DEPARTMENT OF HEALTH & HUMAN SERVICES

Office of Inspector General

Memorandum

Date FEB 26 1993

From Bryan B. Mitchell
Principal Deputy Inspector General

Subject Follow-Up Review On Internal Control Weaknesses in the Food and Drug Administration's Medical Device 510(k) Review Process (A-03-92-00605)

To Audrey F. Manley
Acting Assistant Secretary
for Health

The attached Office of Inspector General (OIG) final report provides you with the results of our follow-up review of an OIG management advisory report (MAR) entitled, "Internal Control Weaknesses in the Food and Drug Administration's Medical Device 510(k) Review Process" (CIN: A-15-89-00065), which was issued on July 5, 1990. The 510(k) process refers to the section of the Food, Drug, and Cosmetic Act that requires medical device manufacturers to submit pre-market notification to the Food and Drug Administration (FDA) prior to marketing a medical device. Our follow-up work indicated that FDA has made progress in implementing corrective actions in its 510(k) program, but more needs to be done to fully address the weaknesses we disclosed in our earlier report.

Our follow-up review was made in response to a request from the Subcommittee on Oversight and Investigations (Subcommittee), House Committee on Energy and Commerce. The Subcommittee was concerned that, despite the development of a corrective action plan by FDA, conditions identified in our MAR had not substantially changed. On March 23, 1992, we provided the Subcommittee status information regarding our follow-up review in preparation for medical device hearings held by the Subcommittee on March 25, 1992.

In our 1990 report, we recommended that FDA address weaknesses in its 510(k) review process through the following actions:

- implementing a management information system to track reviewer work load information and productivity at the individual reviewer level and to detect possible manipulation of the process;

- documenting that "first-in, first-reviewed" is the review sequencing policy for 510(k) submissions, delineating acceptable exceptions to the policy, and requiring documentation in the file when the policy is not used:

- determining whether its current preferential treatment policy for expediting certain reviews of 510(k) submissions is appropriate;

- ensuring that the "first-in, first-reviewed" policy is uniformly applied by all reviewers;

- continuing to implement a documentation policy and format that can assure the timeliness, fairness, and completeness of 510(k) reviews;

- augmenting the 510(k) process by designing a program for selectively testing devices, validating test results submitted in 510(k)s, and conducting pre-market inspections of manufacturers' facilities:

- establishing a quality control review system that involves independent review of completed 510(k) decisions by an FDA group either inside or outside the Office of Device Evaluation to evaluate and critique the adequacy of reviewed submissions:

- implementing controls related to employee/industry contact, developing appropriate written policies and procedures to restrict these contacts and to safeguard submission files, and implementing adequate physical security mechanisms for device reviewer offices;

- disclosing in the Federal Managers' Financial Integrity Act (FMFIA) process that there are internal control weaknesses in the 510(k) process which, when taken as a whole, constitute a material weakness, and including corrective actions that have been taken or are underway; and

- monitoring corrective actions until the weaknesses are resolved.

In its December 1990 response to our final report, the Public Health Service (PHS) indicated that it concurred fully or in part with 9 of the 10 recommendations. Our follow-up review disclosed that FDA had fully or partially taken steps to address all 10 of the recommendations included in the prior OIG report. The FDA had fully implemented four recommendations: establishing a written "first-in,

firs-t-reviewed" sequencing policy; analyzing the propriety of its policy to expedite certain 510(k) submissions: using the FMFIA process to disclose agency-wide material weaknesses, which included the 510(k) process: and monitoring corrective actions.

We found that FDA partially implemented six of our recommendations. Specifically, it had not: fully implemented a method to detect possible manipulation of the review process; ensured compliance with the "first-in, first-reviewed" policy; required full documentation of 510(k) decisions; fully implemented alternate actions to augment the 510(k) review process by examining, for example, the product sample: implemented a quality control review system focused on the scientific aspects of the 510(k) review; and fully implemented controls over access to personnel and offices.

Accordingly, we believe more needs to be accomplished in these partially implemented areas in order to more fully address the internal control weaknesses we initially disclosed. We are making recommendations in this report, which, if implemented, should help strengthen the internal controls of the 510(k) process.

The PHS, in its October 22, 1992 response to our draft report, generally concurred with our recommendations. The PHS comments have been incorporated in the PHS Comments and OIG Response sections throughout the report and are included in their entirety in the Appendix.

We would appreciate your comments on this final report within 60 days. Should you wish to discuss the issues raised by our review and recommendations, please call me or have your staff contact Daniel W. Blades, Assistant Inspector General for Public Health Service Audits, at (301)443-3582.

Attachment

cc:
David A. Kessler, M.D.
Commissioner of Food and Drugs

Department of Health and Human Services

OFFICE OF INSPECTOR GENERAL

FOLLOW-UP REVIEW ON INTERNAL CONTROL WEAKNESSES IN THE FOOD AND DRUG ADMINISTRATION'S MEDICAL DEVICE 51 0(K) REVIEW PROCESS

FEBRUARY 1993 A-03-92-00605

EXECUTIVE SUMMARY

We conducted a follow-up review of an Office of Inspector General (OIG) management advisory report (MAR) entitled, "Internal Control Weaknesses in the Food and Drug Administration's Medical Device 510(k) Review Process" (CIN: A-15-89-00065), which was issued on July 5, 1990. The 510(k) process refers to the section of the Food, Drug, and Cosmetic Act that requires medical device manufacturers to submit pre-market notification to the Food and Drug Administration (FDA) prior to marketing a medical device. Our follow-up work indicated that FDA has made progress in implementing corrective actions in its 510(k) program, but more is needed to be done to fully address the weaknesses we disclosed in our earlier report.

Our follow-up review was made in response to a request from the Subcommittee on Oversight and Investigations (Subcommittee), House Committee on Energy and Commerce. The Subcommittee was concerned that, despite the development of a corrective action plan by FDA, conditions identified in our MAR had not substantially changed.[1]

In our prior report, we recommended that FDA address weaknesses in its 510(k) review process through the following actions:

- implementing a management information system (MIS) to track reviewer work load information and productivity at the individual reviewer level and to detect possible manipulation of the process;
- documenting that "first-in, first-reviewed" is the review sequencing policy for 510(k) submissions, delineating acceptable exceptions to the policy, and requiring documentation in the file when the policy is not used:
- determining whether its current preferential treatment policy for expediting certain reviews of 510(k) submissions is appropriate;
- ensuring that the "first-in, first-reviewed" policy is uniformly applied by all reviewers;
- continuing to implement a documentation policy and format that can assure the timeliness, fairness, and completeness of 510(k) reviews;

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[1] This audit report was preceded by an OIG fact sheet, issued on March 23, 1992, in response to a request by staff of the Subcommittee. The fact sheet provided essentially the same information presented in this report, without conclusions and recommendations.

- augmenting the 510(k) process by designing a program for selectively testing devices, validating test results submitted in 510(k)s, and conducting pre-market inspections of manufacturers' facilities;

- establishing a quality control review system that involves independent review of completed 510(k) decisions by a FDA group either inside or outside the Office of Device Evaluation (ODE) to evaluate and critique the adequacy of reviewed submissions:

- implementing controls related to employee/industry contact, developing appropriate written policies and procedures to restrict these contacts and to safeguard submission files, and implementing adequate physical security mechanisms for device reviewer offices:

- disclosing in the Federal Managers' Financial Integrity Act (FMFIA)[2] process that there are internal control weaknesses in the 510(k) process which, when taken as a whole, constitute a material weakness, and including corrective actions that have been taken or are underway: and

- monitoring corrective actions until the weaknesses are resolved.

In its December 1990 response to our final report, the Public Health Service (PHS) indicated that it concurred fully or in part with 9 of the 10 recommendations. Our follow-up review disclosed that FDA has fully or partially taken steps to address all 10 of the recommendations included in the prior OIG report. The FDA had fully implemented four recommendations: establishing a written "first-in, first-reviewed" sequencing policy: analyzing the propriety of its policy to expedite certain 510(k) submissions: using the FMFIA process to disclose agency-wide material weaknesses, which included the 510(k) process: and monitoring corrective actions.

As indicated below, we found that FDA partially implemented six of our recommendations.

- The FDA did not fully implement its alternate action aimed at detecting possible manipulation of the 510(k) process. It developed and tested an exception report to detect possible manipulation,

[2]The FMFIA requires Federal agencies to periodically review their systems of internal controls and to report annually on the systems' status.

but the revisions determined to be needed to the report were not made. As a result, FDA is not using the report on a regular basis.

