



Economic Impact Analysis Virginia Department of Planning and Budget

18 VAC 60-20 – Regulations Governing the Practice of Dentistry and Dental Hygiene Department of Health Professions Jan 22, 2002

The Department of Planning and Budget (DPB) has analyzed the economic impact of this proposed regulation in accordance with Section 2.2-4007.G of the Administrative Process Act and Executive Order Number 21 (02). Section 2.2-4007.G requires that such economic impact analyses include, but need not be limited to, the projected number of businesses or other entities to whom the regulation would apply, the identity of any localities and types of businesses or other entities particularly affected, the projected number of persons and employment positions to be affected, the projected costs to affected businesses or entities to implement or comply with the regulation, and the impact on the use and value of private property. The analysis presented below represents DPB's best estimate of these economic impacts.

Summary of the Proposed Regulation

The Board of Dentistry (board) proposes to: 1) allow dental hygienists to perform certain services without a dentist present provided that the dental hygienist is under "general supervision," and 2) maintain the current limit of two dental hygienists per supervising dentist, except at free clinics, in public health programs and in voluntary work where an unlimited number of dental hygienists may work under the supervision of a single dentist.

Estimated Economic Impact

Summary

The current version of this regulation greatly restricts the way in which dental services may be offered in Virginia. Under the current regulations, dental hygienists "shall engage in their ... duties only ... under the direction and control of the employing dentist ... The dentist shall be present and evaluate the patient during the time the patient is in the facility." In addition, a dentist may not supervise the work of more than two hygienists at the same time.

These two requirements, by restricting the way that dental medicine may be practiced, tend to increase the cost and decrease the convenience of these essential services. Aside from the obvious loss to the public from financial and convenience costs, negative health consequences can be expected from such regulations. First, the higher the dollar cost of obtaining the services, the more people will decide to postpone or forgo dental services. This will lead to some reduction in the level of dental care purchased by the public. Second, convenience is a significant cost of obtaining dental services. The structure of these regulations greatly limits the flexibility that dentists and hygienists have in offering their services to the public. This will also tend to reduce the quantity demanded of dental services.

One may be able justify these restrictive regulations if not having them would lead to a greater harm to the public than the harm that is caused by the regulations themselves. In the case of dentistry regulations, one could make an argument for the rules if they protect the public from health hazards that would otherwise occur. However, these two regulatory restrictions are not justified by reason of protecting public health and safety. The board has not provided any evidence for a health and safety justification for these rules. Indeed, the Department of Health Professions indicated that these rules are not intended to protect public health, but rather are included in the regulations for “economic reasons” unrelated to health and safety. The reason given is that limiting the number of hygienists that one dentist can hire will help alleviate the hygienist shortage, which is particularly bad in southern Virginia. As we discuss later, it is more likely than not that, assuming a shortage exists, this limitation actually tends to make the shortage worse.

Consequently, we conclude that the parts of the existing regulation that restrict the structure of dental practice and that regulate the relationship between dentists and hygienists are not rationally designed to protect the public health and safety. In fact, they constitute a substantial detriment to Virginia’s economy by maintaining an artificially high cost for dental services. This in turn results in a reduction in dental services actually demanded and, thus, these provisions are responsible for a cost to public health rather than a benefit.

Following direction from the General Assembly, the board is proposing to relax marginally the restriction that dental hygienists only provide their services under the direct supervision of a dentist. While this change will tend to reduce some of the negative

consequences of these restrictive practice rules, it will only do so by a small amount relative to the total benefit that is available. Overall, the new proposed regulation continues a set of practice restrictions that both increase costs and reduce the quantity consumed of dental care without providing any commensurate public health benefits.

