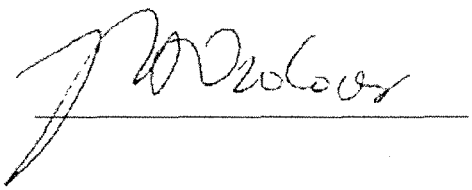
[REDACTED VERSION]

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

NATCHITOCHES PARISH HOSPITAL SERVICE DISTRICT and JM SMITH CORPORATION d/b/a SMITH DRUG COMPANY on behalf of themselves and all others similarly situated, Plaintiffs, v. TYCO INTERNATIONAL, LTD.; TYCO INTERNATIONAL (U.S.), INC.; TYCO HEALTHCARE GROUP, LP; THE KENDALL HEALTHCARE PRODUCTS COMPANY, Defendants.	§	Civil Action No. 05-12024 PBS **JURY TRIAL DEMANDED**

EXPERT DECLARATION OF PROFESSOR JANUSZ A. ORDOVER IN SUPPORT OF MOTION TO EXCLUDE THE TESTIMONY OF PROFESSOR EINER ELHAUGE

October 17, 2008



Janusz A. Ordover

I. INTRODUCTION

1. On January 31, 2008, I submitted an expert report in the liability phase of this matter and on March 26, 2008 I provided deposition testimony regarding the contents of that report.[1] In my report, I analyzed the antitrust claims made by Class Plaintiffs against Covidien. As a part of that report, I critiqued the various reports and data analyses proffered by Plaintiffs' expert, Professor Einer Elhauge, which purport to show that Covidien has foreclosed its rivals with two different types of contracts: sole-source contracts[2] with GPOs and share-based discount contracts[3], including bundling agreements, with purchasers of sharps disposal containers ("sharps containers").[4] According to Professor Elhauge, and contrary to my opinion, this foreclosure has led to the impairment of rival efficiency and has resulted in a lessening of the constraints on Covidien's market power. Subsequent to my deposition, I have been asked by Counsel for Covidien to clarify and summarize my critique of Professor Elhauge's empirical methodology in connection with Covidien's Daubert motion to exclude the testimony of Professor Elhauge.

2. In this report, I explain why certain data analyses by Professor Elhauge are flawed and cannot reliably assist the fact finder in a determination whether (or not) Covidien's conduct foreclosed its rivals from the U.S. market for sharps containers. Specifically, Professor Elhauge's approach is incapable of separating the effects on Covidien's rivals from Covidien's legitimate competitive conduct as opposed to the effects of the putative

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[1] On January 19, 2007, I also submitted a report in opposition to Class Plaintiffs' motion to certify the class of direct purchasers in this matter. I gave deposition testimony related to that report on February 8, 2007.

[2] A "sole source" contract is a contract whereby a GPO agrees to broker transactions involving a particular product category between its members and the designated supplier. For example, under a sole-source contract with Covidien covering disposable sharps containers, the GPO would agree to broker transactions for disposable sharps containers only between Covidien and its member hospitals.

[3] A "share-based" contract refers to the granting of discounts or rebates based on a customer's fraction of sharps container purchases accounted for by Covidien. These share contracts generally apply to a customer's purchase of sharps containers. Bundling contracts which include products other than containers also have share discounts in them.

[4] *See* Expert Reports of Einer Elhauge filed on December 18, 2007 (hereinafter "Elhauge Initial Report")and on February 15, 2008 (hereinafter "Elhauge Reply Report") on behalf of Class Plaintiffs in *Natchitoches et al v. Tyco*

(footnote continued ...)

anticompetitive exclusionary conduct. Without the ability to distinguish between these two effects, Professor Elhauge cannot reliably conclude that the challenged Covidien contracts have, in fact, foreclosed competitors and harmed competition in the sale of sharps containers to hospitals and other health care facilities. Indeed, there is ample evidence laid out in my liability report that the accused practices did not have such anticompetitive exclusionary effects on the market.

II. PROFESSOR ELHAUGE'S EMPIRICAL ANALYSES DO NOT ESTABLISH ANTICOMPETITIVE FORECLOSURE

3. Professor Elhauge concludes that the challenged contracts have anticompetitively foreclosed rivals. That is, according to him, absent these contracts rivals would have been able to lower their costs and gain a substantially greater portion of the market, which, in turn, would have enabled them to exert materially greater competitive pressure on Covidien. His overarching conclusion rests heavily on three sets of data analyses that purport to measure the effects of Covidien's challenged contracts on rivals' sales. Briefly, these analyses consist of the following: 1) a set of comparisons of rivals' shares at hospitals that took Covidien's challenged contracts and at hospitals that did not take these contracts (what Professor Elhauge calls his "simultaneous comparisons," and I term the "gap analysis"); 2) a series of regressions that purport to measure the effect of the challenged contracts on hospitals while controlling for changes over time; and 3) a comparisons of rivals' performance among Novation members during Covidien's sole-source contract at Novation and after this contract expired.

4. Based on these analyses, Professor Elhauge concludes that rivals lost substantial sales to Covidien as a result of the challenged contracts. However, these analyses are not capable of effectively separating the anticompetitive impact (if any) of the contracts from sales that Covidien would have made in the absence of these contracts; that is, from sales that Covidien

(... footnote continued)

International et al. See also Expert Declaration of Einer Elhauge, December 15, 2006, in support of Plaintiffs' motion to certify the proposed class of direct purchasers (hereinafter "Elhauge Class Declaration").

would have made because of hospitals' preference for the combination prices and service offered by Covidien, or merely due to hospitals' familiarity and satisfaction with the Covidien offerings.

