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Jonathan Blum
Deputy Administrator and Director
Center for Medicare
Centers for Medicare and Medicaid Services
200 Independence Ave SW
Washington DC 20201

Re: Redesign of Medicare competitive bidding program

Dear Mr. Blum:

Thank you for meeting with me and my colleague, Larry Ausubel, on Monday, Nov. 1, to discuss the Medicare competitive bidding program. A discussion with auction experts is an important first step in fixing the problems with the program. Although I entered the meeting with high hopes that we could quickly move from a discussion of identified problems to a discussion of solutions, I was disappointed that we did not have time to give proper attention to the discussion of solutions. This letter and the references are intended as an initial follow-up to clarify some of the points raised in the meeting. It is also intended to address some of the points you made at a press conference following the release of the names of the winning bidders.

First let me clarify what I and 166 other auction experts agree are the problems with the current design (Cramton and Katzman 2010a; "Letter" 2010). The overall problems are four. The first three combine to assure that the auction prices are severely distorted from competitive market prices. The fourth, a lack of transparency, prevents the pricing problems from being quickly identified and corrected.

The result is serious pricing errors. Some are too high, causing excess expense. Others are too low, causing supply shortages, compromising service quality and promoting fraud. These problems will directly affect senior citizens and are completely unnecessary.

Some of those problems have already begun to surface. One prominent supplier of respiratory therapy supplies, Lincare, has announced it is accepting contracts to supply oxygen in two cities even though the price set by the competitive bidding program is so low the company will have to subsidize the work from other parts of its business. Clearly that is unsustainable for businesses in the long run.

It is important that the program be stopped before its Jan. 1 start date to prevent harm to Medicare beneficiaries.

The problems:

Non-binding bids

In the Medicare auction, bidders are not bound by their bids. Any auction winner can decline to sign a supply contract following the auction. This undermines the credibility of bids and encourages low-ball

bids in which the supplier acquires at no cost the option to sign a supply contract. This aspect of the proposed system has led to the predictable outcome. A number of bidders, realizing that prices were set below their costs, have refused to sign contracts in the pilot programs.

Flawed median-bid pricing rule

As in standard procurement auctions, bids are sorted from lowest to highest, and winners are selected, lowest bid first, until the cumulative supply quantity equals the estimated demand. The odd part comes next. The system sets reimbursement prices at the median of the winning bids, rather than the clearing price at which supply and demand balance. Thus, fifty-percent of the winners are offered a contract price *less than* their bids.

Since most providers are small, they lack the resources to invest in information and strategy in preparing bids. For them an effective and easy strategy is the low-ball bid. It is a winning bid with a negligible effect on the price. However, with many firms following this strategy the median-bid price is significantly biased downward and possibly below the cost of all suppliers. This possibility is not a problem for the low-ball bidders since, as described above, suppliers have the option of not signing the contract in such an event. But below-cost prices are obviously unsustainable in the long run. In the short run, CMS may be able to obtain agreement from winning bidders to perform the work. But to deal with below-cost prices, the suppliers will ultimately have to subsidize the contract from other parts of their business, cut corners on quality, not deliver promised supplies or engage in fraud. Clearly this is not what anyone wants. Again, this may lead to supply disruptions and shortages, eroding access and quality for beneficiaries and discourage the development of improved technologies.

In the case of Lincare, the company said it was accepting supply contracts in Miami and Charlotte to support Medicare beneficiaries in those areas. But the company said it has no plans to acquire contracts in the other seven cities that are part of Medicare's first stage of implementing the program.

In the next stage of the program, slated to begin later in 2011, 91 cities will be taking part in the bidding. It is hard to imagine that many, if any, companies would subsidize contracts in 91 cities with funds from other parts of their businesses.