- The FDA established a "first-in, first-reviewed" policy for 510(k) submissions, and our review at two branches of ODE verified compliance with the policy. The FDA, however, did not establish a monitoring policy to measure compliance throughout ODE.

- Although FDA has developed and implemented a 510(k) documentation policy, we believe this policy can be further enhanced by requiring reviewers of 510(k) submissions to provide a written explanation for each question contained on the documentation checklist. Currently, written explanations are required for all questions answered negatively and only on some that are answered positively.

- The FDA agreed to implement four alternate actions in response to our recommendation that it augment the pre-market notification review process in order to further assure the process' integrity. The FDA had implemented two of the four alternate actions at the time of our follow-up review. These actions involved requiring applicants to certify the truthfulness of their submissions, and developing a policy for handling cases of questionable submission information. We determined that the other two alternate actions, involving sampling and testing devices and conducting pre-market inspections, had not been implemented.

- The FDA established a quality control review system that involved independent review of completed pre-market notification decisions. The reviews, however, focused mainly on the 510(k) process rather than the scientific validity of the decisions made by the 510(k) reviewers.

- The FDA established policies and procedures to strengthen controls over access to personnel, records and office facilities. Our follow-up review showed that while the controls over access to records were satisfactory, industry access to personnel and office facilities remained a problem.

Accordingly, our recommendations in this report focus on the areas where we believe more needs to be accomplished to address the internal control weaknesses disclosed in our initial MAR. The FDA should consider our evaluation of the 510(k) corrective actions when determining the status of the

material internal control weaknesses related to its product application processes, which were first disclosed in 1990. Our recommendations, if implemented, should help strengthen the internal controls of the 510(k) process.

The PHS, in its October 22, 1992 response to our draft report, generally concurred with our recommendations, and described actions underway or planned to implement them. The PHS also offered a series of technical comments, which we incorporated where appropriate, intended to clarify information contained primarily in the Background section of the report. The PHS comments have been incorporated into the PHS Comments and OIG Response sections throughout the report and are included in their entirety in the Appendix.

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INTRODUCTION

We conducted a follow-up review of an OIG report entitled, "Internal Control Weaknesses in the Food and Drug Administration's Medical Device 510(k) Review Process" (CIN: A-15-89-00065), which was issued on July 5, 1990. Our follow-up review was made in response to a December 1991 request from the Subcommittee. The Subcommittee was concerned that, despite the development of a corrective action plan by the FDA, conditions identified in our 1990 report had not substantially changed.

Our objective was to assess FDA's progress in implementing OIG recommendations pertaining to the internal control weaknesses of the medical device 510(k) program that we disclosed in our 1990 report. We focused our review on corrective actions taken by FDA from January 1990, which is the time we completed our initial field work, until February 1992, when we completed our follow-up work.

BACKGROUND

FDA Review of Medical Devices

The 1976 Medical Device Amendments (Amendments) (Public Law 94-295) to the Food, Drug, and Cosmetic Act authorized FDA to regulate medical devices using a three-tiered class system and established a pre-market notification process. The FDA has placed medical devices into one of three classifications according to the degree of regulation necessary to provide reasonable assurance of their safety and effectiveness. The class into which a device is placed determines the safety and effectiveness requirements that must be met before a manufacturer markets the device into interstate commerce.

The Amendments and the Safe Medical Devices Act of 1990 (Public Law 101-629) provide definitions for the device classes. Class I devices, such as tongue depressors and bedpans, are those devices subject to general regulatory controls applicable to all devices. Class II devices, such as hearing aids and syringes, are devices for which reasonable assurance of safety and effectiveness can be obtained by application of "special controls," including performance standards, post-market surveillance, and patient registries. Class III devices, such as pacemakers and heart valves, are: (1) those for which insufficient information exists to determine that general controls are sufficient to provide reasonable assurance of safety and effectiveness or to develop a performance standard: and (2) life sustaining and/or life supporting, of substantial importance in preventing impairment of health, or present a potential unreasonable risk of illness or injury.

The FDA has identified about 1,700 types of devices that require classification. Class I devices represent about 37 percent; class II devices represent about 51 percent; and class III devices represent about 9 percent of the devices classified. About 3 percent of the devices are classified in more than 1 class, according to their intended use.

The Amendments require that, at least 90 days prior to marketing a device, a manufacturer submit to FDA a pre-market notification in accordance with section 510(k) (hereafter called the 510(k) submission) of the Food, Drug, and Cosmetic Act. By reviewing the 510(k) submission, FDA can determine whether the device is substantially equivalent to a device already placed into one of the three classification categories. The determination of substantial equivalence involves a comparison between the new device and a device already on the market. Devices found to be substantially equivalent to a device on the market before the 1976 Amendments that are not yet subject to pre-market approval requirements or a class I or class II post-1976 device may be marketed. Those found not to be substantially equivalent are placed into class III and require an approved pre-market approval application (PMA), which details the device's safety and effectiveness.

Currently, some class III devices on the market before 1976 are not subject to pre-market approval; instead, they are subject to pre-market notification and general regulatory controls. However, the Safe Medical Devices Act of 1990 requires FDA to receive data on these devices from the manufacturers by December 1995 so that the agency can determine whether these older devices should be reclassified into lower classes, or retained in class III. In the latter case, the manufacturer would be required to submit a PMA.

Within FDA's Center for Devices and Radiological Health (CDRH), ODE is responsible for reviewing the submissions of manufacturers seeking to market their devices through the 510(k) pre-market notification process, the PMA process or the investigational device exemption (IDE) process. The ODE comprises five medical device review divisions: Division of Cardiovascular, Respiratory, and Neurological Devices; Division of Reproductive, Abdominal, Ear, Nose and Throat, and Radiological Devices: Division of Clinical Laboratory Devices; Division of General and Restorative Devices: and Division of Ophthalmic Devices. Each of the divisions is staffed with reviewers who examine applications from manufacturers seeking to market their medical devices.

To provide overall coordination for the medical device review processes, ODE has a program operations staff with a group devoted to overseeing the operation of the 510(k) process

(hereafter referred to as the 510(k) staff). The ODE is also supported by a program integrity officer who serves as the focal point for integrity-related issues and initiatives. Within CDRH, the Office of Compliance and Surveillance (OCS) conducts or directs regulatory activities, including facility inspections, with respect to medical devices.

Since 1976, FDA has received over 65,000 pre-market notification submissions, of which 5,770 were received in Fiscal Year (FY) 1991. According to ODE statistics at the time our follow-up review was conducted, 99.6 percent of the 510(k) decisions rendered in FY 1991 were completed within 90 days, with an average processing time of 81 days. Although the medical device law does not specify a time period for FDA to determine substantial equivalence, ODE has established a 90-day period as its processing goal.

OIG Follow-Up Reviews

According to the 1983 Comptroller General's publication entitled, Standards for Internal Control in the Federal Government, an auditee is responsible for: (1) promptly evaluating findings and recommendations reported by auditors: (2) determining proper actions in response to audit findings and recommendations: and (3) completing, within established time frames, all actions that correct or otherwise resolve the matters brought to its attention. The audit resolution process begins when the results of an audit are reported to management, and is completed only after action has been taken that: (1) corrects identified deficiencies: (2) produces improvements: or (3) demonstrates the audit findings and recommendations are either invalid or do not warrant management action.

As part of its responsibility to track audit recommendations and corrective actions planned or taken, FDA prepares a quarterly corrective action plan status report. This corrective action reporting mechanism identifies each audit recommendation and lists objectives, milestones, status, and remarks. The report is submitted to PHS.

The OIG conducts follow-up reviews to determine whether recommended actions have been implemented or are in process, and such actions have led to or will lead to resolution of problems noted. Our follow-up work was conducted pursuant to OIG's responsibilities under the Office of Management and Budget's Circular A-50 to review and report on management responses to OIG findings.

OBJECTIVES, SCOPE, AND METHODOLOGY

The objective of our review was to determine FDA's progress in implementing recommendations made in our MAR entitled, "Internal Control Weaknesses in the Food and Drug Administration's Medical Device 510(k) Review Process," issued on July 5, 1990. To accomplish our objective, we reviewed prior audit working papers, the final MAR, PHS' response to the report, and PHS' status reports on actions taken or planned to implement the recommendations contained in our report. We also reviewed policies and procedures issued in response to our recommendations, and interviewed selected CDRH and ODE officials, including the 510(k) staff, associate and division directors, branch chiefs, the ODE integrity officer, and CDRH's security official.