General supervision

Pursuant to Chapter 170 of the 2002 Acts of Assembly, the board proposes to allow some specified dental hygienist duties to be performed without the employing dentist present. Instead these activities would be conducted under “general supervision.” General supervision is defined as when “the dentist has evaluated the patient and issued a written order for the specific, authorized services to be provided by a dental hygienist when the dentist is not present in the facility while the services are being provided.” The only services that may be provided under general supervision are the most routine periodic cleaning and examination of teeth and other services well within the competence of dental hygienists. Hygienists have successfully provided these services for many years.

Enabling dental hygienists to provide services without a dentist present will allow the expansion of hygienist services at nursing homes, free clinics, and other locations. It will also enable private dental practices to offer more hours of hygienist services per week. As it stands now, a dentist can’t step out of the office for a cup of coffee, even if the hygienists working for her are performing the most routine teeth cleaning services.

The board has chosen to permit under general supervision only a limited set of activities; those it believes can be performed safely without a dentist present. In addition, the dentist must examine the patient at least every other visit with the hygienist. Hence, there is unlikely to be any significant increase in health and safety risks due to the introduction of general supervision. We conclude then that the introduction of general supervision provisions to these regulations will almost certainly create a net economic benefit.

Unfortunately, the benefit of this change is greatly attenuated by the continuing requirement that, under most circumstances, a dentist may supervise no more than two hygienists at a time. Incidentally, the board has made this restriction even tighter in the proposed permanent version of this regulation than it was in the emergency rule that this proposal is intended to replace.

The two hygienist per dentist restriction

The Code of Virginia places no restriction on the number of dental hygienists that a dentist may supervise. Current regulations provide that dentists may supervise no more than two dental hygienists at a time.¹ The current proposal retains the restriction that dentists *in private practice* supervise no more than two dental hygienists, regardless of whether the hygienists are under direct supervision or general supervision. However, the board proposes to allow an unlimited number of dental hygienists to work under the general supervision of a single dentist at free clinics, in public health programs and in voluntary work.

The removal of the two hygienists per dentist restriction for work in free clinics, in public health programs and in voluntary work should enable public health programs, free clinics, and other voluntary settings to provide additional dental hygiene services. This change will particularly benefit economically disadvantaged Virginians. Since the services provided by hygienists under general supervision are considered unlikely to produce additional health and safety risks when conducted without a dentist present (Liang and Ogur, 1987), the proposal to allow an unlimited number of dental hygienists to work under the general supervision of a single dentist at free clinics, in public health programs and in voluntary work should produce a net benefit.

Unfortunately, maintaining the two hygienists per dentist limit for private dental practice perpetuates a rule that probably produces significant adverse economic effects for hygienists and purchasers of dental services including individual consumers, health insurance companies, and firms that provide health insurance for their employees. (Liang and Ogur, 1987) According to the Department of Health Professions (department), the board set the two-hygienist limit for economic reasons, not health and safety.²

One reason given for this restriction is that it would be “unfair” for one dentist to hire more than two hygienists given the shortage of hygienists in the state. This argument is inconsistent with employment practices both inside and outside of the health professions in the United States. It is not considered unfair that hospitals should compete for nurses, doctors, or X-

¹ This restriction has been in place for about 20 years.

² One member of the board has asserted that it is his opinion as a practicing dentist that supervising more than two hygienists would lead to a reduction in the quality of care. Otherwise, the board could present no evidence supporting this opinion. There is, however, good evidence that this is not true. See [Liang and Ogur, 1987]

ray technicians. It is not generally thought to be unfair that construction firms must compete for skilled tradesmen. In fact, competition for skilled workers, especially those in short supply, is the primary mechanism for ensuring that a sufficient supply of these workers is available in the economy. This is true in the health professions as well as other types of businesses.

Another reason given by the board has to do with the effect of the hygienist shortage on the availability of dental care in the more rural portions of southern Virginia. Members of the board argued that placing this restriction on hygienists is needed to keep hygienists from leaving dental practices on the south side and moving to other more populous parts of the state.³ While this justification may appear plausible at first, this costly policy probably makes worse the very problem that it is intended to solve.

