

# Status and Trends in California Massage Education<sup>1</sup>

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## **Abstract**

California is both geographically large and culturally diverse. For more than three decades California has been a source of innovation in massage techniques and has fostered a wide choice of massage training to meet different interests and needs. This article examines a number of statistics from private postsecondary schools and from community college programs to better characterize the norms and breadth of massage training within the state and to illuminate emerging trends. The policy framework resulting from these analyses and from an outcome-based training orientation is discussed.

Among non-degree programs at private schools and colleges, dedicated massage schools were found to dominate in numbers, however, other types of career colleges were found to dominate the rate of increase. For entrants to practice, 76% were in programs between 100–250 hours. For entry-level programs, 61% were in the 100–250 hour range. Analysis of entrants per massage program indicates a likelihood of two student populations. One forms a base that appears to be insensitive to program hours. The second, composing  $54\% \pm 6\%$  of entrants strongly targets programs in the 100–250 hour range. Entrants in this latter population appear to decrease by half for every 38–88 hour increase in program length with a geometric mean of 58 hours. These results indicate that potential policy changes could have significant negative impacts on California entrants and schools relying on lower-end entry programs. Mitigation strategies are discussed in the context of balancing impacts with political feasibility and policy objectives and by identifying possible program targeting strategies used by entrants.

Although there are currently only three Chancellor's Office approved community college-based massage programs and four private associate degree programs in California, such programs are likely to become increasingly important. College-based programs offer the potential advantage of gaining entry to the massage profession via a certificate program and continuing on with an associate degree. An associate degree would in turn constitute greater career flexibility and greater portability to a bachelor's program at a four-year college or university. We examine such opportunities presented by community colleges and examine statistics and demographics already collected. Programs developed at De Anza Community College are used to exemplify outcomes and core teaching elements for producing graduates with the skills, knowledge, and abilities important to providing scientifically-based therapeutic massage treatments. Several outcome-based education methodologies being developed for medical education are referenced and noted as providing insights into creating better guidelines for subpractice specific massage training. These guideline concepts are then tied back into addressing medical concerns for evidence-based credentialing of complementary and alternative medicine (CAM) practitioners.

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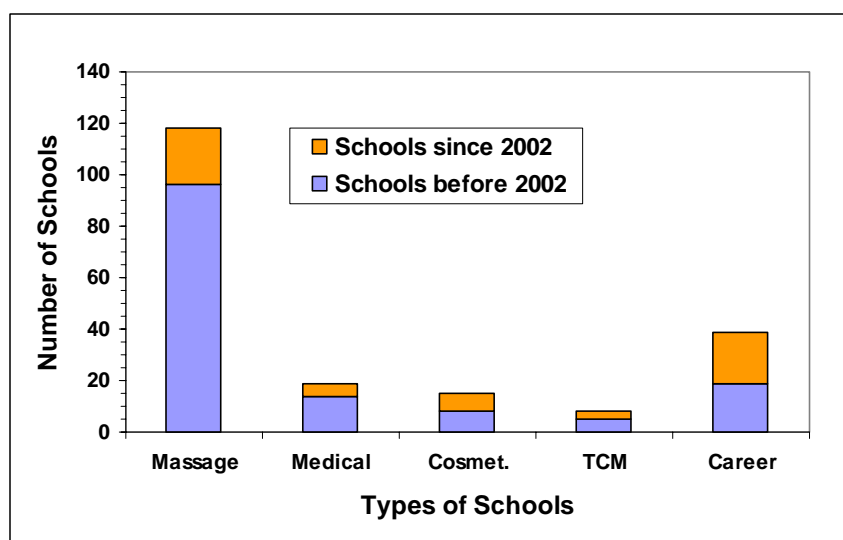
## Introduction

California is a state both geographically large and culturally diverse. It is also a state in which different philosophies of massage and bodywork have combined and emerged as new styles. A recent book surveying different ways of working with touch, the body, and awareness (Knaster, 1996), lists over 70 different approaches. It is likely that all of these are practiced within the boundaries of California and many have emerged here. Because of the over 200 state-approved private postsecondary massage programs and several community college massage programs, California massage education lends itself to statistical characterizations and a depth of analysis not practical in many other regions. A number of such analyses are explored in this paper.