We selected a judgmental sample of 100 510(k) submissions (50 from the General Hospital Devices Branch and 50 from the Anesthesiology and Respiratory Branch) and tracked them through the review process to determine whether they were reviewed on a "first-in, first-reviewed" basis. We also selected a judgmental sample of 22 510(k) files to determine the extent of ODE's quality control review and the extent of documentation supporting each reviewer's decision.

Our review was conducted in accordance with generally accepted government auditing standards at ODE offices located in Rockville, Maryland during January and February 1992.

FINDINGS AND RECOMMENDATIONS

Our evaluation of FDA's implementation of the recommendations included in our 1990 MAR is presented below. Our recommendations from the MAR are presented followed by a brief description of the corrective actions taken or planned, our evaluation of these actions, additional recommendations, PHS' response to the recommendations and our comments where appropriate.

In its December 1990 response to our final report, PHS indicated that it concurred fully or in part with 9 of the 10 recommendations. Our follow-up review disclosed that FDA has fully or partially taken steps to address all 10 of the recommendations included in the prior OIG report, with 4 being fully implemented and 6 being partially implemented.

We are making additional recommendations in this report which, if implemented, should help strengthen the weak internal controls we identified in our prior report, and which had not yet been fully addressed as of the completion of our follow-up review. The FDA should consider our evaluation of the 510(k) corrective actions when determining the status of the material

internal control weaknesses related to its product application processes, which were first disclosed in 1990.

OIG Recommendation Number 1
Management Information System

Implement its plans to redesign the MIS to capture and analyze work load and productivity information at the individual reviewer level and to detect possible manipulation of the process.

FDA Corrective Action

The PHS agreed that the 510(k) MIS should provide management with the necessary information for assessing the efficiency and effectiveness of the 510(k) program, but disagreed that a system to track individual reviewers' work load and productivity was necessary. The FDA believed that since submissions from competing manufacturers are generally processed by the same reviewer, inter-reviewer comparisons of work load and productivity would not be relevant to detecting possible manipulation.

The FDA believed that a more useful method of detecting manipulation would be to analyze variances in processing times and decision outcomes for different manufacturers' submissions within the same device type. Using such a method, FDA envisioned that it could ascertain whether competing manufacturers' submissions are processed in comparable periods of time and with comparable "success" rates. Differences in these areas would be a starting point for further analysis. The FDA indicated that, although the data needed to implement the alternative method was already being captured by the existing 510(k) MIS, additional steps were needed to develop the report formats to present the data.

OIG Follow up

The FDA did not agree with our recommendation to redesign the MIS to track work load and productivity information at the reviewer level and to use such information to detect manipulation of the process. For tracking work load and productivity, our review indicated that ODE division managers --branch chiefs, associate directors, and directors--were tracking the reviewers' processing of submissions using individually developed methods. For example, one branch chief maintained a manual log of all submissions, which included information such as the reviewer assigned to the submission and the due date. Another branch chief computerized this information. Above the division level, ODE officials periodically reviewed the divisions' overall processing times

and the 75-day report identifying all 510(k) submissions in-house 75 or more days.

For detecting possible manipulation of the review process, FDA proposed the development of an exception report as an alternate action to redesigning its MIS. The FDA, however, has not fully implemented this corrective action. Thus, it is not currently possible to determine the report's usefulness as a monitoring tool.

The exception report, which was programmed into ODE's MIS in January 1991, was tested by ODE in August 1991. For the period July 1, 1990 through June 30, 1991, the test identified device product code groups whose review times, or number of holds for additional information, exceeded an expected variation. For the device groups identified, each 510(k) in the group was listed for management follow-up to further assess the reason for exceeding processing expectations.

The ODE test of the exception report format revealed that modifications were needed. For example, the format did not specify the product name or which reviewer processed the 510(k). According to ODE officials, the report format required intensive resources to determine the reasons for the exceptions --resources which they stated were not available in ODE for the effort. As a result, ODE determined that the report would have to be modified to make it more user-friendly and to reduce staff time needed to validate the exceptions. The ODE, however, has not established a time frame to implement the needed report changes. The ODE officials indicated that the report in its current format could be used on a specific case basis but needed modifications in order to be utilized regularly.

Conclusions and Recommendations

The ODE's methods for tracking work load and productivity, while varied, appeared reasonable and should provide managers with the information needed to oversee and plan for reviewers' work loads. The ODE, however, has not fully implemented its alternate action to implement an exception report designed to detect possible manipulation of the 510(k) process.

We, therefore, recommend that FDA:

1. Make the modifications to its exception report that were identified by ODE. These modifications include adding the product name and the reviewer's name to the report. The revised report should be tested and, when finalized, run quarterly.

2. Investigate the 510(k) submissions whose processing exceeded expected variations and document actions taken to resolve these exceptions.

3. Require ODE to provide summaries of the results of its review of identified exceptions as part of the corrective action reporting mechanism.

PHS Comments and OIG Response

The PHS agreed that ODE should revise its reporting of exceptions, resolve these exceptions, and provide summary reports. The modifications to the exception report suggested by ODE have been made by CDRH's Office of Information Systems (OIS). The revised report will be tested after OIS conducts a training session with intended users. Additional refinements to the exception report will be made as needed.

The PHS stated that FDA had reservations about executing the program on a quarterly basis. The CDRH believes that the exception report should be done on an annual basis, with analysis and follow-up being conducted on as many variances as resources permit. This is because investigating exceptions, taking appropriate follow-up actions, and developing summaries will entail substantial involvement by ODE managers and review staff. The CDRH is in the process of converting the current 510(k) data base into a new language. The conversion, which will enhance and expand user capability, is expected to take more than 1 year to complete and, therefore, additional documentation and report capabilities will not be available to ODE until sometime in FY 1994. After the new 510(k) system is operational, ODE will provide quarterly follow-up summary reports on all variances generated by the exception report.

We believe that PHS' actions meet the intent of our recommendations, with one exception--the frequency in which the exception report will be run. The PHS states that the report will be run annually at least until the new 510(k) process is operational. We believe that the exception report should be run quarterly and all variances analyzed, prioritized, and followed up, until the results warrant a change in scheduling. Since the primary purpose of the exception report is to identify manipulation of the 510(k) process, it is critical that exception information is generated and analyzed on a more frequent basis.

OIG Recommendation Numbers 2 & 4
"First-In, First-Reviewed" Policy

Document that "first-in, first-reviewed" is the review sequencing policy for 510(k) submissions, delineating

acceptable exceptions to the policy, and requiring documentation in the submission file when the policy is not used: and ensuring that the "first-in, first-reviewed" policy is uniformly applied by all reviewers.

FDA Corrective Action

The PHS agreed with these recommendations. It stated that: (1) CDRH was developing written guidance on a "first-in, first-reviewed" sequencing policy; and (2) the policy would be reported under the FMFIA mechanism and would include a monitoring process for all **ODE** reviewers. In addition, PHS stated that ODE issued Program Integrity Memorandum 189-2, on October 25, 1989, setting forth procedures for the assignment of review documents from primary reviewers to other reviewers.

OIG Follow up

A written "first-in, first-reviewed" policy was established for the review of 510(k) submissions. However, ODE did not establish a method to determine if this policy was being uniformly applied by all reviewers.

The ODE issued Integrity Memorandum 190-2 on August 24, 1990, replacing Integrity Memorandum 189-2, to address the assignment of review documents to ODE staff and the reassignment of such documents from primary reviewers to other reviewers. On May 29, 1991, ODE issued, in draft, Integrity Memorandum 191-l focusing on document review processing. This memorandum, issued in final on February 12, 1992, reaffirms the basic principle that reviewers attempt to review documents on the basis of the date submitted. The policy:

- provides guidance for sequencing reviews within and among the varfous categories of device application submissions --IDEs, 510(k)s, and PMAs;
- identifies frequently occurring circumstances that require or permit deviations frbm the general principle for sequencing document reviews within each device submission category: and
- permits reviewers to review their work load to determine if submissions can be completed without interfering with the review of those submitted with earlier due dates, and enables reviewers to complete these submissions as soon as possible.

[3]A researcher submits an IDE to FDA when conducting studies involving human subjects to develop safety and effectiveness and other data for a medical device. An approved IDE permits a device that would otherwise be subject to marketing clearance or approval to be shipped lawfully for a clinical study.

To verify the implementation of this policy, we selected a judgmental sample of 100 510(k) files undergoing review during September and October 1991 in 2 ODE branches. Our review showed that only 4 of the 100 submissions were not processed in the sequence in which they were received. The time differences were negligible.