Encourages strategic bid skewing

The current system selects winners using composite bids, which are an average of a bidder's bids across many products, weighted by government demand estimates. This provides a strong incentive for bidders to distort bids away from costs—i.e., bid skewing. Bidders submit low bids on products for which the government has overestimated demand and high bids on products for which the government has underestimated demand. As a result, prices for individual products do not align with costs.

Bid skewing is a common problem in U.S. timber auctions. There it leads to higher cost uncertainty. Its impact in the Medicare auctions and beneficiaries will be much more severe—selective fulfillment of customer orders. Medicare beneficiaries are likely to find that only high-margin products are available.

Lack of transparency

In the Medicare auctions, it is unclear how demand and bidder capacities are determined. Other than price bids, these are the two main inputs that determine the winners and the product prices. In addition, both quality standards and performance obligations are unclear. Lack of transparency is

unacceptable in a government auction. It leads to fraud and corruption, and is in sharp contrast to well-run government auctions such as the Federal Communications Commission spectrum auctions.

These four fundamental problems suggest that the likely long-run outcome will be a “race to the bottom,” in which providers become increasingly unreliable, product and service quality declines, and fraud and abuse increases.

Redesign of the Medicare auction program is essential

For the reasons above, I believe that CMS should begin work immediately on a redesign of the program. Thus, I was especially disheartened to read the Nov. 4 article, [“CMS Not Planning to Redesign DME Competitive Bidding Program”](#) in *Inside Health Policy*. The article reports that you made a number of statements at a press conference on Nov. 3 following CMS’ announcement of contract suppliers from the Round 1 (Re-bid).

Not only do I find your decision troubling, I am also troubled by your statements, assuming you were quoted correctly. Many of the statements do not properly represent my position or that of my 166 colleagues. They also do not reflect how auctions actually work. This demonstrates the urgency of having independent auction experts and Medicare experts review the auction, identify problems, and propose a redesign that addresses observed and easily anticipated problems. Continuing full-steam ahead in light of the problems with the Round 1 (Rebid) is counter to the public interest and common sense.

To clarify my view and set the record straight, I quote in full several statements in the article and provide my response.

- 1) *“CMS does not plan to redesign the competitive bidding program for durable medical equipment (DME) because 92 percent of suppliers offered contracts accepted them, CMS Deputy Administrator Jonathan Blum said Wednesday (Nov. 3).”*

The acceptance rate—92% or otherwise—is a poor measure of performance and certainly inadequate to conclude that the program does not require redesign.

The number is extremely misleading, since it is not weighted by supplier capacity nor does it control for supplier experience and quality. Theory, experiment, and practice all tell us that the frequency of low-ball bidding will be highest among 1) small suppliers, since small suppliers are less able to invest in acquiring information and invest in the development of sophisticated bidding strategies, 2) more desperate suppliers, who do not have good alternatives, such as suppliers that offer poor services or are near bankruptcy, and 3) suppliers more willing to engage in fraud, corruption, or other abuse and who therefore can make extremely low prices work for them, while causing enormous harm to Medicare beneficiaries and taxpayers. Thus, we should expect the winners to be dominated by low-ball bidders in one or more of the three categories above. Furthermore, suppliers in one or more of the three categories above are not only likely to win, but are likely to accept even at a price that would be unprofitable for an experienced and informed bidder, who is unwilling to cut corners on quality or engage in selective fulfillment of Medicare orders or other harmful actions.

Therefore, the high acceptance rate likely is nothing more than a statement that among the winners there is a high frequency of 1) small suppliers, 2) desperate suppliers, or 3) fraudulent suppliers.

Your own analysis of contract suppliers reported on Oct. 14 acknowledged problems with the Round 1 (Rebid) results. At that time you announced that you were delaying release of the names of winning bidders because of “red flags” with the program: “In testing a new program integrity tool on the list of potential competitive bidding suppliers, a number of red flags were raised that require further examination before CMS announces the final list.” To my knowledge nothing further was reported about the resolution of the “red flags.” This is consistent with CMS’ complete lack of transparency in the auction program but is inconsistent with standard practice in a government auction.