5. In my liability report I argued that the available evidence strongly indicates that rivals were not competitively impaired in their ability to vie for the business of hospital customers. I will not reprise these arguments in any great detail but will provide a broad overview and supplement, to the extent allowed, my prior evidence where relevant.

A. Professor Elhauge's "Gap Analysis"

6. In Professor Elhauge's reports filed in this matter on December 18, 2007 and February 15, 2008, he presents a series of charts that purport to show that Covidien's rivals perform better at hospitals that do not take share contracts, and/or do not utilize Covidien's sole-source GPO contracts. (*See*, for example, Elhauge Initial Report, Exhibits 9-16.) Professor Elhauge implements his "gap analysis" in two steps. First, he classifies all hospitals into "Affected" and "Unaffected" groups.[5] The "Affected" group includes hospitals that are allegedly compelled by the challenged contracts to purchase from Covidien although Professor Elhauge does not claim that this group is comprised exclusively of such hospitals. According to Professor Elhauge, these would be hospitals that, for example, take Covidien's share contracts. The "Unaffected" group includes hospitals that are free to buy from Covidien's rivals and are not subject to the challenged contracts. Table 1 below summarizes the four different allocations of hospitals to the Affected and Unaffected groups depending on the criterion used to deem the hospital Affected.

[5] This terminology is mine. Professor Elhauge employs different terms for these groups. He sometimes uses the terms "restricted" and "unrestricted" and at other times employs the terms "burdened" and "unburdened." *See, e.g*, Exhibits 9-16 in Elhauge Initial Report.

7. After the hospitals have been classified, the second step entails a comparison of rivals' share of sales in the Affected versus Unaffected group. According to Professor Elhauge, if rivals' market share is lower in the Affected group relative to their share in the Unaffected group, that gap must be attributed to the effect of Covidien's contracts and, therefore, evidences anticompetitive foreclosure. In my view, this interpretation of the gap is untenable. Below, I explain why this is the case for each of the two types of challenged contracts: share-based hospital contracts and sole-source GPO contracts.

Gap Analyses of Covidien's Share Contracts

8. As I explained in my liability report Covidien's share contracts do not foreclose rivals from the sharps container market.[6] These contracts imply no penalty for termination other than the loss of discounts that are built into the share contracts. The loss of discounts does not deter competition since rivals can compete to win the business of the entire hospital (i.e., they can bid for "whole-house conversions"), for example, or for a sufficient share that would make the hospital indifferent between staying with Covidien and switching the "headroom" plus the necessary additional share to the challenger.[7] Because hospitals typically -- but not invariably -- prefer to standardize and purchase sharps containers from just one vendor, sound economics would suggest that whole-house conversions are perhaps the most reasonable competitive strategy. A rival supplier offering equally attractive sharps containers merely would be required to provide a price somewhat below Covidien's current offering and compensate the customer for any conversion costs, which I understand are small,[8] in order to induce the customer to switch.[9] Even in situations where a hospital may wish to switch partially to a rival, a hospital could and would do so if offered a sufficiently attractive price.

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[6] *See* Section X of Ordover Liability Report.

[7] The "headroom" is defined as that share of purchases that is "left over" after the hospital fulfills its share commitment to the supplier, be it Covidien, BD, or a reusables vendor.

[8] *See* Ordover Liability Report, p. 62. It is common for the winning supplier to help defray these conversion costs.

[9] It is important to realize that the higher Covidien's allegedly supra-competitive prices are,the more inclined the hospital should be to convert whole-house to the challenger.

9. The evidence demonstrates the feasibility of partial and whole-house conversion. Many current large Daniels customers were previously Covidien customers who utilized Covidien share contracts and who were converted partially or whole-house.[10]

10. Indeed, many hospitals that Professor Elhauge classifies in the Affected group because they are ostensibly foreclosed to Covidien's rivals by these hospitals' share contracts with Covidien, subsequently switched to Covidien's rivals entirely or partially and dropped their share contracts with Covidien. For example, of the 1,412 hospitals that Professor Elhauge classifies as Affected in all months of 2004 because they purchased sharps containers from Covidien pursuant to share contracts during that year, 276 (or 20 percent of the total) dropped their Covidien share contracts during the 2005-7 period and switched wholly or partially to a rival.[11]

11. It is clear that not all hospitals in Professor Elhauge's Affected group are necessarily foreclosed to rivals. Thus, in order to estimate the impact of share contracts on rivals' sales, it is important to design an empirical methodology that can disentangle (a) Covidien sales in the Affected group due to the attractiveness of Covidien products from (b) Covidien sales (if any) in the Affected group due to the putative foreclosing impact of the challenged share contracts.

12. Professor Elhauge asserts that his methodology is capable of separating out these two potential drivers of Covidien sales. In essence, he claims that he can identify Covidien sales stemming from the foreclosing effects of share contracts by comparing Covidien's share in the Affected group with its share in the Unaffected group.[12] He avers that if one observes that

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[10] *See, e.g.,* Ordover Liability report at footnotes 115 and 118.