Our review indicated general compliance with the policies of the two ODE branches that we examined. However, we found that ODE did not have full assurance that the review sequencing policy was being followed throughout the organization. This was because ODE was not sampling reviewer work load to ascertain whether device submissions were being processed on a "first-in, first-reviewed" basis.

Although ODE was not performing such sampling to assess compliance with the "first-in, first-reviewed" policy, officials stated, as previously mentioned under the discussion for Recommendation 1, that division level staff monitored the processing of submissions. In addition, the 510(k) staff periodically reviewed the divisions' overall processing times and the 75-day report identifying all 510(k) submissions in-house 75 or more days. Nevertheless, based on our interviews with division managers, it appeared there was little consistency throughout ODE in methods for measuring compliance with the review sequencing policy.

Conclusions and Recommendations

The ODE established a "first-in, first-reviewed" policy for 510(k) submissions, but had not established a method to determine if this policy was being complied with uniformly throughout ODE.

We, therefore, recommend that FDA require ODE to:

1. Periodically sample reviewer work load to ensure that reviewers are uniformly complying with the "first-in, first-reviewed" policy.

2. Submit summary results of the periodic reviews as part of the corrective action reporting mechanism.

PHS Comments and OIG Response

The PHS agreed that ODE should periodically sample reviewer work load and submit summary results of these reviews. The PHS stated that it will implement our recommendations when the new 510(k) system becomes operational, because the manual sampling of the medical device work load and developing summary reports on a routine basis would pose an additional burden on the ODE administrative staff. When the system

becomes operational during FY 1994, PHS will **generate** automated reports of "first-in, first-reviewed" activities.

We believe that at a minimum, FDA should monitor compliance with the "first-in, first-reviewed" procedure on a rotating basis among ODE's divisions until the new 510(k) system becomes operational. Unless ODE periodically reviews reviewer work load, it has no assurance that the medical device reviewers are complying with established procedures for processing applications on a "first-in, first-reviewed" basis.

OIG Recommendation Number 3
Propriety of Expeditins 510(k) Reviews

Determine whether its current preferential treatment policy for expediting certain reviews of 510(k) submissions is appropriate.

FDA Corrective Action

The PHS did not agree with this recommendation, indicating that the OIG recommendation mischaracterized CDRH's policy for expediting certain 510(k) reviews as "preferential treatment." The OIG report implied that benefits are conferred on certain manufacturers while similar benefits are not conferred on competing manufacturers.

OIG Follow up

We found that, although FDA did not agree with the recommendation, it had reviewed its policy for expediting reviews of 510(k) submissions for certain class I devices and determined that the policy was appropriate.

The FDA indicated that its 510(k) expedited review policy applied to all manufacturers and was instituted to expedite processing certain class I device submissions which are less time-consuming and less complicated to review. The FDA stated that supervisors screen incoming 510(k) submissions for class I devices so that only those submissions raising questions of substantial equivalency are assigned for scientific review. Submissions that do not raise such questions or are exempted by final regulation from the pre-market notification process are answered immediately (thereby expedited) without being assigned to a reviewer.

In addition to obtaining FDA's explanation for its expediting policy, during our follow-up review we analyzed the 510(k) work load to determine what portion would be subject to such a policy. Of the 5,367 decisions made by ODE in FY 1991, 830, or 15.5 percent, were for class I devices. The ODE did not

maintain data in order to identify which of those class I devices were expedited.

Conclusions and Recommendations

Our recommendation was implemented. Therefore, we are not making any additional recommendations.

OIG Recommendation Number 5
Documentation Policy

Continue to implement a documentation policy and format that can assure the timeliness, fairness, and completeness of 510(k) reviews.

FDA Corrective Action

The PHS agreed and stated that FDA would continue to implement a more comprehensive 510(k) documentation policy and format for its review decisions. After pilot studies of a new documentation format, a new format was issued to all ODE managers and reviewers by memorandum on March 20, 1990, which was subsequent to the issuance of our February 12, 1990 draft report on the 510(k) process. The format's use was instituted ODE-wide for all 510(k) submissions received on or after April 1, 1990. Implementation is now complete and no further actions are planned.

OIG Follow up

The ODE has developed and implemented a 510(k) documentation policy and format. This policy, however, can be enhanced by requiring reviewers to provide written comments explaining each of their answers to checklist questions.

Under ODE's policy, each 510(k) submission requires the following: (1) the "Memorandum To The Record;" (2) the "510(k) Substantial Equivalence Decision-Making Process" (flowchart); and (3) the "Substantial Equivalence Decision Making Documentation" checklist.

The flowchart shows the process reviewers use to determine if the device is substantially equivalent to a predicate device--one that was marketed before 1976. The flowchart is driven by identifying the likeness of the 510(k) submission to the predicate device. The checklist requires reviewers to answer a series of yes or no questions regarding key decisions identified in the flowchart. The reviewer must provide explanations to all questions answered negatively but only to certain questions answered positively. The documentation forms contain spaces on which supervisors are to indicate that they reviewed the forms.

To verify that ODE was implementing the documentation format, we selected a judgmental sample of 22 510(k) files for review. We determined that the reviewers' decisions were documented in the file in accordance with established procedures and that supervisors had indicated their reviews of the documentation forms.

We also noted that some reviewers were providing explanations for questions on the checklist that were answered positively even though they were not required to do so. For example, some reviewers had explained on the checklist how they determined that the technological characteristics of a 510(k) submission were the same as the predicate device. This additional information, in our opinion, enhanced the overall quality of the documentation. As such, we believe it would provide supervisors with more information on which they could base their review.

Conclusions and Recommendations

The ODE implemented a 510(k) documentation policy and format that was being followed by reviewers and supervisors. This policy could be enhanced by requiring reviewers to provide written comments to all checklist questions regardless of how they are answered.

We, therefore, recommend that FDA require ODE reviewers to provide a written explanation supporting their answer to each question on the decision making checklist, whether answered positively or negatively.

PHS Comments and OIG Response

The PHS agreed that ODE reviewers should provide their supervisors with any and all information necessary for the supervisors to make appropriate decisions based on their review of the documentation. The PHS stated, however, that such a system is currently in place within ODE. The PHS will continue with its current documentation policy, given its limited resources, the time constraints placed on ODE device reviewers, and the results of a 1989 pilot study which showed the questionable value of additional decision rationale and background information.

We did not review the PHS' 1989 pilot study: therefore, OIG cannot comment on the results. We are not, however, recommending that additional questions or data elements be added to the decision making checklist. We are recommending that reviewers be required to document their answers to questions that they are already required to answer. In our opinion, if a question is important enough to be considered in the decision making process, then a written answer to that

question should be of equal importance to the supervisor reviewing the adequacy of the reviewer's decisions.

OIG Recommendation Number 6
Augmenting the 510(k) Review Process

Augment the pre-market notification review process by designing **a program for selectively testing devices, validating test results submitted in 510(k)s, and conducting pre-market inspections of manufacturers' facilities.**

FDA Corrective Action

The PHS disagreed with this recommendation. While agreeing in principle that it is important to maintain the integrity of the 510(k) process by ensuring the veracity of the information in 510(k) submissions, FDA stated that the process is complemented by other regulatory mechanisms whose controls help to insure the veracity of industry submissions. As an alternative to OIG's recommendation, FDA agreed to take four actions, which are delineated below, to augment efforts to ensure the integrity of the 510(k) process.

OIG Follow up

The FDA has implemented two of the four alternate actions and is moving towards implementing the remaining two actions. We believe that FDA's development of the alternate actions represents a positive step in complying with our prior recommendation. However, lacking full implementation of the four alternate actions, we cannot fully evaluate their impact at this time. The proposed alternatives and the actions taken or planned by FDA are discussed below.

Alternate Action 1. The CDRH will develop proposed regulatory changes to require sponsors of device submissions to certify the truthfulness and accuracy of their submissions.

This alternate action has been implemented. The proposed regulatory changes have been published as an interim final rule in the April 28, 1992 Federal Register. The final rule is expected to be published in 1993. The changes do not identify penalties to be imposed if a manufacturer's submission is found to be erroneous; but, according to FDA's "General Policy on Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities," FDA may refuse to approve a submission determined to contain erroneous data. The FDA may also pursue other actions including seizure, injunction, civil penalties, and criminal prosecution.

Alternate Action 2. The CDRH and FDA's Office of Regulatory Affairs (ORA), which oversees FDA's field personnel, will, to the extent that resources permit, increase the number of bioresearch monitoring inspections related to pre-clinical or clinical testing of devices marketed through the 510(k) process.

