

ANTITRUST DAMAGES, FINES, AND DETERRENCE: COLLUSION IN THE NURSE LABOR MARKET



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I. INTRODUCTION

Those firms that violate Section 1 of the Sherman Act face fines of up to \$100 million² and are vulnerable to treble damages in suits by private parties that have suffered antitrust injury.³ In this paper, we examine the role that fines and antitrust damages play in deterring collusion. To make our discussion a bit more concrete, we do this in the context of collusion in the nurse labor market.

Initially, we provide some background regarding collusion in the nurse labor market. We then identify the social cost of collusion and the corresponding antitrust damages. Next, we recognize that the socially optimal number of antitrust violations is not zero due to the cost of enforcement. We then examine the role of fines and antitrust damages in deterring collusion. This allows us to identify the policy variables that may be adjusted to enhance deterrence. We close the paper with some concluding remarks regarding our ability to evaluate the effectiveness of the deterrence.

II. ALLEGATIONS OF COLLUSION IN THE NURSE LABOR MARKET

There have been several class action antitrust suits filed by nurses alleging collusion in local nurse labor markets. The most recent cases include suits filed in Albany (N.Y.),⁴ Chicago,⁵ Detroit,⁶ Memphis,⁷ and San Antonio.⁸

In most instances, the defendants are alleged to have wielded collusive monopsony power in the local labor markets for hospital nurses by: (1) Agreeing to exchange and exchanging on a regular basis detailed, non-public information regarding the current and future compensation paid to registered nurses (“RNs”) in the area, (i.e. RN wages, signing bonuses, merit raises, certification bonuses, hours, and the like); (2) agreeing not to compete with one another in setting RN compensation; (3) paying RNs at the same or nearly the same rate; and (4) jointly recruiting RNs at job fairs to avoid competition. In addition, there were allegations of frequent telephone exchanges of competitively sensitive information by hospital HR professionals regarding RN compensation. The plaintiffs allege that these information exchanges are used to avoid competition in the nurse labor market and thereby depress RN wages.

² Section 1 of the Sherman Act (15 U.S.C. §1).

³ Section 4 of the Clayton Act (15 U.S.C. §15) holds that a victim of an antitrust violation “Shall recover three fold the damages by him [or her] sustained.”

⁴ *Fleischman v. Albany Medical Center*, 06-CV-0765 (N.D.N.Y. July 22, 2010).

⁵ *Reed v. Advocate Health Care*, N.D. Ill., No. 06C3337, 9/28/09.

⁶ *Cason-Merenda v. Detroit Medical Center*, Case No. 2:06-cv-15601.

⁷ *Clarke v. Baptist Memorial Healthcare Corp.*, 264 F.R.D. 375, 377 (W.D.Tenn.2009).

⁸ *Maderazo v. VHA San Antonio Partners, L.P.*, Case No. 5:06-cv-00535 (W.D. Tex.).

In the nurse labor market, the hospitals are buyers of labor services rather than sellers. At least since *Mandeville Island Farms*, collusion among buyers has been condemned under Section 1 of the Sherman Act.⁹ Consequently, if the conduct that has been alleged in these cases had occurred, the hospitals would have been guilty of a Section 1 Sherman Act violation.

III. ECONOMIC CONSEQUENCES OF COLLUSION AMONG EMPLOYERS

In this section, we examine the economic consequences of collusion in the nurse labor market. We begin with the competitive benchmark and then introduce collusion. We then examine the effect of collusion on wages and employment. In addition, we discuss the consequences of collusion for social welfare.

A. Competitive Benchmark

Under competitive conditions in the market for RNs, supply and demand determine the number of nurses employed and their wage. Figure 1 depicts the competitive solution where demand given by the marginal revenue product (“MRP”) and supply (“S”) are equal. At that point, the competitive wage is w_1 and the number of nurses employed is N_1 . In this competitive equilibrium, every nurse who is willing to work at the competitive wage will be employed. Similarly, at the competitive solution, every hospital willing to pay the competitive wage is able to employ nurses.