[11] Here "rivals" encompasses Stericycle, Daniels or BD, which together with Covidien, represent the vast majority of the sharps disposal market. Smaller firms, such as Sureway and Bemis also participate in the relevant market. The 1,412 customers represent those that purchased under a committed tier in all months of 2004 and made at least 90 percent of their sharps container purchases from Covidien. Since BD data for 2007 are not available, Covidien customers who switched to BD in that year are not counted as part of the 276 switchers. As such, my analysis underestimates the extent of competitive switching. My switching analysisutilizes the backup data to Exhibit 9 in Professor Elhauge's Reply Report.

[12] See, e.g., Elhauge Initial Report at par. 179.

Covidien's share is higher in the Affected group, then that difference in shares must be due to the foreclosing effect of the contracts. This is because the only material difference between share-contract based Affected and Unaffected groups is that all the hospitals in the Affected group purchased under Covidien's share contracts while all the hospitals in the Unaffected group did not: the latter hospitals either purchased from a rival (under whatever contract it was offering) or from Covidien but not under a share contract.[13]

13. The critical premise of Professor Elhauge's methodology is that there is no reason to think that the average hospital in the Affected group is any more likely to favor Covidien for reasons of clinical merit, price, familiarity, or some reason unobservable to the analyst, than is the average hospital in the Unaffected group. Hence, according to Professor Elhauge, any difference in Covidien shares across the Affected and Unaffected groups must be due to the contracts. This premise is entirely incorrect and inconsistent with sound economic thinking.

14. Hospitals do not randomly select whether or not to take share contracts to purchase sharps containers from Covidien. (In the next section, I discuss how this issue affects the analysis of the effects of sole-source GPO contracts on rivals shares in the two groups.) Instead, hospitals choose what to buy and from whom given their preferences for different vendors, types of products, their needs, the available alternatives, and -- of course -- the terms offered by the vendors. Hospitals that choose to standardize on Covidien products based entirely on the merits of Covidien's product offerings are more inclined to take a share contract since doing so would provide them the lowest prices (i.e., they would receive the best discounts associated with making the most purchases). On the other hand, hospitals that decide to buy mainly from Covidien's rivals – again for reasons adduced above – would, of course, not take Covidien's share contract. Hence, those hospitals that buy from Covidien using share contracts are, on average, more likely to prefer Covidien products (when faced with the same

[13] *See* discussion in Elhauge Initial Report at pars. 179 to 187. A hospital that chooses not to standardize vendors and buy most of its needs from a Covidien rival and buy some of its remaining needs from Covidien can do so under Covidien's "access tiers" that were available at most GPOs. In its GPO contracts, Covidien offers hospitals a choice of several commitment tiers. Hospitals that choose to purchase under an "access tier" do not commit to purchase any stipulated percentage of their needs from Covidien.

choices of prices and products) than those that choose not to avail themselves of the discounts provided by Covidien's share commitment contracts.

15. Thus, Professor Elhauge wrongly contends that the only material difference between the Affected and Unaffected groups is that all the hospitals in the Affected group purchased under Covidien's share contracts while all the hospitals in the Unaffected group did not. Clearly, if this is not the case, then the alleged gaps identified by Professor Elhauge cannot be used to measure the foreclosing effects of the challenged share contracts. Basic economic logic indicates that the actual choices made by hospitals in each of these two groups have revealed something important about their preferences: on average, hospitals in the Affected group are more inclined to buy from Covidien for reasons other than the putative foreclosing impacts of the share contracts. Hence, even absent Covidien share contracts, rivals' sales to hospitals that choose to utilize the challenged contracts would be lower than its sales to hospitals that choose not to, everything else being the same. The resulting gap in rivals' sales is the result of hospitals' preferences and legitimate competition – not the result of any foreclosing effect of the challenged contracts.

16. This error in Professor Elhauge's gap analysis, i.e., the confounding of the impact of the challenged contracts with the impact of hospitals' preferences, is an instance of a fairly common, yet basic, error in empirical analysis, namely "selection bias."[14] One implication of selection bias in this case is that Professor Elhauge's methodology is hard-wired to find a "gap" – potentially even a substantial gap – regardless of the actual impact of the contracts, because it depresses the rivals' share in the Affected group relative to the Unaffected group. Put differently, even if the challenged contracts had only a small impact on rivals' sales, Professor Elhauge would still find a substantial gap, but this gap would stem from the normal workings of competition and not foreclosure. In fact, nothing in Professor Elhauge's analysis rules out the possibility that the *entire gap* he estimates is due to sales gained by Covidien through legitimate competition. As a result, he cannot identify reliably the economic forces

[14] *See, e.g.*, Jack Johnston and John DiNardo, Econometric Methods, McGraw-Hill/Irwin, 1997, at p. 447.

that create this gap, and in particular whether the observed gap has anything to do with the purported anticompetitive effects of the challenged contracts.

17. A hypothetical example clarifies the point. (*See* Exhibits 1-3.) Assume that there are 100 equal-sized hospitals in the relevant market. Further assume that, initially, Covidien does not offer share contracts. Assume that 50 percent of hospitals buy from Covidien and for clinical or transaction costs reasons choose to standardize, i.e., buy 100 percent from Covidien.[15] The other half buys nothing from Covidien and standardize on a rival. (*See* Exhibit 1.) Assume that the following year Covidien introduces share contracts, which include discounts for standardizing on Covidien. All 50 hospitals that had previously standardized on Covidien choose to take these share contracts since they were already standardizing on Covidien sharps containers for clinical or other reasons, and the contracts (by assumption) offer better terms than uncommitted purchases. The remaining 50 hospitals continue to buy 100 percent from Covidien's rivals. (*See* Exhibit 2.)[16]

18. In this example, although rivals lost no sales as a result of Covidien's share contracts, using Professor Elhauge's proposed methodology one would find a huge "gap" of 100 percentage points that would be fully attributed to the presence of the share contracts. Thus, this analysis would imply that absent the contracts, Covidien's rivals would have the entire market for containers to themselves. (*See* Exhibit 3.) This hypothetical example illustrates that, because of the selection bias that pervades Professor Elhauge's analyses, the gap calculations are unable to distinguish between Covidien's sales because of the alleged anticompetitive foreclosing effects of the challenged contracts and sales won by legitimate competition.