This alternate action had not been fully implemented at the time of our review. The CDRH indicated that it was developing procedures to identify IDEs that would likely result in a 510(k) submission. According to the corrective action plan, written procedures should have been developed and manufacturers and 510(k) devices should have been identified for inspection by March 31, 1992.

Alternate Action 3. The CDRH and ORA will, to the extent that resources permit, expand post-market sampling and testing of devices marketed through the 510(k) process to ensure that they meet their specifications. This alternate action had not been fully implemented at the time of our review. In January 1992, FDA developed draft guidelines to determine conformance of selected class II medical devices to the specifications described in the 510(k) submission. It also selected four 510(k) submissions for review. The FDA indicated that it will notify manufacturers and the respective FDA field offices of the impending inspections in March 1992 and stated that it planned to begin testing two of the four devices by late April 1992.

In our opinion, this alternate action can be effective only if the number of devices to be tested is increased. We believe that once FDA's draft guidelines are proven effective, the number of devices subject to testing should be increased beyond the four tests now planned. The number should be representative of the devices cleared for marketing by FDA.

Alternate Action 4. The CDRH will develop additional policy guidance for 510(k) reviewers on the steps that should be taken to verify information in controversial or questionable 510(k) submissions.

This alternate action has been implemented. The policy guidelines were issued on May 29, 1991. The guidelines require a reviewer who has a suspicion concerning the integrity of the data provided to ODE in connection with an official 510(k) submission to raise the matter through supervisory channels to the division director. The reviewer's concern will be discussed by the division director, ODE's integrity officer, and the appropriate program operations staff manager. If further action is indicated, the submission will be referred to OCS, which

will initiate an inspection of the firm(s) responsible for submitting the questionable data. A submission under investigation will not be cleared until the integrity of the data is established. As of the end of our field work in February 1992, ODE reviewers had identified nine questionable 510(k) submissions.

In addition to the four alternate actions, ODE and OCS have taken two other actions that they believe apply to our recommendation. One is the issuance of 510(k) sterility review guidance on February 12, 1990. The purpose of the guidance is to ensure that the most critical sterile devices reviewed under the 510(k) process are manufactured in accordance with Good Manufacturing Practices (GMP), which are quality assurance practices and standards in manufacturing intended to prevent the production and marketing of defective devices. Under the guidance, OCS is to be notified within 15 days of the receipt of a 510(k) device that is labeled as sterilized by a traditional method and is the subject of a 510(k) that is also an implant or comes into direct contact with blood or spinal fluid.

The sterility guidance states that OCS is to review various data bases for information pertaining to the manufacturer's ability to adequately manufacture the sterile device. Based on its findings, OCS may request additional information, request an inspection, or request that ODE not issue a determination letter until the results of the inspection can be reviewed. This program currently is being tested in one ODE division.

The second action is OCS' development of an alert list to identify manufacturers that are not in compliance with GMP. The alert list is currently sent to ODE, which then notifies reviewers to hold 510(k) submissions for manufacturers on the list. The ODE and OCS are revising this procedure so that OCS will conduct the comparison to identify manufacturers on the alert list with 510(k) submissions under review by ODE. If any submissions are identified, ODE will be notified to place them on hold pending inspection.

Conclusions and Recommendations

Two of the four alternate actions have been fully implemented and progress is being made towards implementing the remaining two actions.

We, therefore, recommend that FDA require:

1. The CDRH and ORA to implement Alternate Action 2 to identify IDEs that would likely result in 510(k)

submissions, and conduct bioresearch monitoring inspections.

2. The CDRH and ORA to complete post-market testing of the four devices selected for review under Alternate Action 3, and increase the number of devices tested so that it is representative of devices cleared for marketing.

3. The ODE to evaluate the information gathered by OCS under Alternate Action 4 to determine which follow-up actions should be taken in those 510(k) submissions where reviewers raised questions concerning the validity of the data.

4. The CDRH to assess whether these four alternatives, once implemented, are sufficient to ensure the integrity of the 510(k) decision making process and to report its findings through the corrective action reporting mechanism.

PHS Comments and OIG Response

The PHS concurred with our recommendations and stated that CDRH has:

- developed procedures as part of its bioresearch monitoring program to target selected clinical studies that will eventually result in 510(k) submissions;

- assigned five bioresearch monitoring inspections to FDA district offices and planned more assignments for FY 1993;

- completed its post-marketing testing of the four devices. Three other devices are scheduled to be sampled, and the post-marketing sampling and testing program will be expanded in FY 1993. The PHS, however, does not believe it reasonable to expect CDRH and FDA district offices to conduct this program on a representative number of the over 4,000 510(k) marketing clearances per year. Instead, CDRH and FDA district offices will execute the program at the level commensurate with the resources available:

- developed a system to process 510(k) submissions referred by ODE to OCS for a data audit and determine various follow-up actions based on the results of the data audit; and

- continued to monitor, track, and provide quarterly reports on the status of these corrective actions to PHS through FDA's corrective action plan.

We believe that PHS' actions meet the intent of our recommendations. With regard to PHS' comments concerning the number of devices selected for post-marketing testing, we did not intend that FDA test all devices marketed through the 510(k) process. We continue to believe, however, that for the program to be effective, the number of devices tested should be more than the four that were tested, and the three that are scheduled for testing. In our opinion, testing a representative number of cleared devices is necessary to provide reasonable assurance that 510(k) devices meet specifications.

OIG Recommendation Number 7
Quality Control Review System

Establish a quality control **review system that involves independent review of completed pre-market notification decisions by an FDA group either inside or outside of ODE.**

FDA Corrective Action

The PHS agreed and advised us that pre-market notification decisions are subject to extensive supervisory review, and about 10 percent of them are reviewed by ODE's 510(k) staff. Quality control reviews by the 510(k) staff are conducted after the supervisory reviews are completed.

The FDA indicated that ODE developed a plan to augment the existing quality control review system by establishing a continuing process for reviewing a portion of 510(k) substantial equivalence decisions to ensure that it is meeting appropriate regulatory criteria.

OIG Follow up

The FDA has implemented a new quality control review system to supplement the reviews performed by the 510(k) staff. Our review showed, however, that the new quality review system was primarily focused on the 510(k) process rather than the scientific validity of the reviewers' decisions: and that the quality control reviews performed by the 510(k) staff were generally not documented.

The ODE estimated that the 510(k) staff reviewed approximately 500 submission files each year. These reviews focused on non-routine cases--the devices with special issues, ones where reviewers have questions, and those requiring the signature of the deputy director on the decision letter. For the 510(k)

submissions meeting the review criteria, the 510(k) staff is to examine the submissions for completeness, accuracy, and to determine if the correct response letter and documentation were prepared. The 510(k) staff were not reviewing submissions which did not meet this criteria; that is, submissions that involve straightforward substantial equivalence decisions.

To comply with the OIG recommendation and to ensure that some submissions involving straightforward substantial equivalence decisions were selected for independent review, ODE issued Program Integrity Memorandum 190-4, effective October 31, 1990, which established an independent quality review system whose objectives are to:

> "enhance management oversight of the pre-market notification 510(k) review process and to further ensure the integrity and fairness of the process and the propriety of the 510(k) decisions that are made."

To implement this quality review system, ODE stated that, on a quarterly basis, it would randomly select 510(k) files from the different classes of devices and from different final decision types. The 510(k) staff are to review the files for the following: correctness and consistency of the decision: presence of the information and data necessary for the decision: appropriateness and consistency of data collection requirements; adequacy of documentation of the decision: and timeliness of the review. Upon completion of these reviews, a summary of findings is to be provided to ODE's integrity officer, who is to review specific findings with the director, ODE, as necessary. As of the end of February 1992, 44 files had been selected for review by ODE under this new quality control review procedure.

We selected 22 510(k) submissions to determine how ODE was implementing its quality control review system. Five were selected from the 44 reviews that had been performed under the new independent quality review procedure and 17 were selected from the approximate 500 annual reviews that had been performed by the 510(k) staff for non-routine 510(k) decisions. We determined that a management intern temporarily assigned to ODE performed the five reviews under the new procedure. Our analysis further indicated that the reviews focused on the 510(k) process rather than on the scientific quality of the file. In other words, the review did not answer the question, "Was the scientific decision made by the ODE reviewer correct?" Furthermore, we learned that all 44 reviews performed under the new procedure had not been reviewed by the 510(k) staff manager. However, the day after we reported this oversight, the 510(k) staff manager forwarded

all the reviews to the ODE program integrity officer, as required by the guidance.