Consider first the effect that this rule has on the supply of hygienists in Virginia. People enter the hygienist profession because they expect that this choice will provide them with the best combination of pay and job satisfaction relative to their other opportunities at the time. Besides pay, the attractiveness of the profession will certainly depend, among other things, on where that person will be able to get a job. For those considering dental hygiene as a profession who wish to live in southern Virginia the number of opportunities are very numerous, according to the board. However, for many people who might consider dental hygiene as a profession, southern Virginia may not be a preferred location.

For these people, the restriction imposed on the number of hygienists per dentist limits their opportunities in other parts of the state. Those preferring to live elsewhere will only practice in southern Virginia or in rural areas if there is a wage differential large enough to induce them to spend part of their professional practice time in those areas. For some fraction of those considering a dental hygiene practice, the lack of relevant opportunities in a preferred part of the state will induce them either to choose a different profession or choose a different state for their work. If we established a rule that newly trained dentists could only open their practice in southern Virginia, then presumably fewer people would choose to go to dental school.

The two hygienist per dentist restriction can only lower the number of people who choose to enter the profession in Virginia. The restriction tends to exacerbate any shortage that may exist in southern Virginia and rural parts of the state, in general. It is conceptually possible that

limiting job opportunities for hygienists in northern and central Virginia would cause more people to choose to locate in the southern part of the state or in rural areas generally. That this is not occurring to any great extent is obvious from the board's assertion of a continuing, and indeed worsening, shortage in southern Virginia. The people who choose to take dental hygiene training in spite of the restriction are not going to practice in southern Virginia or in rural areas unless the wage differential is sufficient to draw them there. Otherwise they will seek employment elsewhere in Virginia or in other states.

Further, this rule limits the flexibility of dentists in southern Virginia who would be willing to pay to bring more hygienists into the region. Once a dentist in, say, Danville has hired her two allowable hygienists, she would not be allowed to hire any more, even if she were willing and able to do so. This restriction works to limit hygienist opportunities in the very region suffering the greatest shortage.

Thus, we conclude that the two hygienist per dentist restriction almost certainly worsens the shortage of hygienists both in southern Virginia and throughout the state. In other words, it makes worse the very problem that it is intended to fix.⁴

Further, there is good evidence that this restriction results in higher costs of dental care in Virginia and, consequently, a reduction in the quantity demanded of dental services especially among those with lower incomes and with less access to comprehensive health insurance. After a comprehensive review of the effects of restrictions on dental auxiliaries, a Federal Trade Commission (FTC) study concludes that restrictions on the number of auxiliaries per dentist increases the cost of care without providing any increase in the quality of care for those who still purchase it. Unfortunately, as the cost of care rises, some people, especially those with lower incomes will choose to defer or eliminate expenditures on simple prophylactic care as well as other more complicated and expensive procedures. (Liang and Ogur, 1987) These results are corroborated by other studies. (Kleiner, 2000; DeVany et al., 1982) The restriction on dental auxiliary inputs to dental practices raises average costs, much of it due to overcapitalization of dental practices.

³ This argument is forcefully argued in the agency's response to this analysis.

⁴ We will discuss later some approaches that might improve the supply of hygienists across the state.

These increased costs represent a significant economic burden. The FTC study estimates that the increased costs resulting from restrictions on dental auxiliaries amounted to \$300 million (in 1986 dollars) each year from 1982 through 1985.⁵ This additional cost produces no benefit to the public. The FTC study reviewed the literature on medical outcomes and restrictions on auxiliary services. The literature provides no support for the argument that these restrictions are needed to protect public health and safety. Dental outcomes were no different when hygienist services were carried out by a dentist or a hygienist. The board has not been able to produce any evidence to the contrary.