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[15] The assumption of a 100 percent purchases from Covidien was made for simplicity and clarity of exposition. The conclusions illustrated by the hypothetical example under the assumption of standardization on a single supplier continue to hold even if a hospital that standardizes on Covidien buys mostly but not entirely from Covidien (and similarly, hospitals that standardize on a rival's products buy mostly but not entirely from that rival).

[16] The introduction of the share contracts is assumed in this hypothetical example to not have any effect on the sales of Covidien. This is intentionally designed to highlight the fact that Professor Elhauge's methodological approach would find a substantial effect from the challenged contracts even when, by construction, there is none. Of course,

(footnote continued ...)

19. I now modify the hypothetical slightly to demonstrate the shortcomings of Professor Elhauge's methodology and the interpretation of the "gap" even when share contracts do have an effect on rivals' sales. Thus, I now postulate that Covidien's introduction of share contracts leads five of the 50 hospitals that purchased from Covidien's rivals in the first period to switch to Covidien in order to take advantage of the share discounts. The remaining 45 hospitals continue to buy 100 percent from Covidien's rivals.

20. In this revised example, Professor Elhauge's methodology finds a 100 percent gap as between the Affected and Unaffected groups despite the fact that rivals lost only 10 percent of sales (i.e., five hospitals switched) as a result of Covidien's share contracts. As before, Professor Elhauge would attribute this gap to the presence of the share contracts and likely would conclude that the contracts vastly impeded rivals' ability to compete. This is clearly not so because, in this example, the selection bias generates a very large gap despite the fact that the introduction of the contracts only had a minimal effect on rivals' share. Indeed, the impact could well be so small as not to weaken rivals' competitive capabilities. In sum, Professor Elhauge's methodology cannot effectively distinguish between allegedly anticompetitive foreclosing effects of the challenged contracts and sales that Covidien won (and would have won in the but-for world) through legitimate competition.

21. To further illustrate why Professor Elhauge's gap analysis fails to capture the impact of the challenged contracts, I extend the hypothetical example out to a third period. In Period 3, two of the five hospitals that I assumed had switched to Covidien in Period 2 in response to the share contracts now respond to more attractive pricing from Covidien's rivals by terminating their share contracts and switching back to rival container suppliers. Thus, by assumption, in the third period rivals have been able to overcome the putative competitive impediments created by the challenged contracts and win back two of the five hospitals that were lost in Period 2. Professor Elhauge's approach reassigns these two hospitals to the

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setting out the example in this fashion does not imply that I believe these contracts do not influence sales to some extent.

Unaffected group in Period 3. After the reassignment Covidien's rivals' share in the Affected group remains at 0 percent while their share in the Unaffected group remains at 100 percent. Although the impact of the contract has decreased in Period 3 in this example, because now only three hospitals (out of the initial five switchers) remain with Covidien, the estimated gap does not budge; it remains at 100 percent. More generally, since Professor Elhauge always assigns those hospitals won by rivals to the Unaffected group (and those they lose – or fail to win for whatever reason – to the Affected group), his methodology is pre-determined to find a persistent gap in rivals' performance between these two groups of hospitals.

22. The example in paragraph 21 shows the effects of the reallocation methodology on the estimated gap. The example shows that, despite the reduced impact of share contracts on rivals' overall share in the market, the gap does not change in a way that would indicate the growing strength of Covidien's rivals. Empirical support for this critique of Professor Elhauge's methodology is provided in my liability report. Specifically, I show that if hospitals with share contracts are not re-assigned from the Affected to the Unaffected groups as Daniels wins Affected group hospitals (i.e., these accounts continue to be assigned to the Affected group), then the gap in Daniels' performance narrows considerably, consistent with the sound economic view that the impact of the challenged contracts should be diminishing as fewer firms avail themselves of these contracts.[17]

23. Another independent piece of factual evidence indicating that much of the estimated "gap" is not due the challenged contracts comes from the assessment of the performance of BD in the Affected and Unaffected groups. To begin, Professor Elhauge's gap analyses show that there are substantial gaps, at least in some versions of his calculations.[18] It transpires, however, that the gaps calculated by Professor Elhauge are due primarily to the fact that – not surprisingly – BD has a much higher share of sales to hospitals in the Unaffected group than sales to hospitals in the Affected group. Again, one would expect that some of the

[17] See, e.g., Ordover Liability Report at par. 124. When I adjust Professor Elhauge's analysis to correct for this flaw, I find that the gap essentially disappears in three out of the four years measured, and in 2006 the difference in Daniels' share reverses. That is, in that year, Daniels performs better at Affected hospitals than at Unaffected ones.

difference is attributable to hospitals exercising their unimpeded choice, given the available alternatives. Professor Elhauge, on the other hand, interprets this gap in sales as a measure of sales lost by BD due exclusively to the foreclosing impact of Covidien's contracts on BD. However, as I explained in my liability report, Professor Elhauge has offered no evidence that BD has been foreclosed from the market or from competing for hospitals that were buying under the share contracts.[19] Indeed he acknowledges that BD has reached an efficient scale.[20] Consequently, the gaps in BD's performance between Affected and Unaffected buyers can be most plausibly attributed to the fact that Covidien won customers by offering attractive terms to the GPOs and member hospitals and not because of the deleterious effects of the challenged contracts.

