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**MEDICARE
TRANSACTION SYSTEM**

**Serious Managerial and
Technical Weaknesses
Threaten Modernization**

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Messrs. Chairmen and Members of the Subcommittees:

We are pleased to join you today in examining the status and prognosis for success of the Health Care Financing Administration's (HCFA) Medicare Transaction System (MTS), being designed to bring Medicare claims processing into the next century. Developing this system is not an easy task. Attempting to replace nine separate automated information systems with a single, unified system is clearly a very complex endeavor.

The goals of MTS include improved customer service; reduced operating expenses; more effective control over claims processing; better oversight of contractors; substantial administrative savings; better protection of program funds against waste, fraud, and abuse; and the ability to accommodate managed care and other alternative payment methodologies. One specific, basic improvement that MTS is expected to provide over the current environment is the need to modify only one system when changes, such as those following enactment of legislation, affect Medicare payments. At present, each system must be individually changed—an expensive, time-consuming process.

Both we and the Congress have had long-standing concerns about the development of MTS.¹ Today, we are issuing a report that discusses our analysis of HCFA's progress in managing the development of this system.² Eighteen months ago we similarly testified on early symptoms of unnecessary risk to this project, and in 1994 we reported on its benefits and acquisition risks.³ The fact remains that despite much hard work and some progress, critical weaknesses—both managerial and technical—continue to exist. These weaknesses call into serious question whether MTS, without significant change, will be able to perform as required. Further, as we will illustrate, costs have been escalating sharply; even if performance is as expected, we would have to ask: Is it worth the estimated \$1 billion price? Could similar system functions be acquired at significantly lower cost? We believe that more can and must be done if HCFA is to obtain the type of system it needs. Our report includes 20 major recommendations to help HCFA enhance the likelihood of acquiring the kind of system it must have in a cost-effective manner.

¹A list of reports and testimony related to MTS appears at the end of this statement.

²Medicare Transaction System: Success Depends Upon Correcting Critical Managerial and Technical Weaknesses (GAO/AIMD-97-78, May 16, 1997).

³Medicare Transaction System: Strengthened Management and Sound Development Approach Critical to Success (GAO/T-AIMD-96-12, Nov. 16, 1995) and Medicare: New Claims Processing System Benefits and Acquisition Risks (GAO/HEHS/AIMD-94-79, Jan. 25, 1994).

My statement today will discuss the actions HCFA has taken to date, and where these steps leave the agency in its development of a system that can handle Medicare claims processing into the next century. I will then cover the three related major areas that we believe need the most attention. The first area involves HCFA's *management of the interim claims-processing environment* in which it must operate until conversion to MTS or another system has been completed; this includes addressing adaptations required by the century change that is only 959 days away.⁴ The second area of concern relates to *managing the development of MTS as an investment*. This means using cost-benefit analyses and other tools to continually track and assess whether funds spent on MTS will contribute to a return on this investment, as measured not only monetarily but against the system's own goals as well. Finally, *sound systems-development practices* are critical in order to reduce risk and help ensure quality, timeliness, and cost containment. We continue to see major gaps in HCFA's application of sound systems-development practices—practices that are essential to assisting management in controlling the development of systems requirements and software.

The Medicare Transaction System

Medicare is an enormous program, and it will only get bigger. As the nation's largest health insurer, it serves some 38 million Americans by providing health insurance to those aged 65 and over and to many of the nation's disabled. It now disburses over \$200 billion in health care benefits every year. With an aging population and a rapidly expanding workload, this figure is expected to reach \$288 billion by 2000, at which time the Medicare program expects to be processing one billion claims annually.

The Medicare program is divided into two areas—part A and part B. Part A encompasses in-patient services, with claims paid to hospitals, skilled nursing facilities, hospices, home health agencies, and rehabilitation centers. Part B comprises outpatient services, with claims paid to physicians, laboratories, equipment suppliers, and other outpatient providers and practitioners.

Claims processing for the Medicare program is handled at some 45 sites throughout the country by about 70 private companies under contract with

⁴In brief, this entails expanding the date field or rewriting program code to differentiate between 1900 and 2000; many systems today use only two digits for the year, such that "00" could be read as either 1900 or 2000. For an explanation of the expected impact of the year-2000 change on computer systems, see *Year 2000 Computing Crisis: Strong Leadership Today Needed To Prevent Future Disruption of Government Services* (GAO/T-AIMD-97-51, Feb. 24, 1997).