Among the 1,217 contract suppliers there surely are some good providers both large and small that now provide high-quality service to Medicare beneficiaries and will continue to do so. I do not mean to lump all contract signers into the group of desperate and fraudulent suppliers. Nonetheless, I would predict that over time the quality of the contract supplier group would become increasingly poor, consistent with the race to bottom mentioned above. This prediction is supported by theory, experiment, and practice.

If we are to take the 92% number as an indicator of success, then CMS should release without delay data with which independent experts can evaluate CMS’ claims of success. These data would include for each Competitive Bidding Area and each product and each bidder, 1) the bidder’s market share in 2008 and 2009, 2) the bidder’s stated capacity in the qualification process, 3) the capacity that CMS used in its determination of winning bidders, and 4) the bidder’s bid price. Note that this information can be provided on an anonymous basis if necessary, although in a government auction it is common to release all bids following the auction in the interest of transparency.

Without any further evidence, I would conclude that the 92% acceptance rate is simply an artifact of the existing industry structure in which thousands of bidders fall into the categories of 1) small supplier, 2) desperate supplier, or 3) fraudulent supplier. My guess is that CMS’ flawed auction has succeeded in finding a high frequency of suppliers that fall into these three categories. I am especially concerned about a high frequency of desperate, fraudulent, or poorly informed winners.

- 2) *“Blum said, despite the specific qualms with the design, the overriding concern of the academics is that winning bidders would not sign contracts. Given the 92 percent bid-acceptance rate, he said the design must be good, though CMS will monitor the program for signs of problems and make changes if needed.”*

This misrepresents my position and that of my colleagues.

Our concern is that the CMS auction rules violate basic principles of auction theory and practice, and that these flaws are so severe that failure of the auction program is a near certainty under the existing rules. Moreover, the rules are readily fixed through redesign. This should be done promptly and carefully in a collaborative process including auction experts, Medicare beneficiaries, and DME providers.

While it is true that the simplest theoretical models predict that the acceptance rate would be low, in more realistic models that recognize differences among the bidders in size, experience, and quality, then the theory yields outcomes with high acceptance rates—by low-quality suppliers—but this has disastrous consequences for Medicare beneficiaries and taxpayers. Even the less experienced or less informed small bidders are harmed as they fall prey to the well-known winner’s curse and go bankrupt. The only parties that do benefit are those that get away with fraud and abuse long enough to make some money before exiting.

Given CMS' poor track record with auctions over the last 10 years, it is essential that the monitoring of the program not be limited to CMS alone. Rather best practice is to have an independent market monitor (either an individual or a committee of three experts) who has full access to all information and who reports regularly on the markets performance. This model of an independent market monitor has been adopted universally in U.S. electricity markets (as well as throughout the world), and has proven to be extremely effective in identifying problems with the markets and in proposing adjustments to resolve problems quickly as they are identified. The independent monitor would report directly to the Secretary of the Department of Health and Human Services.

One small point about this statement and the next: You refer to us as academics. While this is true, we are commenting as independent auction experts, not academics. Many of us have substantial experience in designing and implementing auctions. For example, for the last 17 years I have designed and implemented auction markets in many industries (electricity, telecommunications, gas, timber, transportation, diamonds, e-commerce, financial securities, etc.) and many countries (US, UK, Canada, Australia, Colombia, India, Germany, France, Italy, Spain, Mexico, etc.). The work has involved assets valued at hundreds of billions of dollars. My colleagues and I have superb track records in designing and implementing auction markets that work well.