For the 17 submissions reviewed by the 510(k) staff, we determined that 15 did not include any indication, beyond the requisite supervisory sign-offs on draft decision letters, that a quality control review had ever been performed.

Conclusions and Recommendations

The ODE's quality control reviews primarily focus on the 510(k) administrative process and not the scientific validity of the decisions made by the 510(k) reviewers. Also, quality control reviews of the 510(k) staff were not always documented.

We, therefore, recommend that FDA require ODE to:

1. Include in its quality control reviews an independent scientific evaluation of the reviewers' 510(k) decisions.

2. Document the results of quality control reviews performed by the 510(k) staff.

PHS Comments and OIG Response

The PHS concurred and stated that CDRH is developing a management action plan that will include quality control measures to assess the scientific validity of 510(k) decisions. The results of all quality control reviews will be documented, but the degree to which the reviews are executed and documented will depend on the resources available.

Until CDRH's quality control system is operational, it is using the expertise of a clinical review committee in the Center for Drug Evaluation and Research (CDER) to conduct both retrospective and prospective reviews of selected 510(k) submissions, as well as other types of product applications. The CDRH is re-reviewing a number of recommendations made by the review committee, which will be built into a quality control system. The ODE is conducting independent re-reviews of product review decisions on an as-needed basis.

We believe that PHS' actions meet the intent of our recommendations. We urge PHS to make resources available to CDRH to enable it to fully implement and document the quality control system once it has been fully developed.

OIG Recommendation Number 8
Controls over Contacts, Files, and Offices

Expedite implementation of applicable CDER controls related to employee/industry contact, developing appropriate written policies and procedures to restrict these contacts and to safeguard submission files, and implement adequate physical security mechanisms for ODE offices.

FDA Corrective Action

The PHS agreed with our recommendation and indicated that, as a result of discussions with CDER officials and its October 1989 internal control review, CDRH issued an action plan to correct the identified deficiencies regarding employee/industry contacts, access to 510(k) records, and physical security.

OIG Follow up

The FDA has strengthened its procedures for controlling access to personnel, records, and office facilities. Our review showed that ***access*** to records is sufficiently controlled, but that further improvements are needed regarding access to personnel and office facilities.

Access to Personnel

On November 20, 1989, during our original audit work, ODE issued Program Integrity Memorandum 189-3. This memorandum established written polices and procedures requiring that:

- reviewers meet with industry representatives outside the reviewers' work space and away from sensitive documents;
- a supervisor be present at meetings with industry representatives;
- written records be maintained which summarize issues discussed at the meeting:
- industry representatives schedule meetings in advance and provide an agenda of what will be discussed: and
- sign-in logs be maintained in ODE offices to account for non-Department of Health and Human Services (HHS) visitors.

Despite the written procedures, four of five ODE division directors stated that their divisions continue to receive unescorted walk-in visitors. One division director objected

to discouraging such visits as it would be "impolite" to tell visitors that unscheduled visits could not be accepted. The division directors also stated that planned meetings were not always documented with a written agenda and that minutes of the meetings were not prepared in a timely manner. In addition, some directors expressed reservations about the accuracy of their sign-in logs.

Access to Files

Regarding security of the 510(k) files, on September 26, 1990, ODE issued document control procedures in Program Integrity Memorandum 190-3. These procedures address document log-in, controlling copies of device submissions, telephonic and facsimile transmissions, and work at home. The ODE officials stated that telephone calls from industry representatives continue to be received by reviewers. They indicated that the majority of the calls were made by manufacturers to ascertain the status of their submission. The ODE officials also indicated they believed that the benefits of taking work home outweigh the risks involved, and thus, supported and encouraged this practice. To establish accountability for documents, sign-out logs have been instituted.

Access to Office Facilities

The CDRH implemented a new security system in 1990 at the Piccard Building, located in Rockville, Maryland, which houses all of ODE and certain OCS offices. Each person who works in the Piccard Building is provided an individual access code number. During normal working hours, employees with access codes can enter the building from any entrance by keying in their access code. Visitors must enter through the front door and sign in at the guard's desk. Before and after normal working hours, the building is locked and entry can be made only through the front door by use of the assigned access code.

Our review revealed the following information concerning the new security system:

- Access codes are used only to restrict entry to the building. Once inside the building, the same access code can be used to gain entry to the second floor, which houses ODE offices, and the third floor, which houses OCS offices. The offices on the first floor, which house ODE device reviewers, are secured by simplex locks.

- The FDA does not generate periodic reports to identify patterns of individuals entering the building before or after normal working hours.

- Access codes were appropriately deleted for 73 former employees; however, we identified 39 former employees whose access codes were not deleted from the system prior to our review. These individuals were removed from the system on February 7, 1992, after we brought this matter to FDA's attention.

As a result of this follow-up review, FDA advised CDRH office directors on March 24, 1992, that changes were being made to the Piccard Building security procedures and systems. Building security procedure changes included: (1) requiring all FDA employees entering the building through the front door to present valid FDA identification cards to the security guard; (2) requiring visitors (defined as non-FDA employees) to register at the guard's desk and obtain a visitor's pass; and (3) restricting employee access within the building during non-working hours. Security system changes included procedures for identifying employees eligible for access codes, and assigning and deleting access codes on a routine and emergency basis. To ensure that all changes are accounted for, FDA plans to reconcile its security system records with personnel system records.

The FDA also indicated that the facilities manager periodically will compare security data base information to the security guards' log to ensure that procedures are followed. The facilities manager also will review data for unusual entries and discuss and resolve any questions arising from the analysis with the appropriate program management officer. Finally, FDA indicated that it planned to acquire additional security equipment, such as monitors for the guard station and simplex locks for office doors.

Conclusions and Recommendations

Policies and procedures controlling access to personnel, records, and office facilities have been established. We found, however, that the policies were effective only for controlling access to records.

We, therefore, recommend that FDA:

1. Require ODE to periodically monitor its procedures to ensure that employees are complying with established procedures regarding industry/employee contacts.

2. Require CDRH to submit periodic reports, through the corrective action reporting mechanism, summarizing the results of its implementation of the new security system procedures.

PHS Comments and OIG Response

The PHS concurred and stated that ODE will periodically monitor its procedures concerning employee/industry contacts to ensure that employees are adhering to **stated policies.** The CDRH will provide PHS with the results of the new security procedures at the Piccard building on a quarterly basis through the.FDA corrective action plan.

OIG Recommendation Number 9
Disclosure of a Material Weakness

Disclose in their FMFIA report that there are internal control weaknesses in the medical device pre-market notification process which, when taken as a whole, constitute a material weakness, and including corrective actions that have been taken or are underway.

FDA Corrective Action

The PHS did not agree with this recommendation, believing it implied there were material control weaknesses unique to the 510(k) process. The PHS acknowledged that there are weaknesses in the 510(k) process, but maintained that the material internal control weaknesses identified in OIG's 1990 510(k) report are common across FDA program areas.

OIG Follow up

The FDA acknowledged that there were weaknesses in the 510(k) process, but stated there was not the same potential for abuse as in other FDA processes. Thus, FDA did not believe that the weaknesses met the FMFIA test for being "material." The FDA conducted expedited internal control reviews of its product application review procedures in 1989, which resulted in the weaknesses of the 510(k) process being combined with those of other processes. As a result, the Secretary of HHS disclosed the following three FDA-wide material weaknesses in its 1990 FMFIA report to the President and Congress:

- lack of policies and procedures for conducting product approval reviews:
- lack of security over data and documents; and
- failure to meet statutory time frames for conducting product reviews.

According to HHS' 1991 FMFIA report, CDRH had completed all of its corrective actions for the weaknesses regarding lack of policies and procedures for conducting reviews and lack of security over data and documents. The weakness pertaining to

meeting statutory time frames did not apply to the 510(k) process.

As previously discussed under Recommendation 8, our review indicated that FDA had developed policies and procedures pertaining to the security over data and documents, but that there was not full adherence to requirements regarding controlling access to personnel and office facilities.

Conclusions and Recommendations

As part of the FMFIA process, we believe FDA should refer to our conclusions and recommendations under OIG Recommendation Number 8, which specify that FDA conduct periodic reviews to ensure that the security policies and procedures are being implemented and followed.

PHS Comments and OIG Response

The PHS concurred and stated that CDRH will provide status reports to FDA on corrective actions taken to ensure compliance with the new security policies and procedures. These reports will be provided as part of the FMFIA process. Until such reports show that these corrective actions have been completed, we will consider this to be a material weakness requiring resolution.

OIG Recommendation Number 10
Monitoring Corrective Actions

Monitor corrective actions until the weaknesses are resolved.