The board has expressed a grave concern about the shortage and mal-distribution of hygienists in Virginia. And yet, the board's own regulations restrict the reciprocal licensing of dental hygienists licensed in other states. This is probably the single greatest factor in reducing the supply of hygienists in Virginia. The main certification exam for hygienists is a national certification test; that is, the test is the same for hygienists all across the country regardless of where they received their training. There is a portion of the test that requires a hygienist to make an in-person demonstration of skills, but the same is true in many (if not all) other states. At a minimum, a rule allowing the licensing by endorsement of hygienists from states with equivalent or stricter certification requirements could significantly increase the supply of hygienists in Virginia. As the board has pointed out,⁶ many other states train more hygienists than Virginia. Allowing some of these hygienists to migrate easily into Virginia will make it easier for dentists to recruit them to practices in Virginia.

Limiting the flexibility of practice arrangements for dentists and hygienists results in negative economic consequences by keeping the cost of providing dental services artificially high. Part of these economic consequences includes a lower level of dental services demanded by the public.

The two hygienists per dentist limit raises the cost of providing dental services in a number of ways. First, it constrains the potential supply of hygienist services to that which can be provided by two hygienists per dentist. Second, it forces dentists and hygienists to use

⁵ Not all of this loss is due to restrictions on the number of auxiliaries per dentist. Some were due to restrictions on hygienist functions; restrictions not justified by improved health outcomes.

⁶ See the board's response to this analysis.

inefficient business arrangements. Third, and probably most importantly, it restricts innovation in the provision of dental services.

Constraining the level of employment for hygienists will tend to keep the market price charged to consumers for dental hygienist services higher than it would be otherwise. It also results in longer waits for obtaining dental services. Relaxing this constraint would likely allow for more efficient use of existing office space, including rearranging the way office space is set up so that a greater supply of hygienist services can be made available.⁷ It is reasonable to expect that, absent the hygienist constraint, dental offices could be reorganized to take advantage of different equipment and materials requirements between a hygienist workstation and a station where dentists provide the services that only they are qualified to provide.⁸ More hygienists per dentist could reduce the equipment overhead for routine services. (DeVany et al., 1982) Also, since dentist wages are much higher than wages for hygienists, requiring that there be only two hygienists per dentist greatly increases the dentist part of the overhead for routine services. Relaxing this constraint would make it possible to provide more routine dental cleaning and examination services with much lower overhead. Thus, the average cost per hygienist service provided would be lowered, and hygienist services could be profitably offered at a lower price. If the ratio limit were modified, then new private clinics may open with space and equipment designed for offering a greater ratio of hygienist services to other dental services than are currently offered.

There is a good reason to conclude that this rule also harms the hygienists themselves. It does so by constraining the demand for hygienists in Virginia. It is likely that there would be some instances in the private sector where operating with a ratio of more than two hygienists per dentist would be more profitable than operating at a ratio of two to one or less. Without the limit, there would most likely be greater demand (more positions to fill) for dental hygienists in

⁷ The board mischaracterizes this analysis as implying “that a hygiene mill could be set up.” That said, available evidence suggests that an independent hygienist practice competing for business with the same services offered in a dentist office would probably improve public health while it may tend to lower the hourly wages of dentists. (Liang and Ojur, 1987; GAO, 1980; DeVany et al., 1982)

⁸ The board asserts that this is not true, that “a dental unit is a dental unit.” This statement is inconsistent with the obvious variation in dental units as between dental practices themselves. In addition, it strains credulity that there is no way to equip a station for hygienist care at lower cost than a station equipped for general dental care. The board’s assertion shows a lack of understanding about how, once freed of inappropriate regulatory constraints, individuals may be able to find ways of improving the quality of service while, at the same time, reducing costs. Poorly designed regulatory constraints can eliminate incentives to improve service and productivity.

the Commonwealth, and higher profitability would increase the value of hygienist services, which may be expected to result in somewhat higher wages. Higher wages for hygienists would encourage an increase in the number of hygienists entering the profession in Virginia either through migration from other states or through an increase in the number of Virginians choosing to be hygienists. The net result of this proposed rule is that, by reducing employment options for hygienists, this rule may also depress compensation for hygienists and exacerbate the shortage that the rule is intended to address.⁹

The ratio of licensed dental hygienists per licensed dentist is significantly lower in Virginia than for the nation overall.¹⁰ For reasons given earlier, this is likely at least partially caused by the restriction on the number of hygienists that a dentist can supervise. The result of this low ratio will be in higher overhead (hence higher costs for services) and reduced demand for hygienists (hence lower wages than would be received without the restriction).

