to overhaul the 510(k) process and replace it with a regulatory framework focused on evaluating the safety and effectiveness of each medical device throughout its lifecycle. This recommendation, however, is unlikely to be implemented given the significance of, reliance upon and investments in
the 510(k) program by FDA, the medical device industry, health care professionals and patients since
the program’s implementation in 1976.

Indeed, FDA, AdvaMed, the Medical Device Manufacturers Association and numerous medical device
manufacturers have already publicly expressed reservations about this recommendation. Industry repre-
sentatives have indicated that, although they recognize that the 510(k) process could be improved,
they believe it generally has been successful in encouraging innovation and facilitating the entry of
new products into the market in a less burdensome manner, while adequately ensuring the safety and
effectiveness of marketed products. In addition, FDA and industry representatives have pointed out that
the IOM Committee’s recommendation is based on a relatively narrow analysis of the 510(k) program.
They believe that safety and effectiveness in the 510(k) context instead should be judged based on the
entire regulatory context applicable to cleared devices (including quality system and current good man-
ufacturing practices requirements, special controls and postmarketing enforcement), which supports the
safety and effectiveness of cleared products.

Even if the IOM Committee’s recommendation is not implemented, the IOM Report offers a thought-
ful evaluation of the current 510(k) program and highlights a number of areas for potential reform,
many of which are already under consideration by FDA as part of its comprehensive assessment of
the program. Indeed, although expressing strong disagreement with the primary recommendation
and various other aspects of the IOM Report, industry representatives have expressed agreement with
certain of the IOM Committee’s other recommendations, as discussed below. Industry support for
areas of reform may make FDA and Congress more likely to act. In light of these considerations, the
IOM Report may increase focus on the following issues, each of which has potential implications for
the medical device industry:

- **Safety and Effectiveness:** One of the IOM Report’s main conclusions is that the current
  510(k) process does not evaluate a device’s safety and effectiveness, although the
  IOM Committee did not find evidence that there are questions about the safety and
effectiveness of marketed devices cleared through the 510(k) process. Among the
  recommendations tabled by CDRH pending the IOM Report are proposals to (i) create
  a Class IIb of medical devices for which clinical, marketing or other information is re-
  quired to support a 510(k) submission, (ii) define CDRH’s authority to rescind 510(k)
  clearances and (iii) clarify when a device should no longer be used as a predicate. If
  adopted, each of these recommendations would increase CDRH’s focus on the safety
  and effectiveness of Class II devices; they therefore may receive additional attention
  in light of the IOM Committee’s conclusion. Similarly, although industry representa-
  tives have expressed disagreement with the conclusion that the 510(k) process does
  not address safety and effectiveness, some have indicated that the process may benefit
  from, for example, greater differentiation among Class II products, which would allow
  CDRH to tailor its review protocols to better reflect the risks associated with different
  types of devices.

- **Innovation:** The IOM Committee concludes that current data does not permit an as-
  sessment of the 510(k) program’s effect on innovation, and it recommends that FDA
  commission such an assessment. Any such assessment would be unlikely to directly

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gov/NewsEvents/Newsroom/PressAnnouncements/ucm265908.htm; Press Release, AdvaMed, AdvaMed Statement on
node/1047.
impact the medical device industry in the short term. If evidence were to become available that the 510(k) program has had a negative impact on innovation, however, it could spur efforts to make the clearance process more transparent, easier to navigate and more focused on encouraging the marketing of devices that represent improvements over those already in the marketplace. FDA representatives and IOM Committee members have expressed their desire not to chill innovation as a result of changes to the 510(k) process, while industry representatives have reiterated their views that greater transparency and consistency in the process will further support innovation.

- **Postmarketing Surveillance and Authorities:** The IOM Committee devotes significant attention to what it perceives as weaknesses in FDA’s current postmarketing surveillance tools and data. CDRH is already considering a recommendation to seek greater authorities to require postmarket surveillance studies as a condition of clearance for certain devices. The IOM Report suggests that broader postmarketing surveillance may be appropriate, and encourages FDA to expand its use of current postmarketing tools such as device tracking and Section 522 surveillance studies. The IOM Report also encourages FDA to reexamine the limitations on its postmarket regulatory authorities to address safety issues involving marketed devices. If FDA heeds the IOM Committee’s suggestion, it may increase its use of current postmarketing surveillance tools, seek additional postmarketing tools and expand its use of its judicial and administrative enforcement powers. All of these would result in greater costs and burdens on medical device manufacturers, health care professionals and patients. On the other hand, if a strengthened postmarketing surveillance and enforcement program could be coupled with less onerous initial 510(k) clearance requirements, the overall process could be more effective in promoting innovation while adequately protecting patient health and safety.