FDA Corrective Action

The PHS agreed in part with respect to the matter of monitoring actions to correct the weaknesses resulting from FDA's own internal control review, which was conducted in October 1989. The PHS stated that: (1) an action plan to correct the identified weaknesses resulting from FDA's review had been submitted; and (2) CDRH would provide reports to ensure the actions are monitored as required under FMFIA. The PHS indicated that progress reports on the actions to implement the planned activities were being monitored as required by FMFIA.

OIG Follow up

Although PHS stated it would only monitor weaknesses resulting from FDA's own internal control review, we determined that FDA had, in fact, monitored progress in implementing OIG's recommendations and reported this progress on a quarterly

basis. The report identified each OIG recommendation, the corrective action objective, planned milestone dates, status, and remarks.

Conclusions and Recommendations

The FDA followed up on the implementation status of all recommendations made in our prior MAR. We recommend that FDA continue to monitor CDRH's implementation of the corrective actions recommended in this report and to report its findings through the corrective action reporting mechanism.

PHS Comments and OIG Response

The PHS concurred with our recommendation. The FDA will continue to monitor existing corrective actions, along with the actions, through the FDA corrective action plan.

We would appreciate being advised within 60 days on the status of corrective actions taken or planned on each recommendation. Should you wish to discuss the issues raised by our review and recommendations, please call me or have you staff contact Daniel W. Blades, Assistant Inspector General for Public Health Service Audits, at (301)443-3582.

APPENDIX

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Memorandum

Date .OCT 22 1992

From Assistant Secretary for Health

Subject Office of Inspector General (OIG) Draft Report "Follow-Up Review on Internal Control Weaknesses in the Food and Drug Administration's (FDA) Medical Device 510(k) Review Process*

To Acting Inspector General, OS

Attached are the Public Health Service's (PHS) comments on the subject OIG draft report. The report concludes that FDA has made progress in implementing corrective actions in the 510(k) program, but that more needs to be done to fully address the weaknesses disclosed in the July 1990 OIG report. To address the deficiencies reported, the report contains 16 new follow-up recommendations.

We concur with these recommendations or with their intent. Our comments describe the: (1) actions underway or planned to implement these recommendations, and (2) alternative actions taken by FDA to meet the objectives of the recommendations. In addition, we offer a series of technical comments for your consideration.

James O. Mason

James O. Mason, M.D., Dr.P.H.

Attachment

IG	
PDIG	✓
DIG-AS	
DIG-EI	
DIG-OI	
AIG-MP	
OGC/IG	✓
EXSEC	
DATE SENT	10/23

PUBLIC HEALTH SERVICE (PHS) COMMENTS ON THE OFFICE OF INSPECTOR GENERAL (OIG) DRAFT REPORT "FOLLOW-UP REVIEW ON INTERNAL CONTROL WEAKNESSES IN THE FOOD AND DRUG ADMINISTRATION'S (FDA) MEDICAL DEVICE 510(K) REVIEW PROCESS," A-03-92-00605

In commenting on this report, the PHS response is organized in the following manner. First, the recommendations from the OIG's July 1990 report are listed under a bold print and underlined title. Next are the OIG follow-up recommendations specific to the original recommendations. Finally, the PHS comments on the follow-up recommendations are provided.

OIG Recommendation 1 - Management Information System (MIS)

We recommend that FDA implement plans to redesign the management information system to capture and analyze work load and productivity information at the individual reviewer level and to detect possible manipulation of the process.

OIG Follow-up Recommendations

We recommend that FDA:

1. Make the modifications to its exception report that were identified by the Office of Device Evaluation (ODE). These modifications include adding the product name and the reviewer's name to the report. The revised report should be tested and, when finalized, run quarterly.

2. Investigate the 510(k)s whose processing exceeded expected variations and document actions taken to resolve these exceptions.

3. Require ODE to provide summaries of the results of its review of identified exceptions as part of the corrective action reporting mechanism.

PHS Comments

We concur that FDA's ODE should revise its reporting of exceptions, resolve these exceptions, and provide summary reports. FDA's Center for Devices and Radiological Health's (CDRH) Office of Information Services (OIS) incorporated the changes requested by ODE to the exceptions report form which will facilitate the identification of variances requiring further analysis.

As with any new software program, ODE will need to conduct a short test period with the exceptions report prior to using it on a regular basis. This test period will begin after OIS conducts a training session with the intended users, which is expected to take place around January 1993. After the

training session is completed, additional refinement8 will be made to the report as needed.

The FDA ha8 reservations about executing this process on a quarterly basis. Investigating the exceptions, taking appropriate follow-up actions, and developing summaries of the results will entail substantial involvement by ODE managers and review staff. CDRH is converting it8 current 510(k) database into a new language which will enhance and expand user capabilities. It is expected that this database conversion, expansion, and enhancement will take more than 1 year to complete. Therefore, additional documentation and report capabilities will not be available to the ODE staff until sometime in Fiscal Year (FY) 1994.

Until the additional documentation and report capabilities are in place, CDRH believes that the exceptions report should be done on an annual basis, with analysis and follow-up being conducted on as many variances as resource8 permit. After the new 510(k) system becomes operational, ODE will provide quarterly follow-up summary reports on all the variances generated in the exceptions report.

OIG Recommendations 2 and 4: First-in, First-Reviewed Policy

The FDA should document that "first-in, first-reviewed" is the review sequencing policy for 510(k) submissions, delineate acceptable exceptions to the policy, requiring documentation in the submission file when the policy is not used, and ensure that the "first-in, first-reviewed" policy is uniformly applied by all reviewers.

OIG Follow-up Recommendations

We recommend that FDA require ODE to:

4. Periodically sample reviewer workload to ensure that reviewers are uniformly complying with the "first-in, first-reviewed" policy.

5. Submit summary results of the periodic reviews as part of the corrective action reporting mechanism.

PHS Comments

We concur that ODE should periodically sample reviewer workload and submit summary results of these reviews. OIG tested CDRH's written policy on "First-in, First-reviewed" sequencing and found that procedures are being adhered to by the reviewers. Manual sampling of the medical device workload and developing summary reports on a routine basis would pose

an additional burden on the ODE administrative staff. CDRH will implement these two recommendation8 when it8 new, sophisticated 510(k) database is in place and it can generate automated report8 on "first-in, first-reviewed" activity.

CDRH is revising it8 510(k) database to expand capabilities for its users, which may include revising the ODE Divisions' tracking systems to create a more uniform database which will monitor compliance with the review sequencing policy. As discussed in the comments following recommendations number 1, 2 and 3 above, this expanded and enhanced database will not be fully operational for more than 1 year from now.

OIG Recommendation S - Documentation Policy

The FDA should continue to implement a documentation policy and format that can assure the timeliness, fairness, and completeness of 510(k) reviews.

OIG Follow-up Recommendations

6. We recommend that FDA require ODE reviewers to provide a written explanation supporting their answer to each question on the decision making checklist, whether answered positively or negatively.

PHS Comments

We concur that ODE reviewers should provide their supervisors with any and all information necessary for these supervisors to make appropriate decisions based on their review of the documentation. We believe that such a system is currently in place in ODE. CDRH requires and supports an adequate and uniform documentation process of the decision rationale for 510(k) submissions.

The CDRH believes that the current documentation requirements for ODE reviewers are sufficient to adequately describe the decision making process. ODE's present policy requires documentation for all negative answers and certain positive answers. This policy was initiated to ensure that the most important decision information would be captured and to reduce the administrative burden placed on the reviewer. The current documentation policy only identifies the minimum information that is required; reviewers exceed these requirements when additional documentation is necessary.

To be certain that sound documentation procedures are in place, in 1989, one of ODE's divisions piloted a more extensive documentation form. The purpose of this pilot was

to determine which data elements should be captured in the decision-making process and the level of detail that should be addressed by the reviewer.

The result8 of the pilot study showed that the extensive documentation form did not generate any more useful information than that provided for by the current documentation requirements. However, the paperwork burden on the individual reviewer was substantial. In some cases, the length of the documentation form exceeded the entire 510(k) submission. Answers to some of the data items, such as technological characteristics, contained information which is considered to be common knowledge to device reviewers and supervisors within particular device areas. A documentation policy that requires device reviewers to document routine information is unnecessary and would hinder, rather than enhance, the device review process.

Given the current limited resource environment, the time constraints already placed on ODE's device reviewers, and the questionable value of additional decision rationale and background information, CDRH believes that it is in our best interest to continue with its current documentation policy.