- 3) *“Blum added that the academics did not make considerations for small suppliers. CMS wanted at least 30 percent of the contracts to go to small suppliers, and the program far surpassed that goal with 52 percent of the contracts going to small businesses.”*

This assertion that “the academics did not make considerations for small suppliers” is wrong. Well before meeting on Monday, I provided you with materials for the meeting. I also posted all the materials on my web site at www.cramton.umd.edu/auction-papers.htm#Medicare. In addition, I sent a summary that consisted of 16 slides. Slide 14 of the summary specifically addresses the issue of small businesses:

Slide 14 of Summary Presentation to CMS on 1 November 2010:

Design accommodates other considerations

- *Market structure*
 - *It is common to include a market share constraint, such as no supplier can bid for more than 20 blocks (20%) of any item*
 - *A preference for small businesses can be applied, such as a requirement that at least 20 blocks of any item be won by small businesses*
 - *Likely not necessary given current market structure and supply reduction incentives of large bidders*
 - *However, if the constraint does bind for an item, then the auction would result in a lower price for small businesses*
 - *Participation by small businesses is encouraged, since small businesses know that at least 20 blocks will be awarded to small businesses*
 - *These constraints assure a diversity of winners, consistent with long-run sustainable competition*

Not only was the small business issue addressed in our summary, but it predicts that a constraint on small business participation is probably unnecessary when a proper auction is conducted. Of course, with the CMS' current design, theory would predict that an even higher share of winners would be small businesses for the reasons discussed above. This appears to have happened, although I await the receipt of data from CMS in order to confirm.

Promoting entry and small businesses is something that I have studied extensively and built into many successful auction designs that are used in practice.

4) *“Over 10 years, the program is expected to save Medicare \$17 billion and beneficiaries \$11 billion with lower copays and premiums, Blum said.”*

This saving calculation is wishful thinking based on extrapolating numbers that were the result of a seriously flawed auction process. I am confident that competitive bidding can reduce cost and improve quality, but only if CMS adopts proper auctioning methods. As it stands, the existing program will harm taxpayers, Medicare beneficiaries, and efficient suppliers. I find it troubling that CMS would make 10-year claims on a program with such basic flaws.

Disaster can be avoided but only with prompt action

I urge you to have an open mind about the identified flaws and potential redesign. The flaws are serious and worthy of prompt action even at this late stage in the process. The flaws are confirmed in theory (Cramton and Katzman 2010b) and experiment (Kim et al. 2010).

What we have is a train racing toward a mountain with an unfinished tunnel. Unless the tunnel is finished, the train wreck is a certainty. It is also certain that the train wreck will prompt a change—either the completion of the tunnel or the stopping of future trains. My hope is that you will decide to finish the tunnel, and will enlist the help of tunneling experts in the process. Taxpayers, Medicare beneficiaries, and efficient suppliers will all benefit from your thoughtful actions. The stakes are enormously high.

Sincerely yours,



References with abstracts

(See www.cramton.umd.edu/auction-papers.htm#Medicare for the latest versions.)

Cramton, Peter (2010) "[Auction Design for Medicare Durable Medical Equipment](#)," Working Paper, University of Maryland, November 2010. [[Presentation](#)] (Providing a draft design that addresses the flaws of the CMS design.)

An auction design for Medicare Durable Medical Equipment is presented. The design addresses the flaws in the current program. Bids are binding commitments. Each bid binds the bidder to particular performance obligations depending on the auction outcome. The bids are made credible through a rigorous qualification one month before the auction. Each bidder provides a financial guarantee in the form of a bid bond or a deposit in proportion to the bidder's desired maximum eligibility. Each winner provides a performance guarantee in proportion to the winner's estimated volume. The auction establishes a market clearing price for each product in each service area. The price paid to all suppliers is

the clearing price that balances supply and demand. These prices are found in a simple price discovery process that allows both substitution across items and complementarities. The approach does not disrupt the current market structure. The emphasis is on establishing competitive prices, rather than excluding suppliers. This is accomplished by auctioning only 10% of the service areas each year for two-year contracts. The auction outcome is then used to establish the prices in the remaining 80% (the portion not covered by the two most recent annual auctions) with a simple econometric model. Each year a different 10% is used, so over ten years each service area is auctioned once. In auctioned service areas, only winners can supply during the two-year commitment period (winners still must compete on quality within the service area). Importantly, any certified supplier can supply in any non-auctioned service area, which includes 80% of the country.