HCFA. Contractors handling part A services, called intermediaries,⁵ have been using three different computer systems to process claims; those handling part B, called carriers, use six different systems.⁶

In order to handle the anticipated increases in volume and improve the efficiency and effectiveness of Medicare operations, HCFA is developing one unified computer system to replace today's operating environment. In January 1994, HCFA awarded a contract to a software developer to design, develop, and implement a new, government-owned, automated claims-processing information system, to be called the Medicare Transaction System, or MTS.

HCFA Actions to Date

As part of my presentation today, I would like to discuss three charts that should help illustrate our major points. Copies of these charts appear at the end of my statement. In an attempt to achieve some savings before MTS is fully operational, HCFA is now undertaking several actions to prepare for the interim operating environment, while simultaneously continuing its development of the final system.

As our first chart indicates, one interim step involved selecting one system from the initial nine systems to process claims for Medicare part A, and another for part B. The part A and part B systems have been selected and conversion has begun. A second, planned step entailed cutting the number of processing sites by over half, to about 20 nationwide. HCFA then planned to move data processing from these 20 consolidated sites to two planned MTS processing sites in mid-1998. During this interim period, HCFA is also relying on its contractors to revise their systems to accommodate year-2000 processing. Throughout this process HCFA's software development contractor was to be conducting activities to develop the MTS software.

These software development plans are now, however, on hold for 90 days. On April 4, 1997, HCFA announced that following a recent management review, it was redirecting its software development contractor to focus solely on the managed care module of MTS—the first of six planned releases. While reaffirming its faith in MTS as the best information technology to take Medicare into the next century, HCFA officials said that they will use this time to examine alternative methods for achieving their MTS goals.

⁵Intermediaries also process some part B claims.

⁶One of the three part A systems was recently converted, leaving a total of eight—two part A systems and six part B.

Interim Environment and Year 2000 Present Serious Challenges

The first main problem area involves HCFA's interim operating environment—before MTS—and the challenges of the coming change of century. HCFA has approached managing the environment in which it will operate for the next 3 years without adequate planning. To successfully handle the claims workload, consolidate existing processing sites, address year 2000-related issues, and convert from the original nine systems to two, careful and detailed planning is necessary. This has not been done. While HCFA is already beginning to convert its systems and consolidate its sites, few plans exist to guide these activities. What sorts of plans are needed? At minimum, a schedule and estimate of resources required for transition to the interim environment, details defining contractor responsibilities, and an approach for tackling the potentially complex year-2000 issue.

To simultaneously convert systems for the interim environment while at the same time managing ongoing development of MTS is risky enough; this risk is further magnified by HCFA's lack of experience in undertaking such a complex project. In such an environment, we believe it is especially important that HCFA develop specific performance measures against which the interim systems can be assessed. Performance measures could show that the "interim" systems may be all that is needed, or could be used to help management make refinements to its modernization effort as it unfolds.

We also see unnecessary risk in HCFA's reliance on its Medicare contractors to address the year-2000 issue. Information systems worldwide—including those that process Medicare claims—could malfunction or produce incorrect data simply because they have not been designed to handle dates beyond 1999. Failure to adjust systems for 2000 and beyond could cause payment delays, as well as losses due to bypassed system controls that flag claims that should be paid by a beneficiary's other insurer. Since "00" could be read as 1900 instead of 2000, all date-dependent calculations would be affected; this would have an obvious impact on the computed age of a beneficiary and, therefore, on his or her eligibility. For example, an individual born in 1920 might have been receiving benefits since turning 65 in 1985. Such benefits could, however, cease in 2000 if the computer system, reading 2000 as 1900, saw the individual as negative 20 years old—not even born yet.

The timing of HCFA's transition strategy makes the claims-processing contractors' task—assessing, planning, and implementing whatever changes are necessary—even more of a challenge. For example, the

contractor for the single system selected to process part B claims will have to handle the conversion of the five other, existing part B systems—while modifying the chosen system to be year-2000 compliant. Yet HCFA officials have not closely monitored these critical activities, or demanded certification from contractors that their systems will be made year 2000-compliant. A further complication is that these contractors may not have much incentive to make these adaptations properly because HCFA intends to eliminate them once MTS has been fully implemented. Officials are “surveying” contractors on the year-2000 issue, however, and have requested estimates of when the systems will be made compliant.