24. Professor Elhauge acknowledges that "self selection" bias may have affected some of his calculations but claims to have solved it in other of his gap analyses.[21] That is, he does not claim that his gap analysis of the putative impact of share contracts is untainted by selection bias. Thus, Professor Elhauge effectively admits that 75 percent of his gap analyses are potentially flawed. This is so because in six out of his eight analyses[22], the Affected group is defined to include hospitals that take Covidien share contracts and, as we have seen, the choice whether to take the share contract or not is not solely driven by the putatively exclusionary structure of the share contract. Even if Professor Elhauge were to claim that only a "small" portion of the "gap" can be attributed to self-selection bias, nowhere has Professor Elhauge quantified how much of the gap is due to such bias and how much is due to the putative foreclosing impact of the challenged contracts. In any case, any claim that much of the "gap" is due to the foreclosing impact of the share contracts is incorrect, in my view. For the reasons explained earlier, share contracts do not foreclose Covidien's rivals

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[18] *See, e.g.,* Exhibits 9-12 in his Initial and Reply Reports.

[19] *See, e.g.,* Ordover Liability Report at pars. 101-103.

[20] *See, e.g.,* Elhauge Initial Report at par. 39.

[21] *See, e.g.*, Elhauge Reply Report at pars. 194-199.

[22] Exhibits 9, 11, 12, 13, 15, and 16 in Professor Elhauge's Initial Report.

from the market; hospitals that take such contracts can be won and indeed have been frequently won over by rivals.

Gap Analyses of the effects of Covidien's Sole-Source GPO Contracts

25. Several of Professor Elhauge's gap analyses compare rivals' performance at hospitals that purchased their sharps containers through the sole-source Covidien GPO contract relative to rivals' performance at all other hospitals (Exhibit 10 in his Initial and Reply Reports).[23] Here, the Unaffected group includes members of GPOs that have a sole-source contract with Covidien but who nevertheless opt to purchase off contract from either Covidien or Covidien's rivals, and members of GPOs that have a dual/multi source contract with Covidien.

26. It turns out that self-selection bias and reallocation of hospitals as a result of changes in their purchasing practices also likely vitiate Professor Elhauge's gap analysis of sole-source contracts. As with share contracts, members of a GPO where Covidien has a sole-source contract do not randomly decide whether to purchase under that GPO contract. All hospitals that, for clinical or price reasons, decide not to purchase Covidien containers and instead buy from other firms must necessarily purchase entirely off contract (and are, consequently, included in the Unaffected group) while those who prefer Covidien products have a very strong incentive to use the GPO contract, given the prices stipulated in the sole-source GPO contract, and thus will be included in the Affected group. Thus, hospitals that buy from Covidien under the sole-source contracts are, on average, more likely to prefer Covidien products than those that choose not to avail themselves of these contracts. The resulting self-selection bias once again implies that the gap analysis cannot disentangle Covidien sales gained by legitimate competitive conduct from the impact of sole-source contracts.

[23] It should be noted that hospitals that purchase under a sole-source GPO contract likely also purchase using share contract. Of the seven major GPOs, HealthTrust is the only one that does not offer share contracts – although it has a sole-source contract with Covidien.

27. Reallocation of hospitals between the two groups due to changes in their purchasing behavior also confounds the interpretation of the "gap," as I have discussed earlier. In fact, many hospitals that were members of sole-source GPOs switched to Covidien's rivals who were not on contract. However, this switch is not acknowledged in the gap analysis as evidence of hospitals' ability to purchase from rivals. For example, [redacted] switched from Covidien to Daniels during the period when Covidien had a sole-source contracts at Premier. This hospital was initially placed by Professor Elhauge in the Affected group and was reassigned into the Unaffected group after the switch to Daniels. This procedure is flawed as discussed earlier. In particular, it "interprets" the switch "as if" the switching hospital suddenly faced a less constrained competitive environment which facilitates such switching. But this is not a tenable inference given that (potentially) nothing has actually changed from the competitive standpoint. Indeed, all the similarly situated hospitals in the sole-source GPOs that did not switch continue to be classified as Affected even if their decision to stay with Covidien was voluntary.

28. Clearly, the hospitals that switched have demonstrated that they were not constrained by their GPO contracts to purchase only from Covidien. Indeed, as I explained in my liability report, Covidien's sole-source contracts have not foreclosed rivals from the market since (a) rivals have been able to compete for such sole-source contracts, and (b) GPO members frequently purchase outside of GPO contracts. Indeed, some of Daniels' largest customers chose to buy outside their GPO contracts, which did not have Daniels as a contracted vendor.[24]

29. Additionally, whether or not Professor Elhauge's comparisons of rivals' performance at sole-source GPOs *versus* multi-source GPOs are distorted by the selection bias is a fatal flaw, it is not the only serious problem with his analysis. In my view, the whole premise on which this comparison rests is misguided. The key premise is that rivals have been foreclosed from

[24] [redacted]t

vying for GPO contracts and the gap analysis provides an independent *ex post* measure of the effects of that alleged foreclosure. But the evidence provided in my liability report indicates that rivals have not been foreclosed from competing for these contracts and, if anything, that competition has been robustly growing over time. Comparing conditions at multi-source GPOs with those at sole-source GPOs provides no insight as to the presence or absence of anticompetitive foreclosure even if Covidien's share at the sole-source GPO is higher than at some other GPO. This is because Covidien always faced competition from BD for such contracts and happened to prevail in some of these competitions. (And BD prevailed at Broadlane where it had a sole-source contract from 2000-2007.) Higher Covidien shares at GPOs where they have sole-source contracts indicate nothing more than a legitimate and procompetitive benefit from being chosen by a GPO as an endorsed vendor through a competitive process.