Grant (2004) has informally speculated on the nature of knowledge interconnections in massage and bodywork resulting from the diversity of touch practices. Concisely, such knowledge appears to be like a roadmap, with multiple entry points, clusters of dense local interconnections (cities) and much less dense interconnections between separate clusters (highways). The mapping of such knowledge domains has become an important topic of information science research (Shiffrin and Börner, 2004). **With such a web or network structure, in contrast to the typically assumed tree structure of a single root and trunk with spreading branches, it is inherently difficult to define a profession by a single hierarchy of practices and learning. Advanced knowledge and skills become local rather than global – one has to consider the specific context and subpractice in assessing needed knowledge, skills, and abilities (Grant, 2003a). At the same time, there often remains a need to better and more objectively define knowledge and guidelines within individual clusters and to consider the interactions with other professionals.** The recent paper by Batavia (2004) reviewing the lack of a consensus set of contraindication for massage can be considered to exemplify such needs still to be addressed by the profession. Integrating complementary and alternative medicine (CAM) practices into the U.S. health care system is an ongoing topic of discussion in the health care literature, including guidelines for practitioner qualifications (Weeks and Layton, 1998; Eisenberg et al., 2002; Parkman, 2004). Recent papers and projects from medical education and assessment have outlined extended scopes of competence directly related to definition of specific educational outcomes (Harden et al., 1999; ACGME, 2001; Epstein and Hundert, 2002; Shumway and Harden, 2003). Based on a framework of evidence-based outcomes, desirable attributes for developing massage subpractice education guidelines are outlined in Appendix C. As will be discussed, non-regulatory application of such guidelines, such as implementation of facility use and referral requirements, likely allows the greatest flexibility of definition and use.

Estimates of the total number of massage therapists currently practicing in California range from 24,000–30,000, compared to approximately 200,000 practitioners nationally (ABMP, 2004). The profession is growing steadily, a product of increasing consumer awareness and interest. On the supply side, the number of therapists practicing in California displays year-to-year modest net growth, a result that masks high entry rates into the profession slightly more than offsetting high practice termination rates displayed by those previously in the profession.

A number of massage programs in California have historical continuity back into the 1970's. The data of approval of a state-approved training program is part of the material maintained by the Bureau for Private Postsecondary and Vocational Education (BPPVE), the bureau of the California Department of Consumer Affairs (DCA) with the mandate for school approval and oversight. As will be discussed further in the policy sections of this paper, massage licensing is under consideration in California. Implementation of licensing would likely result in substantial rearrangement in many current training programs, partially motivating this paper as documentation of the current characteristics of massage training. Such rearrangements would



**Figure 1: Massage schools shown by type of school.** Categories used are: dedicated massage schools, medical staff school, cosmetology schools, schools of Traditional Chinese Medicine, and general career colleges.

result from changes in certificate hours or content, both cases requiring re-approval by the BPPVE. A second goal of this paper is to provide an evidence-based framework for near-future policy structuring within California. A third goal is to provide a needed example of the process of creating such a policy-oriented evidence base to further such development within the profession.

### Non-Degree Private Postsecondary Training

One characterization of the provision of massage education is the division of training into categories of schools offering the training. Five such categories were determined from the lists of state-approved approved private programs that are compiled quarterly by the BPPVE. The categories are dedicated massage schools, medical staff training schools, cosmetology school, schools teaching Traditional Chinese Medicine (TCM), and general career colleges. In addition, each included school was characterized by whether it had massage programs listed that were approved before 2002 or only had programs approved from 2002 to present. This was taken as an indication of a school's entry into offering massage training. Data were taken from the data on non-degree massage programs in the lists of non-degree (177) and degree granting (25) schools reported by the BPPVE in their August 2004 update. Several non-degree schools having the word massage in their programs were not included, the use being outside of the context of entry to massage practice (e.g., hypnotherapy, dog-grooming ...). Schools listed (separately) by the BPPVE as being registered rather than approved were also not included, such schools mainly being oriented to professional continuing education and avocational courses rather than to professional entry training. Of the 25 schools listed by BPPVE as degree approved schools, non-degree massage entry programs were identifiable in 23 and were included. The results of the categorization are shown in Table 1 and Figure 1. While dedicated massage schools predominate, recent growth in programs in absolute numbers is half again as large for the other categories combined. In terms of percentage growth, schools adding massage to other programs predominated.