To help HCFA effectively manage its interim Medicare processing environment, our report recommends that the Secretary of the Department of Health and Human Services (HHS) direct that the HCFA Administrator

- prepare plans that detail the steps involved in making the transition to the single part A and part B systems, define how systems will be converted to address potential year-2000 problems, and delineate the steps necessary for thorough systems testing before conversion;
- establish a means of assessing performance in the critical early stages of the transition, and apply any lessons learned to planning for MTS; and
- help ensure reliable operation of systems through the year 2000 by identifying management and oversight responsibilities, assessing the timing and likely severity of impact if adaptations are not adequate, developing contingency plans, and reporting progress regularly to HHS.

MTS Is Not Being Managed as an Investment

Our second major area of concern involves investment management. One cannot make informed technology investment decisions without a valid cost-benefit analysis, knowledge of available alternatives, and an evaluation of how proposed technology benefits will contribute to improved mission performance. Carrying out these assessments is more than simply a best practice; it is required by law. As you know, last year’s Clinger-Cohen Act seeks to maximize the return on investments in information systems by instituting sound capital investment decision-making.

Under Clinger-Cohen, agencies must design and implement a process for maximizing the value and assessing and managing the risks of information technology acquisitions. Further, this process is to be integrated with the processes for making budgetary, financial, and program management

decisions, and include criteria to be applied in considering whether to undertake a particular information systems investment.

Specifically, the process should provide for (1) identifying information systems investments that would result in shared benefits or reduced costs for other government agencies, (2) identifying quantifiable measurements of benefits and risks of proposed investments, and (3) the means for senior management to obtain information on the progress of information systems investments. None of this has yet been done effectively for MTS.

HCFA's estimates of MTS benefits are based primarily on unsupported assumptions. For example, officials said that much of the anticipated programmatic savings would result from automated edits to identify unnecessary medical services and abusive billing that could result in excessive payments. They acknowledge, however, that since they have not yet identified the edits to be included in MTS, resulting savings could differ substantially from the estimates. Another incorrect assumption is that without MTS, costs per claim would continually increase between 1993 and 2002. Yet actual contractor cost reports for 1994 through 1996 show a drop of about 10 percent.

Our second chart illustrates the escalation of MTS costs; the figure on the left is an estimate, using HCFA data, of total program costs through complete implementation, while the one on the right is software-development contract costs only. I want to make clear that the dates on these figures refer to when the estimates were made.

Both figures do show recent steep increases. In total, estimated MTS costs have jumped 7-fold in 5 years, from \$151 million in 1992 to about \$1 billion today. I should point out that the \$1 billion figure includes costs for the transition to the interim environment and to acquire MTS operating sites. Many aspects of the overall development effort remain vague; for example, requirements still have not been defined. Absent this, estimates of total software-development costs are, of necessity, extremely rough at best.

There are alternatives to spending of this magnitude, and we believe—especially given the recent escalation of costs—that HCFA has a responsibility to explore them. Two years ago we urged HCFA to investigate commercial, off-the-shelf software to help detect billing anomalies; we understand that this research is continuing. We believe that combined with administrative savings accruing from the consolidation of systems, commercial software could allow HCFA to realize substantial savings now.

According to HCFA's estimate, MTS will not be fully operational, at the earliest, for at least 3 years. During that period, hundreds of billions of dollars will have been spent on Medicare claims.

As part of the complete MTS system, HCFA plans to establish two MTS claims-processing sites and a data operations and analysis center. This decision was made with inadequate analysis in terms of decision criteria, alternatives analysis, and technical risk analysis. The decision to have two processing sites was made on the basis of data-storage and disaster-recovery considerations only. Given the importance of these steps, our report recommends that the Secretary of HHS withhold funding for the MTS operating site contracts until an approach has been selected that is based on these crucial analyses.

Managing a project as an investment also requires strong managerial oversight; this has not been the case with MTS. Consistent senior-level involvement in major decisions is still lacking. Many of the critical MTS investment decisions have been made without the involvement of HCFA's executive decision-making body, the MTS management board. HCFA is, however, making positive changes; it has designated a chief information officer and has established an investment review board.