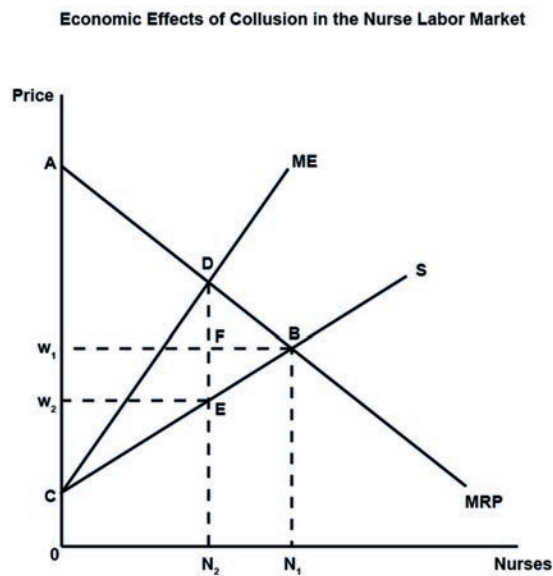


Figure 1

B. Collusive Monopsony

Now suppose that the hospitals agree among themselves to act together as though they were a single employer (i.e. a monopsonist).¹⁰ By acting collusively, the hospitals can depress the wage, but must curtail employment to do so. In order to maximize their collective profits, the hospitals must restrict employment to the point where the marginal value of employing an additional nurse is just equal to the marginal cost of that additional nurse.

The marginal value is given by the height of the demand curve in Figure 1. The marginal cost is a little more complicated. The total wage bill for nurses is the product of the wage paid and the number of nurses employed: $w \cdot N$. In order to hire an additional nurse, the wage must rise to induce the additional supply. Absent wage discrimination, however, the hospital must pay that increased wage to all nurses and, therefore, the marginal impact on the wage bill equals the wage paid to the added nurse plus the change in the wage paid to all the nurses previously

⁹ *Mandeville Island Farms v. American Crystal Sugar Co.*, 334 U.S. 219 (1948).

¹⁰ For an extensive treatment of monopsony, see Roger D. Blair & Jeffrey L. Harrison, *Monopsony in Law and Economics*, (2010).

employed. This sum is referred to as the marginal expenditure, which is shown as ME in Figure 1.¹¹ Consequently, the colluding hospitals will employ N_2 nurses and pay the wage on the supply curve at N_2 , which is w_2 . Over the years, there has been a persistent shortage of nurses. The exercise of monopsony may well be a contributing factor. As one can see in Figure 1, the socially optimal level is N_1 , but only N_2 nurses will be employed. The difference between N_1 and N_2 is a measure of the shortage.

C. Welfare Implications of Collusive Monopsony

The effect of collusive monopsony on economic welfare can be illustrated in Figure 1. For the hospitals, employer surplus is the difference between their willingness to pay as reflected in the demand and the wage that the market requires. At the competitive solution, this is given by area ABw_1 . For the nurses, supplier surplus is the difference between the minimum wage at which the nurses will work as reflected in the height of supply curve and the wage that the market dictates. At the competitive solution, the supplier surplus is given by area w_1BC in Figure 1.

Competition in this market leads to the maximum sum of employer and supplier surplus, which is area ABC in Figure 1. No other wage and employment level will generate a larger total surplus. The sum of employer surplus and supplier surplus is a measure of social welfare. The economic foundation for an antitrust policy that promotes and protects competition is the maximization of social welfare that results from competition.

Collusive monopsony has an adverse effect on the welfare of the nurses and on social welfare. Profit maximization by the colluding hospitals results in a reduction in supplier surplus equal to w_1BEw_2 . Part of this reduction, area w_1FEw_2 , is converted into employer surplus (or profit) and part of it, area FBE , is simply lost. The net effect on social welfare is a loss equal to the triangular area DBE . As one can see in Figure 1, the social cost of hiring the nurses between N_2 and N_1 , as measured by the height of the supply curve, is below the value that these nurses provide, as measured by the height of the demand curve. From a social perspective, too few nurses are being employed. The collusive monopsony solution is allocatively inefficient due to under-employment. This allocative inefficiency is what causes the reduction in social welfare.