- **De Novo Process:** The IOM Report encourages FDA to modify the *de novo* process to make it less time consuming and opaque and suggests that a modified *de novo* process could form the basis of a new regulatory framework for Class II devices. In particular, the IOM Committee recommends that, as part of a modified *de novo* process, CDRH consider ways to expedite development of special controls, guidances and standards for devices, and consider expanded use of external expertise, pre-investigational device exemption meetings and conditional clearances for devices with little premarket performance information. CDRH’s Plan of Action calls for draft guidance to streamline the *de novo* process, which is due by September 30, 2011. Although that guidance is unlikely to address the breadth of suggestions in the IOM Committee’s recommendation, some of them may find their way into public comments or CDRH’s final guidance. In any event, continued focus on the *de novo* process appears likely, and improvements may make it a faster and more cost-effective pathway for medical devices to reach the market. Industry representatives have expressed support for improving the *de novo* process and implementing it as an alternative or complement to the 510(k) process.

- **Software:** The IOM Report recommends that FDA recognize the differences between hardware and software and make significant changes to its current processes for evaluating software used with devices, in devices and as devices, including the use of assurance cases for software validation evidence. CDRH is currently soliciting public input on the broader use of assurance cases in 510(k) submissions and is developing an assurance case pilot program; the IOM Committee’s recommendation may inform CDRH’s consideration of assurance cases. On a broader level, the IOM Committee’s
recommendation may lead FDA to reexamine its approach to software evaluation. While this could make the 510(k) process better suited to software and better able to ensure the safety and effectiveness of such devices, it could also force software manufacturers to comply with new, and perhaps more burdensome, requirements.

**Next Steps in FDA’s 510(k) Review Process**

In response to the IOM Report, CDRH announced that it would open a public docket to receive comments on the Report and would hold a public meeting to discuss the Report’s recommendations. The public docket is open until September 30, 2011; FDA has not announced a date for the public meeting. FDA also has indicated that it will provide a response to the IOM Report at the end of October 2011. In addition, CDRH has begun to issue draft guidances addressing recommendations for improvements to the 510(k) program, according to the schedule set forth in CDRH’s Plan of Action. These include the recently released draft guidance on modifications to 510(k) devices and anticipated guidances on clinical trials, the *de novo* classification process and numerous other elements of the 510(k) program. Once those draft guidances are released, they will be open for public comment.
Appendix: IOM Comments on 510(k) Recommendations Deferred by FDA

The following chart summarizes the seven recommendations from CDRH’s 510(k) Working Group and Task Force on the Utilization of Science in Regulatory Decision Making that were deferred in CDRH’s January 2011 Plan of Action, CDRH’s rationale for deferring a decision on each such recommendation, and the potential impact of each recommendation on the medical device industry if CDRH ultimately decides to adopt it. In addition, although the IOM Report did not systematically address each deferred recommendation because CDRH’s Plan of Action was issued late in the IOM Committee’s process, the chart also summarizes relevant comments included in the IOM Report.