To help HCFA minimize unnecessary spending while developing and implementing MTS, our report recommends that the Secretary of HHS direct that the HCFA Administrator justify continuation of MTS with valid cost-benefit and alternatives analyses that include goals for reaching programmatic savings and that link estimated savings to specific Medicare claims-processing improvements—and take appropriate action on the basis of these analyses.

Our report also recommends that the Secretary of HHS assist HCFA by providing oversight in accordance with legislative provisions in the Clinger-Cohen, Paperwork Reduction, and Federal Acquisition and Streamlining Acts. This should include monitoring by HHS' chief information officer. The report further recommends that in accordance with Clinger-Cohen, the Office of Management and Budget (OMB) utilize its enforcement authority to ensure HCFA's compliance with the act, including the cost-justification provision.

Not Following Sound Systems-Development Practices Threatens Quality, Timeliness, and Cost Containment

The third major problem we see is that HCFA is not ensuring that sound systems-development practices are followed. Because of this, the agency has decreased the chances of controlling the development of systems requirements and software. HCFA has not developed plans critical to systems success, has not managed its schedule well, and has not adequately monitored its contractor's software-development strategy. Further, because of faulty assumptions on the part of the contractor, estimates of software-development costs are not reliable. Consequently, the risk that such estimates could rise before the project is completed is very real. Finally, HCFA has not implemented a concerted program to minimize risk.

Attention to these steps is common to organizations that succeed in acquiring well-performing automated information systems. Not managing in this way significantly increases the threat to overall system quality, timely completion, and reasonable cost expenditures.

Our final chart today shows what can happen when such guidelines are not followed. This illustrates how the number of systems requirements changed over time for the first five contract releases of MTS. The lack of symmetry illustrates the enormous volatility in how many and what types of systems requirements are seen as necessary as development progresses—and this after several years of attempting to define what the system will actually do.

Deficiencies in several critical systems-development processes provide early warning of weaknesses in the management capability of HCFA itself and of its contractors. These factors all increase risk. Critical risks that remain unmitigated include (1) missing or inadequate plans for three important components of systems development—requirements management, configuration management, and systems integration, (2) the compression of MTS' development schedule, and (3) the lack of valuable metrics, which are measures of software quality and performance. Taken together, the number and significance of these unmitigated risks, along with several others, raises the question of whether MTS can become the management tool that HCFA expects.

An aspect of the MTS schedule that we see as troubling is that individual systems-development phases now overlap to a dangerous degree. Systems are typically constructed in five phases: *analysis*, *design*, *development*, *testing and validation*, and *implementation*. When, for example, testing and validation begins before development has been completed, or

implementation begins before the end of testing, the resulting overlap can clearly cause problems. These steps were meant to be predominantly sequential because each phase's success depends, in part, upon adequate progress in the previous phase. If a contractor advances too far into a succeeding systems-development phase before sufficient progress has been made in the previous phases, the risk of technical problems increases significantly. The current HCFA schedule for MTS shows concurrency in all five phases between September 1997 and September 1998, and overlap is also present in the schedules for each planned release, such as managed care.

To help ensure the success of MTS, our report recommends that the Secretary of HHS require that the HCFA Administrator, before proceeding further with MTS development, direct and remain accountable for

- completing and implementing plans that are critical to effective systems development;
- requiring an independent evaluation of the MTS contractor's software-development capability prior to beginning that phase;
- completing a new and integrated MTS program schedule for the entire initiative, including the interim, and resources and costs for each task; it should also minimize overlap in the systems-development phases; and
- mitigating critical risks by designating an official accountable for risk management, and ensuring that this individual implements a process that will, among other elements, identify and quantify significant risks, establish time frames for assessing status and for mitigation, and develop measures for assessing mitigation effectiveness.

Finally, we believe that closer oversight by both HHS and OMB is necessary to ensure that MTS or any alternative system is developed along the lines that we are recommending. In particular, we see HHS as a critical player in assisting HCFA and in monitoring its actions. For its part, OMB is authorized under Clinger-Cohen⁷ to take enforcement actions to ensure that HCFA complies with the law's provisions, including the mandate to justify major information technology projects with sound, investment-based analyses.