D. Impact on Hospital Costs

Since there is widespread concern over burgeoning health care costs, one might suppose that the reduced wages will reduce the hospitals' costs and thereby benefit patients. This, however, is not the case. It is consistent with our intuition that the reduced wages will reduce the average cost of producing acute care hospital services. This average cost reduction improves hospital profits and thereby provides an incentive for collusion. But the effect of monopsony is to raise marginal cost. Since marginal cost is what drives price and output decisions, the increase in marginal cost leads to a reduction in the hospitals' output and higher hospital charges.¹² Thus, collusive monopsony, in addition to harming the nurses, does not benefit patients and, therefore, has no redeeming virtues.

11 The total expenditure on nurses is $w(N) \cdot N$. The marginal expenditure (ME) is $\frac{dw(N)N}{dN} = w(N) + N \frac{dw(N)}{dN}$. Consequently, ME is equal to the wage paid to the added nurse ($w(N)$) plus the increased wage that must be paid to all of the nurses ($N \frac{dw(N)}{dN}$).

12 For further analytical details, see Roger D. Blair & Christine Piette Durrance, *The Economics of Monopsony*, In W. Dale Collins (ed.), *Issues in Competition Law and Policy* (2014).

IV. ANTITRUST DAMAGES

In most circumstances, an antitrust violation has many victims. Some – but not all – of them are entitled to recover treble damages. Section 4 of the Clayton Act, appears to confer a private right of action upon literally anyone who is an antitrust victim.¹³ But this is not the case since the Supreme Court has placed limits on those who have standing to pursue damages. First, a would-be plaintiff must have suffered antitrust injury.¹⁴ This means that the injury must flow from the anticompetitive consequences of the antitrust violation. In the case of collusion in the nurse labor market the anticompetitive consequences are in the depression of wages and/or salaries below the competitive level and in the reduction in the number of nurses employed. Since these consequences flow from the unlawful agreement, the nurses would appear to have suffered antitrust injury.

Second, a plaintiff must have been injured directly by the unlawful conduct. This requirement is meant to avoid duplicative damages or the need for complex apportioning. In the case of collusion in the nurse labor market, the nurses are the direct victims of the collusion.

Third, the damage estimate may not be speculative. To avoid charges of speculation, the damages claimed must be based on a just and reasonable inference rather than mere guesswork.¹⁵

A. The Measure of Damages

Assuming that the collusion among the hospitals is impermissible, the nurses will have standing to sue for damages. The measure of damages is the underpayment suffered by the victims of the conspiracy (i.e. the nurses). Consequently, the appropriate measure of damages (Δ) is the difference between the competitive wage, the wage “but for” the collusion (w_{bf}), and the actual wage (w_a), times the number of nurses actually employed (N_a):

$$\Delta = (w_{bf} - w_a)N_a$$

In Figure 1, we can see that the damage will be equal to the difference between w_1 , which is the but for wage and w_2 , which is the actual (collusive) wage, times N_2 , which is the actual number of nurses employed.

There are nurses who would have been employed but for the collusion — in fact, there are $N_1 - N_2$ of them. They have suffered antitrust injury because the competitive wage (w_1) exceeds their reservation wages. They are essentially priced out of the market by the collusion among the hospitals. The major problem is proving that one would be willing to work at the competitive wage. In addition, the damage for these nurses would be the difference between the competitive wage and the reservation wage, which is the height of the supply curve. This gap narrows as one slides along the supply curve from point e to point b in Figure 1. Proving (or disproving) each nurse’s reservation wage along that segment of the supply is ordinarily not feasible.

Proving the amount of damages for those nurses who are actually employed can be an econometric challenge as an estimate of antitrust damages requires a reliable estimate of the “but for” wage. In order to determine the “but for” wage, we must reliably estimate the supply of and demand for nurses. These are typically difficult, but not impossible, to estimate. In the absence of reliable estimates, however, we are left with speculation and guesswork. These do not provide the evidentiary foundation for an admissible estimate of damages.