B. Professor Elhauge's Regression Analyses

30. Professor Elhauge also tries to gauge the extent of foreclosure using regression analysis. He claims that his regression analyses which relate rivals' performance to the presence (or absence) of the challenged contracts are free of the selection problem that, as Professor Elhauge acknowledges, may have affected some of his gap analyses.[25] He claims that this analysis is able to track the performance of rivals over time as individual hospitals become subject to -- or freed from -- the challenged Covidien contracts. He concludes that rivals do "statistically" better when hospitals are free of Covidien's contracts than when they are restricted by such contracts.[26] I understand that Professor McFadden explains the flaws in Professor Elhauge's regression analyses in his declaration. Here I only note that Professor Elhauge is wrong in his claim that these analyses are free of selection bias.

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[25] *See* par. 195 of his Initial Report. In the regression model utilized by Professor Elhauge, the dependent variable is Covidien's rivals' share of a hospital's purchases of sharps containers each month. The independent variable is a dummy indicator variable that equals 1 if that hospital had purchased through one or more of the challenged contracts in that month; otherwise it equals zero.

[26] *See, e.g.,* Table 9 in Elhauge Initial Report.

31. All that Professor Elhauge's regressions are capable of doing is to establish that when a hospital that initially did not take Covidien share contracts or buy pursuant to a sole-source GPO contract decides at a later point to take such a contract, then its purchases from Covidien increase (and *vice versa*). The regression as it is specified by Professor Elhauge cannot determine the causes of these changes. Professor Elhauge would attribute the fact that the hospital took the challenged contract and the resulting increase in sales to the alleged "coercive" nature of the contract, but this is entirely unsubstantiated by the data he uses; the hospital may have taken the contract because it concluded that the price-quality combination offered by Covidien under its share or sole-source contracts best meets the needs of that hospital at that point in time. For instance, if a hospital that uses BD containers determines at a later point that for whatever reasons it is not satisfied with BD and determines that Covidien's share contracts offers the best products/terms, then it will switch and purchase under Covdien's share contract.[27] Such a hospital is not coerced into purchasing from Covidien. As with his gap analysis, Professor Elhauge's regression analysis is not capable of identifying hospitals that are free to avail themselves of challenged contracts from those that are allegedly "coerced" to do so (assuming even that such exist).[28] Indeed, given that the reasons for the decision from whom to buy or to whom to switch cannot generally be unambiguously identified, the regression analysis cannot answer the ultimate question regarding the foreclosing effects of the challenged contract provisions.

C. Professor Elhauge's "Before-and-After" Comparison at Novation

32. As a final approach to gauging the allegedly exclusionary impact of the challenged contracts, Professor Elhauge examines the success of BD and Stericycle at Novation after

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[27] The record contains examples of such hospitals. [redacted] hospital is one example. Prior to October 2002, this hospital switched from Covidien to BD, only to switch back to Covidien for "performance and safety reasons." TYN0061224-8 at 5. In most months since Q1 2001, this hospital has been buying Covidien products under a share contract. Professor Elhauge has classified this hospital as Affected in most months since October 2001.

[28] According to Professor Elhauge, hospitals are allegedly "coerced" into taking exclusionary contracts by Covidien because not doing so would entail price "penalties" that hospital members cannot afford to pay. According to him, the hospital would be better off if it could refuse Covidien's contract offer. *See, e.g.*, Elhauge Initial Report at par. 60.

they were placed on contract at this GPO. Covidien had a sole-source contract at Novation until August 2005 at which time BD became a contracted vendor of disposable sharps containers and Stericycle of reusable containers. Professor Elhauge contends that between August 2005 and October 2006, the last month for which he has relevant sales data, BD and Stericycle sharply increased their share of Novation members' sharps container purchases.[29] I understand that Professor McFadden has analyzed statistically whether there has been an acceleration in the growth of sales following the contract change and has found no support for such an effect. However, even if there were an acceleration of BD's and Stericycle's sales growth at Novation, Professor Elhauge's analysis is not fully capable of disentangling the effects of Covidien's legitimate competitive actions on rivals' performance at Novation and any putative anti-competitive foreclosing impact of the sole-source contract at Novation. In order to understand this conclusion, it is necessary to briefly review the history of contracting at Novation.

33. [redacted] (Neither Stericycle nor Daniels submitted bids, the latter because it had not yet entered the U.S. market. The former was not yet a national player in the sharps container business and had mostly a regional presence confined to the Northeast.) [redacted]

34. Daniels entered the U.S. market in 2003 and both Daniels and Stericycle expanded their geographical scope in 2004 to the point where national GPOs such as Novation (whose nationwide membership makes contracting with national vendors preferable) evaluated

[29] *See, e.g.*, Elhauge Initial Report at par. 189.