In summary, HCFA is proceeding with a project that has serious managerial and technical weaknesses. In order to bring Medicare claims processing into the next century with confidence, we believe that HCFA must manage as an investment any information technology it seeks to acquire. This means performing the analyses necessary to predict the kind of return the

⁷Section 5113 (b)(5).

investment is likely to provide, short-term and long-term—in a fiscal as well as technical sense. HCFA then has an obligation to manage such a challenge through the use of sound systems-development practices.

We are encouraged that in commenting on a draft of the report being released today, both HHS and OMB have recognized the problems we have identified and agreed with all of our recommendations for addressing them. However, these recommendations must be effectively implemented in order for a project such as MTS to be successful.

This concludes my statement. I would be happy to respond to any questions you or other Members of the Subcommittees may have at this time.

Related GAO Products

Medicare Transaction System: Success Depends Upon Correcting Critical Managerial and Technical Weaknesses ([GAO/AIMD-97-78](#), May 16, 1997).

Year 2000 Computing Crisis: Strong Leadership Today Needed To Prevent Future Disruption of Government Services ([GAO/T-AIMD-97-51](#), Feb. 24, 1997).

Medicare: Millions Can be Saved by Screening Claims for Overused Services ([GAO/HEHS-96-49](#), Jan. 30, 1996).

Medicare Transaction System: Strengthened Management and Sound Development Approach Critical to Success ([GAO/T-AIMD-96-12](#), Nov. 16, 1995).

Medicare: Antifraud Technology Offers Significant Opportunity To Reduce Health Care Fraud ([GAO/AIMD-95-77](#), Aug. 11, 1995).

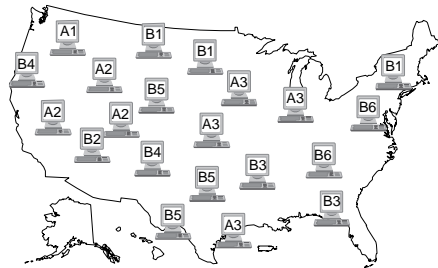
Medicare Claims: Commercial Technology Could Save Billions Lost to Billing Abuse ([GAO/AIMD-95-135](#), May 5, 1995).

Medicare: New Claims Processing System Benefits and Acquisition Risks ([GAO/HEHS/AIMD-94-79](#), Jan. 25, 1994).