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<th>CDRH Recommendation</th>
<th>CDRH Rationale</th>
<th>IOM Comments</th>
<th>Potential Impact</th>
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<td>CDRH should consolidate the terms “indication for use” and “intended use” into a single term, “intended use.”</td>
<td>Comments expressed concern that any change in a device’s label indications could be considered a change in its “intended use,” which might have a chilling effect on innovation.</td>
<td>These key terms are poorly defined, and varying interpretations lead to inconsistent decision-making and confusion. Although FDA’s regulatory framework does not differentiate between devices used as general tools, devices with specific clinical indications and “general tools that also have specific clinical applications,” these distinctions may have significant implications with respect to intended use and indications for use.</td>
<td>Changes to indications to use could be deemed changes to intended use; would require new designation for information included in “indications for use” section of label.</td>
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<td>CDRH’s statutory authority to consider off-label use when determining the intended use of a device should be expanded.</td>
<td>Comments expressed concern that expanded off-label authority would be burdensome for manufacturers, interfere with the practice of medicine and negatively impact patient care. CDRH clarified that the proposed authority was to be limited to instances in which a manufacturer seeks clearance for one use in order to improperly avoid providing data regarding a true intended use.</td>
<td>Because FDA only reviews 510(k) submissions based upon proposed labeling, it has limited ability to prevent unsafe or ineffective clinical applications even when they are foreseeable and reasonably predictable. FDA lacks reliable tools for collecting data on the use of and health outcomes related to cleared devices.</td>
<td>Statutory language would have to be very narrowly drafted to avoid unintended burden on industry, physicians and patients while still capturing the specific circumstance CDRH seeks to address.</td>
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<td>CDRH Recommendation</td>
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<td><strong>CDRH should issue guidance on when a device should no longer be available for use as a predicate.</strong></td>
<td>Comments raised concerns that disallowing predicates would limit the availability of the 510(k) pathway, and questioned what would happen to marketed products that relied on disallowed predicates in their 510(k) submissions.</td>
<td>Devices cleared through the 510(k) process become legally binding on FDA as predicates, unless the clearance is rescinded or the device is barred. CDRH believes there are “important limitations” on FDA’s postmarket authorities, including authorities to rescind 510(k) clearances or bar devices; the IOM Committee identified procedural requirements applicable to those authorities but not inherent limitations, and recommended that FDA review its postmarket authorities and address any limitations.</td>
<td>Disallowing predicates could call into question the clearance of devices that relied upon those predicates, perhaps even in cases where any safety problems were limited to the disallowed predicate.</td>
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<td><strong>CDRH should issue a regulation on its rescission authority.</strong></td>
<td>Comments questioned whether additional regulation was necessary in light of CDRH’s current authority, as well as what would happen to marketed devices that had relied on a predicate for which the 510(k) was rescinded.</td>
<td>Devices cleared through the 510(k) process become legally binding on FDA as predicates, unless the clearance is rescinded or the device is barred. CDRH believes there are “important limitations” on FDA’s postmarket authorities, including authorities to rescind 510(k) clearances or bar devices; the IOM Committee identified procedural requirements applicable to those authorities but not inherent limitations, and recommended that FDA review its postmarket authorities and address any limitations.</td>
<td>Rescinding predicates could call into question the clearance of devices that relied upon those predicates, perhaps even in cases where any safety problems were limited to the rescinded predicate.</td>
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<td><strong>CDRH should require manufacturers to keep one unit of a device available.</strong></td>
<td>Comments raised concerns that it would be burdensome for manufacturers to store device prototypes or to be required to manufacture certain devices prior to receiving 510(k) clearance.</td>
<td>Not addressed in IOM Report.</td>
<td>Could be costly and burdensome for manufacturers of larger or custom devices, and could force manufacturers to incur manufacturing costs without knowing whether a device will ultimately be cleared.</td>
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<td>CDRH Recommendation</td>
<td>CDRH Rationale</td>
<td>IOM Comments</td>
<td>Potential Impact</td>
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<td>CDRH should issue guidance to create a “Class IIb” applicable to devices for which clinical or manufacturing information or additional postmarket evaluation would typically be necessary to support a substantial equivalence determination.</td>
<td>Although CDRH maintained that Class IIb would be an administrative sub-class that would not affect the three-tier statutory system, comments questioned CDRH’s authority to create Class IIb and suggested there would be confusion between Class IIb and Class III PMA devices. Comments also raised concerns that increased scrutiny of Class IIb devices would inhibit patient access.</td>
<td>The IOM Committee did not comment specifically on the Class IIb recommendation. It noted, however, that FDA and the medical device industry have expressed concerns about the lack of clarity as to when clinical, bench and other information is required to support a 510(k) submission, and that there is no consistent approach for how FDA determines the need for clinical data, the type of data required and the manner in which data is integrated into the decision-making process.</td>
<td>Could provide clarity for manufacturers of Class IIb devices as to information required to demonstrate substantial equivalence, but would likely significantly increase the time, effort and expense involved in preparing 510(k) submissions for Class IIb devices.</td>
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<td>CDRH should seek greater authorities to require postmarket surveillance studies as a condition of clearance for certain devices.</td>
<td>Comments suggested that additional authority is unnecessary and that postmarket surveillance studies could be overly burdensome for industry, medical professionals and/or patients and might stifle innovation.</td>
<td>The IOM Committee indicated support for conditioning clearances on postmarketing surveillance in certain cases. It noted that FDA’s postmarketing surveillance programs for medical devices have significance weaknesses. These programs have potential but require additional investments of resources and attention, and there is little current collaboration in the collection of data among FDA and other entities. These inadequacies, and the resulting lack of useful, consistent and reliable data, make it impossible to draw confident conclusions about the performance of marketed devices.</td>
<td>Could result in faster approvals conditioned on postmarket surveillance, but also has the potential to significantly increase the burden on 510(k) submitters, medical professionals and patients.</td>
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