[30] *See, e.g.*, Ordover Liability Report at par. 83.

Daniels and Stericycle for GPO contracts.[31] [redacted][33]

35. Sales gained by Covidien as a result of its sole-source contract in 2000 at Novation were nothing more than a legitimate benefit from having been chosen by Novation as an endorsed vendor through a competitive process. As with Professor Elhauge's gap analysis of sole-source contracts, his before-and-after analysis of rivals' shares at Novation is misguided in that it is inherently incapable of identifying any anti-competitive foreclosure stemming from Covidien's sole-source contract at Novation.

36. The probative value of his analysis is further reduced by the fact that – as evidenced in Professor Elhauge's own empirical analysis -- rivals' share at Novation began accelerating about a year before Covidien's sole-source contract ended.[34] This suggests that placement on the Novation contract was not the only reason for why rivals' share at Novation grew. Improvements in rivals' product breadth and quality, in the case of BD, and expansion of their geographic footprint, in the case of Stericycle and Daniels, probably contributed to their increasing sales. Nothing in Professor Elhauge's analysis enables him separately to identify the effect of the contract change at Novation from these confounding factors.

D. Concluding Comment

37. In this short report I have reviewed Professor Elhauge's attempts to prove and measure the allegedly anticompetitive effects of the various contracts that have been challenged in this

[31] [redacted]

[32] *See, e.g.,* NP/Nov 001732-7.

[33] *See, e.g.,* Ordover Liability Report at par. 84.

[34] *See* Exhibit 17 in Elhauge Reply Report.

proceeding. My overarching conclusion is that Professor Elhauge's approaches are simply not capable of identifying the alleged adverse competitive impacts of these challenged contracts.

38. I do not think this is surprising. As I have shown, rivals (initially BD and subsequently Stericycle and also Daniels) have been effective market competitors. The share contracts did not foreclose rivals because there was no lock-in created by the share contracts. Whole-house conversions were and continue to be feasible. Sole-source contracts were awarded via competitive bidding in response to requests for proposals that were developed by the GPOs, each of which enjoyed substantial market presence and buying power. Moreover, GPO members could and did buy sharps containers off contract.

Table 1 – Summary of Professor Elhauge's Affected and Unaffected Categories

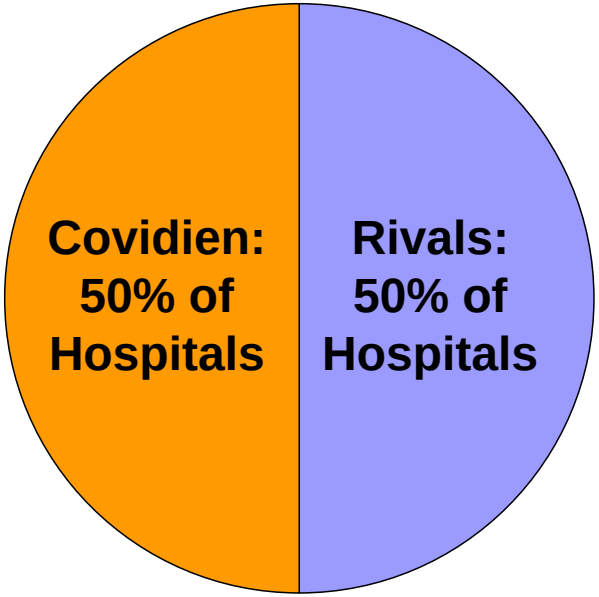
	Exhibit 9	Exhibit 10	Exhibit 11	Exhibit 12
Affected	Customers that take Covidien's share contracts (i.e. commit to purchasing some minimum percent threshold from Covidien in exchange for discounts)	Customers purchasing under sole-source contracts	Customers that either take share contracts *or* purchase under sole-source contracts	Customers that take share contracts *and* purchase under sole-source contracts
Unaffected	All other customers (including customers that purchase exclusively from rivals of Covidien even though they are members of GPOs that offer share contracts)	All other customers (including customers that purchase exclusively from rivals of Covidien even though they are members of sole-source GPOs)	Customer that take neither type of contract	Customer that take neither type of contract

Source: Elhauge Initial Report at par. 179.

Exhibit 1 - Selection Bias
Prof. Elhauge's Approach Necessarily Finds Substantial Effects of Contracts -- Regardless of their Actual Impact

Hypothetical Example: Period 1

- Assume no share contracts
- 50 out of 100 (equal-sized) hospitals choose Covidien for 100% of their purchases (because of clinical/quality/price reasons)
- Other 50 hospitals choose rivals for 100% of their purchases