Plaintiffs can estimate the wage differential $w_{bf} - w_a$ directly or may estimate the non-collusive wage w_{bf} and rely on actual wages in the record, w_a , to calculate the wage differential. Both of these approaches will provide the best estimate of the underpayment due to collusion among hospitals in the nurse labor market. It is not the result of mere speculation or guess work. Instead, it results from the sound application of econometrics to the available data.

¹³ Section 4 of the Clayton Act, 15 U.S.C. §15, provides that “any person who shall be injured in his business or property by anything forbidden in the antitrust laws may sue therefor...and shall recover threefold the damages by him sustained...”

¹⁴ See *Brunswick Company v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477 (1977), which defined the concept of antitrust injury. See Roger D. Blair & Jeffrey L. Harrison, *Rethinking Antitrust Injury*, 42 *Vanderbilt Law Review* 1539 (1989) for application to monopsony.

¹⁵ For additional details, see Roger D. Blair & Wenche Wang, *Buyer Cartels and Private Enforcement of Antitrust Policy*, 38 *Managerial and Decision Economics* 1185 (2017).

Though imprecision may remain with relevant data and rigorous econometric examination, nonetheless, the estimated wage differential is still the most reliable damage estimate that the plaintiff can produce. The estimated damages should be accepted by the court given that the standard of proof is the preponderance of the evidence.

V. OPTIMAL DETERRENCE

In section II, we pointed out that there were five recent cases of alleged collusion in the nurse labor market. Assuming that collusion was, in fact, present, the economic question is whether this number is too large or too small. In other words, is collusion in the nurse labor market over-deterred or under-deterred in terms of social welfare? Or, do we have it just right? In this section, we address the issue of socially optimal deterrence.

Since resources must be expended in uncovering collusive activity, trying the cartel members, and imposing sanctions, the optimal number of Section 1 Sherman Act violations is not apt to be zero.

The probability of the cartel's avoiding detection (p) will be a function of the resources (R) invested in this enforcement activity. The social harm (H) caused by collusion is assumed to be a constant for purposes of illustration.

The expected harm due to collusion is the probability of undetected cartel behavior times the harm of collusion: $p(R) \cdot H$. We assume that this expected harm declines with increased enforcement efforts, i.e. $\frac{dp(R)H}{dR} < 0$. We also assume that the expected cost declines at an increasing rate, i.e. $\frac{d^2p(R)H}{dR^2} > 0$.

The cost of enforcement is an increasing function of the resources devoted to enforcement, i.e. μR , where μ is the price of the enforcement resources.

The total cost of collusion is equal to the sum of the expected harm and the cost of enforcement.

$$C = p(R)H + \mu R$$

This cost is minimized by devoting resources to enforcement such that

$$\frac{dC}{dR} = \frac{dp(R)H}{dR} + \mu = 0$$

In other words, R should be increased until the marginal reduction in the expected harm is just equal to the marginal cost of the resources necessary to accomplish this reduction.

These results are captured in Figure 2. As is plain to see, the socially optimal investment of resources in enforcing Section 1 (R^*) does not result in the complete elimination of collusion since $p(R)H$ is not zero at R^* . Not surprisingly, the complete elimination of collusion is too costly.

In most — if not all — cases, price fixing among competing buyers or sellers reduces social welfare and may lead to an undesirable redistribution of wealth. All else being equal, therefore, a decrease in such conduct will be welcome. But nothing in life is free. Consequently, it will not be socially optimal to reduce antitrust violations to zero. In our nurse labor market example, we pointed to allegations of collusion over a ten-year time frame in five cities. Is this too many, too few, or just the right amount? It is difficult to say.