OIG Recommendation 6 - Augmenting the 510(k) Review Process

The FDA should augment the premarket notification review process by designing a program for selectively testing devices, validating test results submitted in 510(k)s, and conducting premarket inspections of manufacturers' facilities.

PHS Comments to the July 1990 Report

In its response to the July 1990 report, PHS did not concur with this recommendation but stated that it would take four alternate actions to augment efforts to ensure the integrity of the 510(k) process. In its follow-up study, the OIG evaluated CDRH's progress on the four alternate actions.

Alternate Action 1. The CDRH will develop proposed regulatory changes to require sponsors of device submissions to certify the truthfulness and accuracy of their submissions.

Alternate Action 2. The CDRH and FDA's Office of Regulatory Affairs (ORA), which oversees FDA's field personnel, will, to the extent that resources permit, increase the number of bioresearch monitoring inspections related to pre-clinical or clinical testing of devices marketed through the 510(k) process.

Alternate Action 3. The CDRH and ORA will, to the extent resources permit, expand post-market sampling and testing of device8 marketed through the 510(k) process to ensure that they meet their specifications.

Alternate Action 4. The CDRH will develop additional policy guidance for 510(k) reviewers on the steps that should be taken to verify information in controversial or questionable 510(k) submissions.

OIG Follow-up Recommendations

We recommend that FDA require:

7. CDRH and ORA to implement Alternate Action 2 to identify IDEs that would likely result in 510(k) submissions, and conduct bioresearch monitoring inspections.

8. CDRH and ORA to complete post-market testing of the four devices selected for review under Alternate Action 3, and increase the number of devices cleared for marketing.

9. ODE to follow up on the actions taken by OCS under Alternate Action 4 to validate the data in those cases where reviewers raised questions concerning the submission.

10. CDRH to assess whether these four alternatives, once implemented, are sufficient to ensure the integrity of the 510(k) decision making process and to report its findings through the corrective action reporting mechanism.

PHS Comments

We concur. FDA completed the requirements for Alternate Action 1 by incorporating the requirement that sponsors of 510(k) submissions certify the truthfulness and accuracy of their submissions in an Interim Final Rule, which was published in the Federal Register on April 28, 1992. In response to a petition from the Health Industry Manufacturers Association (HIMA), FDA published a notice in the Federal Register on June 6, 1992, which stays the effective date of the interim final rule until 60 days after the final rule is published and extends the comment period until August 27, 1992. The final rule is expected to be published in 1993.

For OIG's follow-up recommendation 7, CDRH will develop procedures to identify Investigational Device Evaluations (IDEs) that are likely to result in 510(k) submissions and to conduct bioresearch monitoring inspections on the pre-clinical

and clinical testing to the extent resources permit. CDRH has developed procedures as part of its bioresearch monitoring program to target selected clinical studies that will eventually result in 510(k) submissions. Procedures are being refined to allow for a more workable process. To date, CDRH has used these procedures to issue five assignments to FDA district offices to conduct follow-up inspections in this area. More assignments under this program will be issued in FY 1993. These five inspections do not include the many bioresearch monitoring inspections and data audits that have been initiated for the ODE Integrity Program for all types of product submissions. To accommodate the increased emphasis on bioresearch monitoring activities in the medical device area, CDRH requested FDA to reprogram additional field resources to this effort for FYs 1992 and 1993.

OIG's follow-up recommendation 8 concerns CDRH's program to sample and test selected critical class II and III devices marketed through the 510(k) process to ensure that the products meet the manufacturers' specifications. CDRH developed a system which will identify devices for testing and determine the test specifications and methods to be followed. At the time of the study, four devices of two high priority device types were selected for sampling and testing. The sampling for two cardiac pacemakers and two ventilators was completed and test protocols are being developed. Three other device types are scheduled to be sampled soon. Full expansion of the postmarket sampling and testing program is expected to begin in FY 1993.

The follow-up recommendation to this alternate action requires CDRH to increase the number of devices tested to an amount representative of the number of the 510(k) devices cleared for marketing. While in theory this recommendation is a good idea, CDRH issues an extremely large number (over 4,000) of 510(k) marketing clearances per year. It is not reasonable to expect CDRH and the FDA district offices to conduct this program on such a large population of devices. CDRH and the FDA district offices will execute the program at a level commensurate with the resources available.

The OIG's follow-up recommendation 9 requests that the Center take additional actions now that it has implemented alternate action 4. We suggest that the wording of the recommendation be changed to state: *"ODE will use the information gathered by* OCS *under alternate action 4 to determine which follow-up actions should be taken in those 510(k) submissions where reviewers raised questions concerning the validity of the data."*

We believe that this wording of the recommendation portrays a more accurate description of the procedure taken by ODE in instances where data validity questions are raised. To implement this recommendation, ODE and OCS developed a system to process 510(k) applications after ODE refer8 them to OCS for a data audit. Various follow-up action8 are determined based on the result8 of the audit.

For OIG follow-up recommendation 10, CDRH is implementing the OIG's three follow-up recommendations, together with the four alternate actions taken to address Recommendation 6 of the original OIG study. CDRH now has more tools and processes in place to ensure the integrity of the 510(k) decision-making process. CDRH will continue to monitor, track, and provide quarterly reports *on* the status of these corrective actions to PHS through the FDA Corrective Action Plan.

OIG Recommendation 7 - Quality Control Review System

The FDA should establish a quality control review system that involves independent review of completed premarket notification decisions by an FDA group either inside or outside of ODE.

OIG Follow-up Recommendations

We recommend that FDA require ODE to:

11. Require ODE to include in its quality control reviews an independent scientific evaluation of the reviewers' 510(k) decisions.

12. Require ODE to document the results of quality control reviews performed by the 510(k) staff.

PHS Comments

We concur. CDRH is developing a Management Action Plan (MAP) which will include the establishment of quality control measures to assess the scientific validity of 510(k) decisions. A specific strategy is being developed. In the meantime, CDRH has used the expertise of a clinical review committee in the Center for Drug Evaluation and Research (CDER) to conduct both retrospective and prospective reviews on selected 510(k) submissions, as well as other types of product applications. CDRH is currently re-reviewing a number of recommendations made by the committee which will be built into a quality control activity. Independent re-reviews of product review decisions are also being conducted within ODE as needed.

CDRH will document the result8 of all quality control review8 when the strategy discussed in follow-up action 1 is implemented. The degree to which the review8 are executed and documented will be dependent upon the resource8 available to execute this function.

OIG Recommendation 8 - Controls over Contacts, Files, and Offices

The FDA should expedite implementation of applicable CDER controls related to employee/industry contact, developing appropriate written policies and procedure8 to restrict these contacts and to safeguard submission files, and implement adequate physical security mechanisms for ODE offices.

OIG Bollow-up Recommendations

We recommend that FDA:

13. Require ODE to periodically monitor its procedures to ensure that employees are complying with established procedures regarding industry/employee contacts.

14. Require CDRH to submit periodic reports, through the corrective action reporting mechanism, summarizing the results of its implementation of the new security system procedures.

PHS Comments

We concur. ODE will periodically monitor its procedures concerning employee/industry contacts to ensure that employees are adhering to the stated policies. ODE Division Directors are provided with an outline of information concerning these procedures which is described in an internal ODE "Blue Book" memorandum. Each quarter the ODE Integrity Officer will monitor compliance with the procedures by one of each ODE Division on a rotating basis.

CDRH will provide PHS with the results of the new security procedures at the Piccard Building on a quarterly basis through the FDA Corrective Action Plan.

OIG Recommendation 9 - Disclosure of a Material Weakness

The FDA should disclose in their FMFIA report that there are internal control weaknesses in the medical device premarket notification process which, when taken as a whole, constitute a material weakness, and include corrective actions that have been taken or are underway.

OIG Follow-up Recommendation

1s. We recommend that FDA conduct periodic reviews to ensure that security policies and procedures are being implemented and followed.

PHS Comment

We concur. CDRH will provide status reports on corrective actions taken to ensure compliance with the new security policies and procedures to the FDA as part of the FMFIA process when the 510(k) internal control study is completed.

OIG Recommendation 10 - Monitoring Corrective Actions

The FDA should monitor corrective actions until the weaknesses are resolved.

OIG Follow-up Recommendation

16. We recommend that FDA continue to monitor the CDRH's implementation of the corrective actions recommended in this report and to report its findings through the corrective action reporting mechanism.

PHS Comment

We concur. FDA will continue to monitor existing corrective actions along with new actions recommended in the follow-up report through the FDA Corrective Action Plan.