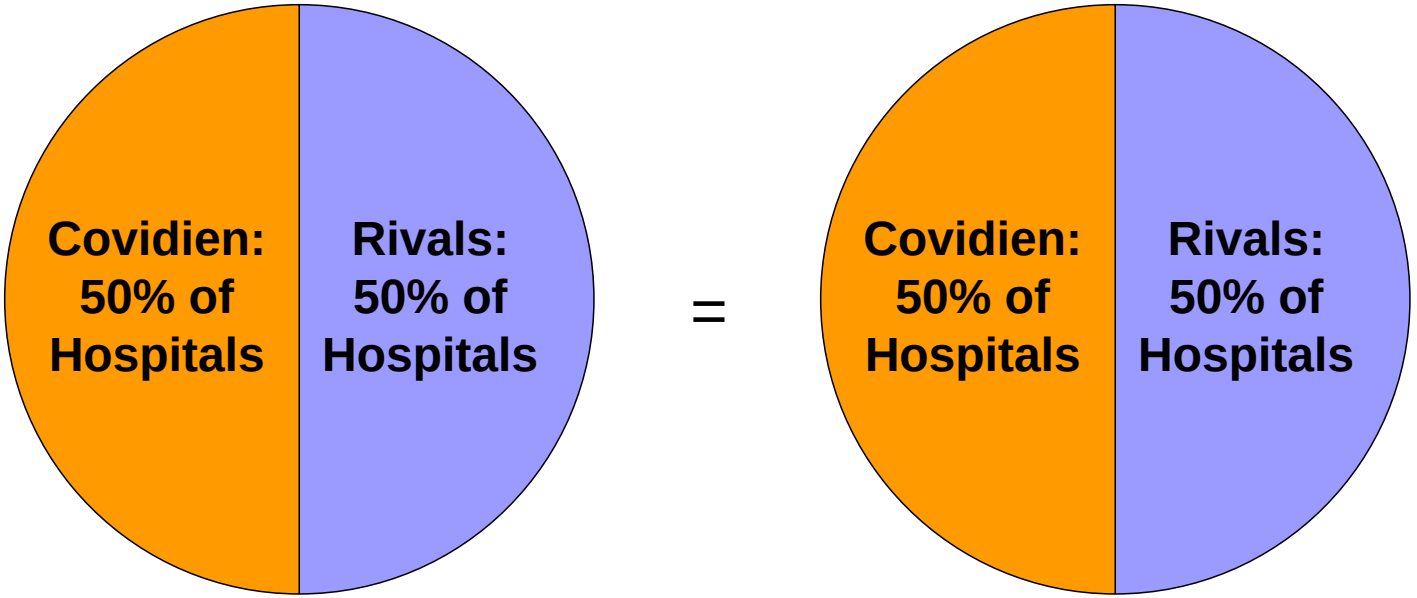


Period 1 – No Share Contracts Available

Exhibit 2 - Selection Bias
Prof. Elhauge's Approach Necessarily Finds Substantial Effects of Contracts -- Regardless of their Actual Impact

Hypothetical Example: Period 2

- Covidien Offers Share Contracts to Hospitals
- Assume No Effect from Contracts ➔ 50 hospitals continue to purchase 100% from Covidien and other 50 purchase 100% from rivals



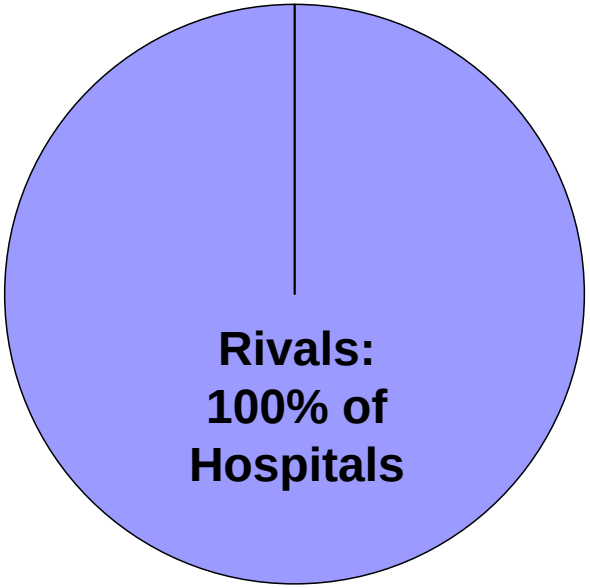
Period 1 – No Share Contracts Available

Period 2 – Share Contracts Available

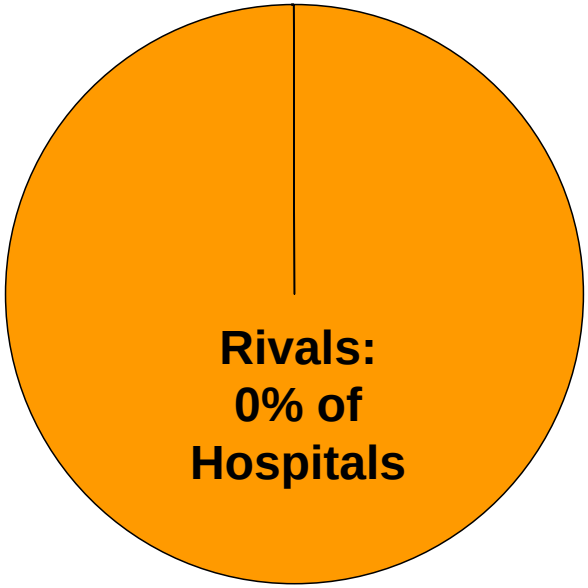
Exhibit 3 - Selection Bias
Prof. Elhauge's Approach Necessarily Finds Substantial Effects of Contracts -- Regardless of their Actual Impact

Hypothetical Example: Effect of Selection Bias

- Actual decrease in Covidien's rivals' share due to share contracts: 0% points
- Decrease implied by Professor Elhauge's methodology: 100% points
  - Rivals' share at hospitals that take share contracts ("Affected" group): 0%
  - Rivals' share at hospitals that do not ("Unaffected" group): 100%



Unaffected Group: Hospitals that Do Not Take Share Contracts



Affected Group: Hospitals that Take Share Contracts