Optimal Resource Allocation to Deterrence

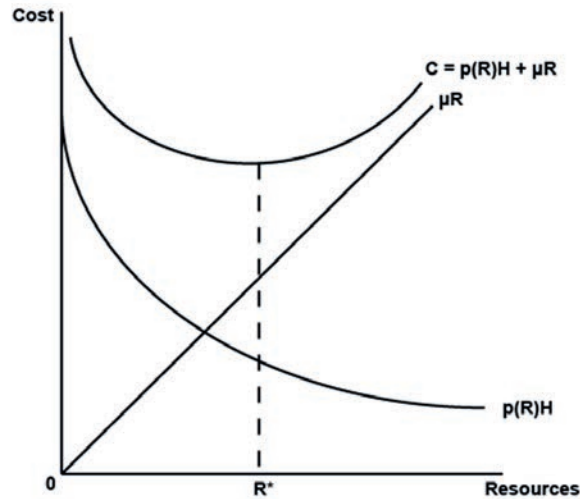


Figure 2

VI. THE ROLE OF FINES AND DAMAGES

Hospitals — whether for profit or not-for-profit — that collude in the nurse labor market are vulnerable to fines of up to \$100 million and treble damage actions. The economic role that these sanctions play is deterrence.¹⁶ Fines and antitrust damages are intended to make collusion unprofitable. An examination of deterrence will reveal the policy variables that may be applied to deter unlawful conduct.

Suppose that a hospital will earn a profit of π_1 , if it does not engage in collusion. Colluding with other area hospitals in the nurse labor market will result in higher profit equal to π_2 provided that the conspiracy is not detected. If the conspiracy is detected and successfully challenged in court, sanctions will be imposed and the net profit will fall to π_3 where

$$\pi_3 = \pi_2 - F - 3\Delta$$

Where F denotes the fine and Δ denotes the damages.

The deterrent function is

$$D = \pi_1 - E[\pi]$$

Where the expected value of π is $(1 - p)\pi_2 + p\pi_3$

Where $(1 - p)$ is the probability of avoiding detection and p is the probability of conviction.¹⁷

The deterrent function is then $D = \pi_1 - [(1 - p)\pi_2 + p(\pi_2 - F - 3\Delta)]$

If the deterrent function is positive, the expected profit with collusion is less than the profit without collusion. Consequently, collusion will be deterred. If D is negative, the profit without collusion is lower than the expected profit with collusion and the unlawful conduct will be profitable and, therefore, will occur.

¹⁶ As an economic matter, punishment for its own sake or retribution makes no sense. The idea of sanctions is to deter undesirable conduct.

¹⁷ This formulation assumes that hospitals are risk neutral, i.e. they are influenced only by expected values. The variance in profit plays no role in the decision to engage in collusion.

There are a few public policy variables that may need adjustment if, on some reckoning we conclude that the number of violations is too large.¹⁸ First, more resources could be devoted to deterring and convicting those hospitals engaged in collusion. This effort would decrease $(1 - p)$ and increase p , which decreases the expected profit.

A second policy change could involve increasing the fine (" F "), which would require amending The Sherman Act. This, however, may not be enough. The current maximum fine is \$100 million. Increasing that maximum only addresses the deterrence problem if judges are willing to impose substantial fines. If they are reluctant to impose hefty fines, then amending The Sherman Act may do no good.

Section 4 of the Clayton Act already provides for treble damages. Increasing the multiplier would decrease the expected profit, but that would require amending the Clayton Act.

VII. CONCLUDING REMARKS

Violations of Section 1 and/or Section 2 of the Sherman Act cause both public and private harm. Public sanctions for these violations involve fines of up to \$100 million. Private damage awards under Section 4 of the Clayton Act equals three times the damages suffered by the victims of the antitrust violations.¹⁹ This combination of public and private enforcement may deter anticompetitive conduct, but we do not know to what extent. To determine the effectiveness of the deterrence, we have to know the number of contemplated but uncommitted violations as well as the number of undeterred violations, and the number of deterred violations.²⁰ Thus, there is ample room for future research.

¹⁸ Similar, but opposite, remarks can be made if we believe that too few violations have occurred.

¹⁹ Individual sanctions may involve fines of up to \$1.0 million and/or prison sentences of up to 10 years.

²⁰ Nobel Laureate George Stigler made this point long ago, see George J. Stigler, *The Economic Effects of the Antitrust Laws*, 9 *The Journal of Law and Economics* 225 (1966).



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