As part of the process of justification for proposed occupational regulation, the California legislature requires sponsoring agencies to complete a "sunrise questionnaire response". The purpose of the sunrise questionnaire is to ensure that proposed occupational regulation never "sees the sun rise" unless it can be ascertained that the regulation would be protective of the

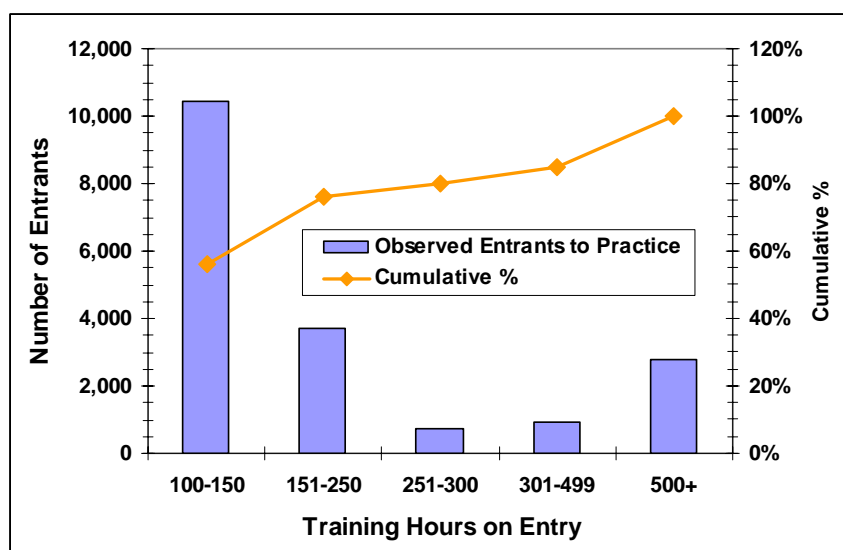


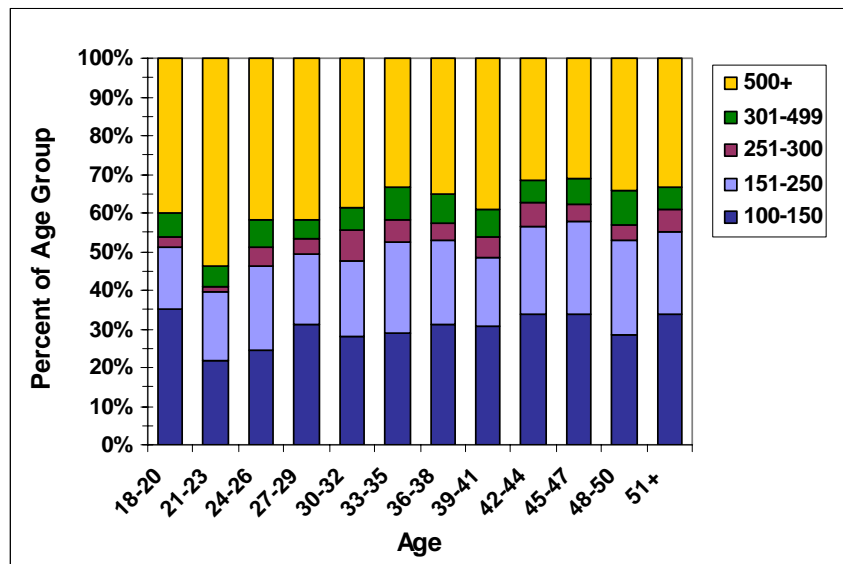
Figure 2: Massge program graduates by education hours

public and that such protection is gained in a minimally intrusive manner. This is consistent with considerations of costs and benefits of such regulation (Cox and Foster, 1990) and with the U.S. constitutional basis for intervention of the police power of the states into commerce (U.S. Supreme Court, 1889) outline in the policy section below.

**Table 1:** Types of non-degree schools offering massage training. Schools have been categorized as dedicated massage schools, medical career schools, cosmetology schools, schools of Traditional Chinese Medicine, and general career colleges. Each category was further divided into schools with massage program certificates approved before 2002 and those only having certificates approved in 2002 to present.

	Massage	Medical	Cosmet.	TCM	Career	Totals
Number of Schools	118	19	15	8	39	199
Percentage of total	59.3%	9.6%	7.5%	4.0%	19.6%	100%
Schools teaching massage before 2002	96	14	8	5	19	142
Schools teaching massage since 2002	22	5	7	3	20	57

In their spring 2004 questionnaire response, Associated Bodywork and Massage Professionals (ABMP) estimated the breakdown by hours of massage program graduates. These estimates were based on recent polling of 71% of schools combined with prior survey results for currently non-responding schools (ABMP, 2004). The breakdown of graduates by program hours was centrally shaped by analysis of the ABMP database of over 8300 California members. Records for members were filtered for education hours falling within the parameter categories in the table. The ABMP database contains total verified hours at the time membership commenced, allowing the possibility that initial program hours were fewer than observed entry hours, an important point of aliasing in the analysis of the 251-499 hour categories to follow. Numbers for American Massage Therapy Association (AMTA) members were estimated using their national proportions of Professional vs. Associate members. Non-members of either of those two associations were assumed, on average, to have somewhat fewer education hours. The resulting estimated number of schools and breakdown of graduates by hours for years 2004-2005 is given in Table 2. The hour distribution for 2004 is displayed in Figure 2, noting its use here as observed entrants to massage practice. **In the 2004 estimates, 76% of entrants are in programs between 100-250 hours.**