The emergency regulation being replaced by this proposed language allowed a dentist to supervise two hygienists under general supervision and two under direct supervision. The current version inexplicably tightens this restriction so that a dentist may only supervise two hygienists at a time, whatever the level of supervision. This change leads to what can only be termed an absurd result.

Suppose that a dentist leaves town. In this case, she can leave two dental hygienists behind doing routine exams under general supervision. According to the board, this is acceptable medical practice. However, suppose that this same dentist slips back into town under the cover of night and directly supervises the work of two other hygienists while the original two

⁹ The board has indicated that hygienist salaries are already very high. Of course, such an observation has no meaning without an assessment of what price would be required to draw more hygienists into the profession. The dental regulations themselves, by restricting licensure by endorsement, are probably responsible for much of any shortage that currently exists.

¹⁰ Nationally there are 164,664 professionally active dentists in the U.S (source: American Dental Association). According to the ADA, this includes dentists active in all settings, including private practice, for public agencies, at free clinics, as well faculty and even graduate students. According to the American Dental Hygienist Association, there are more than 120,000 licensed dental hygienists in the country. Thus it can be conservatively estimated that nationally the ratio of licensed dental hygienists to licensed dentists is 0.73 (= 164,664 / 120,000). This estimate is conservative for two reasons: 1) the figure for dentists probably exceeds the total number of licensees in the country since it includes faculty and graduate students, and 2) the number supplied by the American Dental Hygienist Association for licensed hygienists in the nation was “more than 120,000,” implying that the actual number is substantially higher. Hence, the actual ratio of licensed hygienists to licensed dentists is most likely substantially higher. In Virginia the actual ratio of licensed hygienists (3,655) to licensed dentists (5,347) is 0.68 (source: Department of Health Professions).

are still operating under general supervision. Are we to believe that the hygienists working under general supervision are somehow less safe because their supervising dentist is working on other patients but would in fact be working more safely if their supervising dentist were snorkeling in the Caymans?

This example clearly displays the inefficiency of the proposed rule. It restricts the form of practice thereby increasing costs without any commensurate gain in safety or effectiveness. In fact, it acts to reduce competition that can produce great benefits for consumers. With greater latitude to organize their practices in a way that minimizes costs, the most innovative hygienists and dentists will find new ways to provide these services that will improve the timeliness, convenience, and cost-effectiveness of services. Hygienists could set up their own shops and hire dentists to provide the supervision needed (if any) to protect public health and safety. Dentists may want to expand and set up branch offices in malls to draw new customers by providing walk-in routine exams as a way of competing for new customers. We cannot anticipate what sort of innovations may occur in the absence of the restrictions designed to prevent them. In such an environment, the board's regulations would concentrate on making sure that whatever arrangements do arise; they meet the acceptable minimum standards for public health and safety. The current proposal does not pass this test.

No one is required by law to go to the dentist. People go to the dentist because they perceive it to be in their own best interest to do so. It is worth considering whether people who wish to have their teeth cleaned by a hygienist should be *required by regulation* to go see a dentist. In fact, such a rule may result in a lower standard of dental care in the population by restricting the ability of lower income families to at least have their teeth cleaned even if they don't think that they can afford a dentist. Hygienists, by spotting potential problems, could actually encourage more people to see dentists before their dental health problems become more serious.