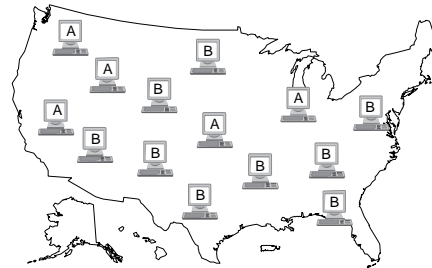
HCFA Strategy for Transition to MTS

GAO HCFA Strategy for Transition to MTS

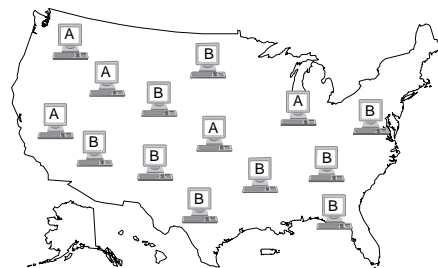
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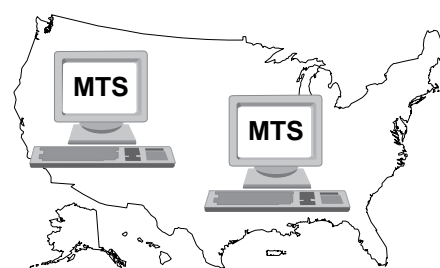
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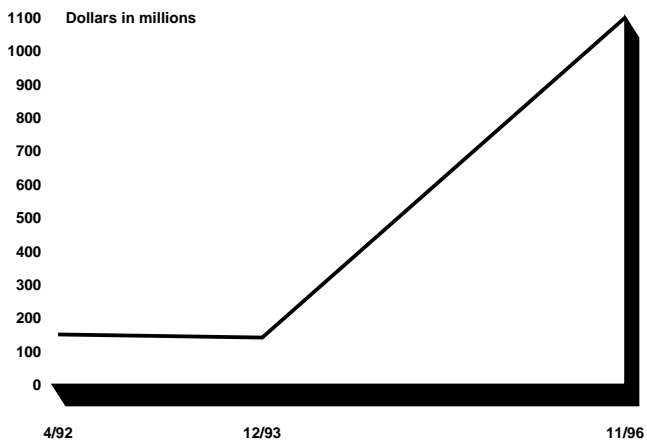
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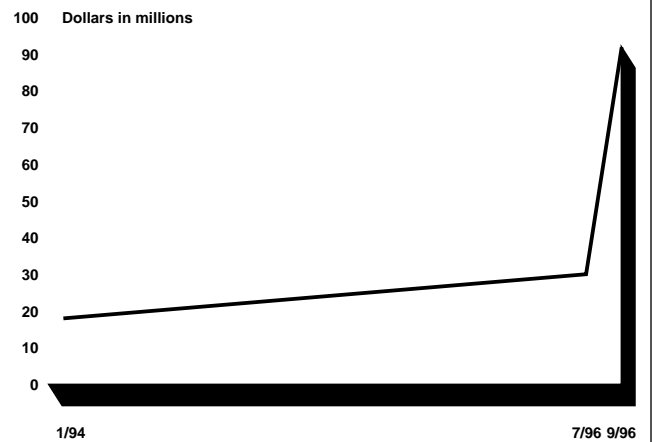
Medicare Transaction System: Escalating Costs

GAO Medicare Transaction System: Escalating Costs

Total Estimated Costs

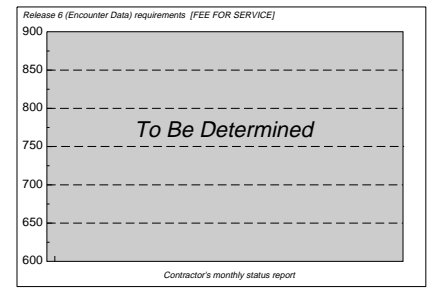
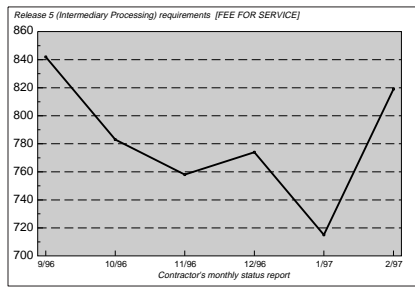
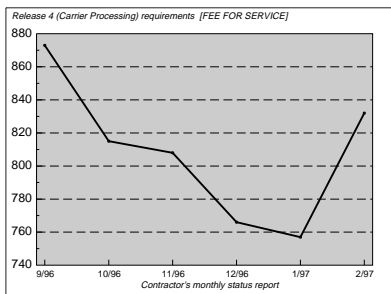
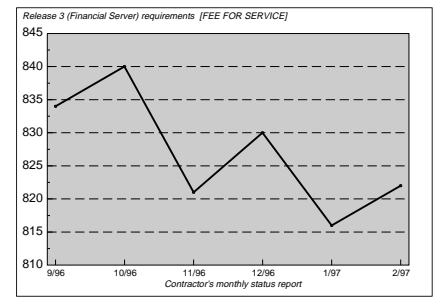
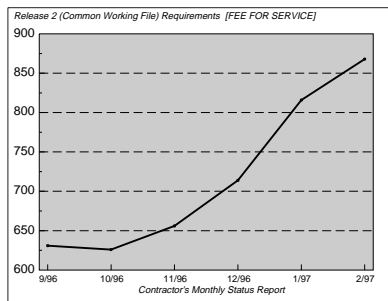
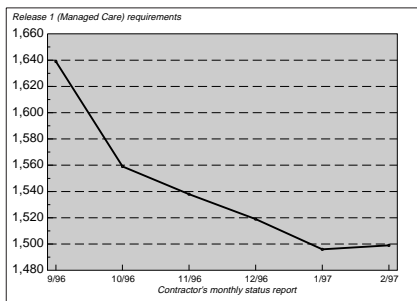


Software Development Contract Costs



Volatility of MTS Requirements

GAO Volatility of MTS Requirements



NOTE: Scale above [600-900] for purposes of illustration only; numbers of requirements for this release are not yet available.

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