Cramton, Peter and Brett E. Katzman (2010a), "[Reducing Healthcare Costs Requires Good Market Design](#)" *The Economists' Voice*, 7:4, www.bepress.com/ev/vol7/iss4/art8, October 2010. (Discussing the problems with the current design.)

One sensible way to reduce healthcare costs is to harness market forces, where practical, to nurture competition and innovation. Lower prices and improved services should follow. However, the switch to market pricing is not an easy one. Medicare's experience with medical supplies illustrates the challenges and offers some important lessons. The key lesson is that government programs can benefit from introducing market methods, but doing so requires good market design—something that may not come naturally to the implementing agency, especially in light of political forces and organizational inertia.

Cramton, Peter and Brett E. Katzman (2010b), "[Designed to Fail: The Medicare Auction for Durable Medical Equipment](#)" Working Paper, University of Maryland, November 2010. (Demonstrating the problems of the CMS design in a simplified theoretical model.)

We examine the theoretical properties of the proposed auction format for Medicare Durable Medical Equipment. The format was used in a pilot auction in November 2009 covering nine cities and is planned for use in 100 cities in 2010. Two unusual features of the Medicare auction are 1) non-binding bids and 2) a median pricing rule in which winners are paid the median winning bid, rather than the clearing price where supply and demand balance. We show that these two features lead to complete market failure. Bidders in equilibrium submit low-ball bids resulting in a median below each bidder's cost. As a result, bidders refuse to sign supply contracts and no quantity is supplied. In sharp contrast, the standard clearing-price auction has each bidder bid true costs as a dominant strategy, resulting in competitive equilibrium prices and full efficiency. Recent Caltech experiments (Kim et al. 2010) confirm these theoretical findings.

Kim, Caroline, Brian Merlob, Kathryn Peters, Charles R. Plott, Andre Pradhana, and Yuanjun Zhang (2010), "[An Evaluation of the Proposed Procurement Auction for the Purchase of Medicare Equipment: Experimental Tests of the Auction Architecture](#)," Working Paper, California Institute of Technology, October. (Demonstrating the problems of the CMS design in a scientific experimental laboratory.)

This study focuses on the basic structure of the Medicare supplies auction, which is proposed as a central feature of the Medicare Bidding Program. We report on experiments conducted with auctions that have the major features of the auction but are also sufficiently simple to allow the identification of the basic causes of successes and failures. The basic conclusions of the study are: (1) Good auction architectures for procurement applications do exist. (2) The proposed Medicare supplies auction is not a good procurement auction. It is based on an inappropriate architecture that cannot deliver services at competitive rates and qualities. (3) The Medicare supplies auction architecture cannot be adjusted in some simple way. There is no "quick fix". The two central pillars of the auction are flawed. First, the price determination by the median accepted bid is not an appropriate method for determining price. Second, the ability of bidders to cancel bids is an inappropriate guide for competitive bidding strategies.

“Letter from 167 Concerned Auction Experts on Medicare Competitive Bidding Program” to Chairman Stark, Health Subcommittee, Ways and Means, U.S. House of Representatives, 26 September 2010. Available at: <http://goo.gl/h6yq>. (Identifying flaws in Medicare’s Competitive Bidding Program.)

We are economists, computer scientists, and operation researchers with expertise in the theory and practice of auctions. We write to express our concerns with the Medicare Competitive Bidding Program for Durable Medical Equipment operated by the U.S. Department of Health and Human Services. We believe that competitive bidding can be an effective method of controlling Medicare costs without sacrificing quality. However, the current auction program has flaws that need to be fixed before it can achieve the objectives of low cost and high quality.