The board has expressed a concern that relaxing this rule will result in "hygiene mills." By this, we may assume that the board is inferring that having hygienists offer cleaning services to the public without the supervision of a dentist will compromise public health and safety. It is difficult to reconcile this concern with the board's own assertion that it is consistent with public health and safety for an unlimited number of hygienists to offer dental care under general

supervision in a free clinic, or with the conclusion that two hygienists may offer services under general supervision in a private dental practice. The effect of this regulation is to limit competition among dentists and among providers of dental services generally. Such restrictions need to be based on sound scientific analysis of medical outcomes.

In fact, what evidence that does exist does not support the board's conclusion that practices with more than two hygienists will result in lower standards of care. (Kaplan, 1980; General Accounting Office, 1980; Hammons and Jamison; and Sisty and Henderson, 1974) Data provided by the Virginia Dental Hygienists Association indicate that only eight other states have restrictions on the number of dental hygienists that a dentist can supervise. By raising prices of dental care, these restrictions will likely result in the uninsured and people with lower incomes to defer or eliminate some dental care expenditures.

In summary, the proposal to rescind the two hygienists per dentist limit for general supervision services at free clinics, in public health programs and in voluntary work is beneficial in that it enables more hygienist services to be provided to economically disadvantaged Virginians. On the other hand, maintaining the two hygienists per dentist restriction for private practice unnecessarily limits job opportunities for dental hygienists, puts downward pressure on their salaries, reduces the total provision of hygienist services, and increases the per service cost of hygienist services to consumers.

Businesses and Entities Affected

The proposed amendments affect the 3,655 licensed dental hygienists, and 5,347 licensed dentists in the Commonwealth¹³, as well their patients, their patients' employers, and their

¹¹ Nationally there are 164,664 professionally active dentists in the U.S (source: American Dental Association). According to the ADA, this includes dentists active in all settings, including private practice, for public agencies, at free clinics, as well faculty and even graduate students. According to the American Dental Hygienist Association, there are more than 120,000 licensed dental hygienists in the country. Thus it can be conservatively estimated that nationally the ratio of licensed dental hygienists to licensed dentists is 0.73 (= 164,664 / 120,000). This estimate is conservative for two reasons: 1) the figure for dentists probably exceeds the total number of licensees in the country since it includes faculty and graduate students, and 2) the number supplied by the American Dental Hygienist Association for licensed hygienists in the nation was "more than 120,000," implying that the actual number is substantially higher. Hence, the actual ratio of licensed hygienists to licensed dentists is most likely substantially higher. In Virginia the actual ratio of licensed hygienists (3,655) to licensed dentists (5,347) is 0.68 (source: Department of Health Professions).

¹² Some additional wear to the equipment and additional energy use (lights on, power for the equipment) would create a small amount of additional cost.

¹³ Figures provided to DPB by the Board of Dentistry staff.

patients' health insurers. Dental practices, public health programs, and free clinics are also affected.

Localities Particularly Affected

The proposed regulations affect all Virginia localities.

Projected Impact on Employment

The proposal to allow certain dental hygienist services to be performed when no dentist is present will enable more hygienist services to be provided per week. Thus, total employment hours for hygienist may increase. The elimination of the two hygienists per dentist limit for general supervision services at public health programs, free clinics, and other voluntary settings should increase hygienist employment at those venues.

Effects on the Use and Value of Private Property

As mentioned above, the proposal to allow certain dental hygienist services to be performed when no dentist is present will enable more hygienist services to be provided per week. Relaxing the restriction of no more than two hygienists per dentist will tend to increase competition among dentists and, hence, provide incentives for dentists to lower their costs. By increasing the demand for hygienists, the value of hygienist licenses in Virginia may rise. With an increased level of competition, the value of some dental practices will undoubtedly rise while the value of other practices will fall. The costs to insurance companies covering dental services would likely fall somewhat, increasing their profitability and possibly eventually resulting in lower costs for insurance premiums paid by individuals and employers. A further relaxation of the constraint on dental hygienists would generate significant savings to the public, to insurance companies, and to private businesses.

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