

# How do we measure shortages of dental hygienists and dental assistants?

Evidence from California: 1997-2005

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In 1999, the American Dental Association's (ADA) Workforce Needs Assessment Survey found that about two-thirds of private dentists nationwide believed there were an inadequate number of registered dental hygienists (RDHs) and dental assistants (DAs) in their area.<sup>1-3</sup> Surveyed dentists believed that the RDH and DA shortage was due to a lack of training programs and graduates from these programs.

An important question is whether the perception of surveyed dentists regarding the existence of a shortage of RDHs and DAs was accurate. In this article, we present a method by which we can use publicly available data to determine the existence of labor shortages for these two groups.

To illustrate this method, we focused on the labor markets for RDHs and DAs in California from 1997 to 2005 and examined whether either profession experienced a labor shortage during this period. We used an economic framework to integrate and interpret statewide economic indicators to understand and compare labor market outcomes for RDHs and DAs. We suggest that

## ABSTRACT

**Background.** The authors examined the labor market for registered dental hygienists (RDHs) and dental assistants (DAs) in California from 1997 to 2005 to determine whether there was a shortage in either market.

**Methods.** This analysis used economic indicators interpreted within an economic framework to investigate trends in labor force numbers and market-determined wages for RDHs and DAs. Rising inflation-adjusted mean wages indicated a labor shortage, while declining inflation-adjusted mean wages indicated a labor surplus.

**Results.** From 1999 to 2002, the wages for RDHs increased 48 percent and then stabilized, indicating a shortage had occurred, after which the market achieved equilibrium. Wages for DAs increased 13.9 percent from 1997 to 2001, but then declined from 2001 to 2005, indicating a shortage that then became a surplus. The market for DAs may not have stabilized.

**Conclusions.** Wages increased for RDHs and DAs, suggesting that labor shortages occurred in both markets. The large supply response in the market for DAs resulted in wages declining after their initial rise.

**Practice Implications.** Tracking the local labor markets for RDHs and DAs will enable dental professionals to respond more efficiently to market signals.

**Key Words.** Dental hygienists; dental assistants; labor shortage.

*JADA 2007;138(1):94-100.*

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fundamental differences in the institutional structure of the supply side of each market likely are responsible for the differing outcomes observed for each profession. Understanding how the labor markets for both of these groups function is important for practicing dentists, RDHs, DAs and policymakers so that each group can respond efficiently to market changes.

## METHODS

**Key terms.** *Economic demand.* Three key terms are essential to understanding the economic approach to the labor shortage question. The first term is “economic demand,” which is important to distinguish from the concept of “need.” For example, for RDHs, the “need” for RDHs would refer to the amount of RDH service required to attain a given goal (for example, cleaning the teeth of all Californians during the next year) without regard to how or how much the RDHs would be paid. In contrast, “economic demand” refers to the amount of RDH service that dental practices are able and willing to pay for at any given wage rate. The lower the wage rate for RDHs, the more RDH services that dental practices will demand.

The demand for RDHs is derived from the consumer demand for dental services. In other words, the more dental services that consumers demand, the more RDH services that dental practices will demand. Several factors may shift the demand curve, including changes in the preferences of consumers for dental services, changes in the age structure of the population and changes in the ability of consumers to pay for dental services.

For example, the demand for dental services might increase if more consumers decided they prefer to have attractive teeth; if the demographic composition of consumers in a given area shifted toward older people who need more dental care; if the average level of income in an area increased, which allowed more consumers to afford dental care; and/or if more consumers have dental insurance. In these cases, dental practices in turn would tend to demand more RDHs to help provide the increased amount of dental care that con-

sumers demand.

*Economic supply.* The second term is “economic supply.” For RDHs, this refers to the amount of service that RDHs are willing to provide to dental practices at any given wage rate. The higher the wage rate for RDHs, the more services that RDHs will supply. Factors that will shift the supply curve include changes in training opportunities, as well as changes in alternative opportunities. For example, factors that potentially would increase the supply of RDHs include an increase in the number of RDH training programs or seats within existing training programs. Decreasing mean wages in competing health professions also would increase the supply of people entering the RDH labor market, as this would make the relative mean wages available in the RDH market more attractive.

*Labor shortage.* The final term is “labor shortage.” The U.S. Department of Labor’s definition states “shortages occur in a market economy when the demand for workers for a particular occupation is greater than the supply of workers who are qualified, available, and willing to do that job.”<sup>4</sup> A more complete definition would add that workers must be willing to do that job at a given market wage. In the labor market for RDHs, a shortage occurs when the demand for RDHs is greater than the supply of RDHs who are available and willing to work at the prevailing market wage. Rising wages indicate a labor shortage.

The supply and demand for workers can change over time and affect whether there is a labor shortage. For example, if the supply of RDHs remained relatively constant, but demand for them by dental practices increased, there would not be enough RDHs available for all dental practices that wanted to hire a hygienist to do so at the current market wage. The number of RDHs that dental practices wanted to hire then would be larger than the number of available RDHs, resulting in increases in the vacancy rate and average length of time needed to hire an RDH. In response, dental practices would begin to increase their wage offers with the hope that higher wages would make their hygienist positions more desirable.

As the market wage for RDHs rises, however, fewer and fewer dental practices would be willing to pay the increasing wage required to hire a hygienist. The market wage would continue to rise until the number of RDHs that dental practices want to hire is equal to the number of RDHs

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**ABBREVIATION KEY.** **BRFSS:** Behavioral Risk Factor Surveillance System. **CHIS:** California Health Interview Survey. **COMDA:** Committee on Dental Auxiliaries. **CPI:** Consumer price index. **DAs:** Dental assistants. **RDHs:** Registered dental hygienists.

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