**Figure 3: Relative use of program hour categories by age group**

A second view of how entrants are accessing training programs is via looking at the distribution of age groups over program hours. As with total entry data, an estimate was obtainable from Associated Bodywork and Massage Professionals member intake data for California between January 2001 and mid-April 2004. The caveat to these data is that only those oriented to join an organization and to remain as members in 2004 were counted. There is thus an unknown element of self selection in the data presented in Table 3. In particular, the count of those in the 18-20 age-grouping taking massage training on an exploratory basis may be an underestimate. Apart from the 18-20 age-grouping, the distribution of entrants with age is remarkably uniform.

**Table 2:** Estimated number of massage schools and massage program graduates shown by program hours. The data are taken from ABMP (2004) as described in the text.

Year	# of Schools	100-150	151-250	251-300	301-499	500+	TOTAL
2004	215	10,416	3,720	744	930	2,790	18,600
2005	220	10,500	4,000	744	950	3,002	19,196

The relative use of different hour categories by age is shown in Figure 3. This view shows the 18-20 age-grouping making relatively heavy use of the 100-150 hour programs. In contrast, usage of the 100-150 hour programs is lowest for the 21-23 age-grouping, with higher relative usage of the 500+ hour programs. This seems indicative of this group having a greater tendency to stage their entry into massage by use of programs that package everything together without requiring decisions about separate parts. Over the remaining age groups, a slight trend toward increasing use of programs in the 100-250 hour range at the expense of the 500+ hour interval appears present.

Another important view of training in California is the breakdown of entry-level (i.e. initial certificate) programs into hour categories. We have again obtained such data from the August 2004 updates of the BPPVE lists of programs at state-approved schools, combined with information taken directly from school web pages. Entry-level, for these purposes, was taken to be the initial training certificate offered by a school, not including short continuing education programs or degree programs. The counting of programs is slightly different than counting

schools, in that a school may offer multiple entry level tracks, often western and Asian modes of bodywork. The number of schools affected by these multiplicities was found to be very small compared to the 192 programs for which hours were obtainable. A number of the career colleges have multiple campuses, as listed in the BPPVE reports. These were included as multiple programs as in the BPPVE listings. The results of this compilation are shown in Table 4 and Figure 4.

**Table 3: Education of entrants shown by age and hour categories.** Statistics are from ABMP member intake information for those joining from January 2001 to mid-April 2004 and remaining as members at the latter date. Self-selection of those who become organization members may have biased the data to some extent — particularly in underestimation of entrants in the in the 18-20 age range.

	100-150	151-250	251-300	301-499	500+	Total by age
18-20	36	16	3	6	41	102
21-23	53	43	4	13	131	244
24-26	67	59	13	20	114	273
27-29	109	64	14	18	146	351
30-32	89	61	26	18	122	316
33-35	97	79	19	28	112	335
36-38	103	72	15	26	116	332
39-41	111	66	19	26	142	364
42-44	127	84	24	21	119	375
45-47	125	88	16	26	114	369
48-50	85	72	13	26	102	298
51+	214	135	36	36	212	633
<b>Totals</b>	1216	839	202	264	1471	3992

**Table 4: Entry-Level Massage Programs by Education Hours**

Hours	Number	Contribution %	Cumulative %
0-99	0	0.00%	.00%
100-150	73	38.02%	38.02%
151-250	44	22.92%	60.94%
251-300	10	5.21%	66.15%
301-499	4	2.08%	68.23%
500-549	10	5.21%	73.44%
550-599	0	0.00%	73.44%
600-649	16	8.33%	81.77%
650-719	1	0.52%	82.29%
720-749	27	14.06%	96.35%
750+	7	3.65%	100.00%
<b>Total</b>	<b>192</b>	<b>100.00%</b>	

**Notable points revealed by this categorization include that about 61% of programs are accumulated at 250 hours and below.** The profile of programs drops sharply between 251–499 hours. The cumulative total increases only to 68% in this region. There are program peaks following 500 hours, 600 hours, and 720 hours, respectively contributing about 5%, 8%, and 14% to the total number of programs. These correspond, respectively, to requirements for AMTA membership, federal financial aid excepting Pell grants, and federal financial aid including Pell Grants. Calculating the requirement for Pell Grants required noting that an eligible program

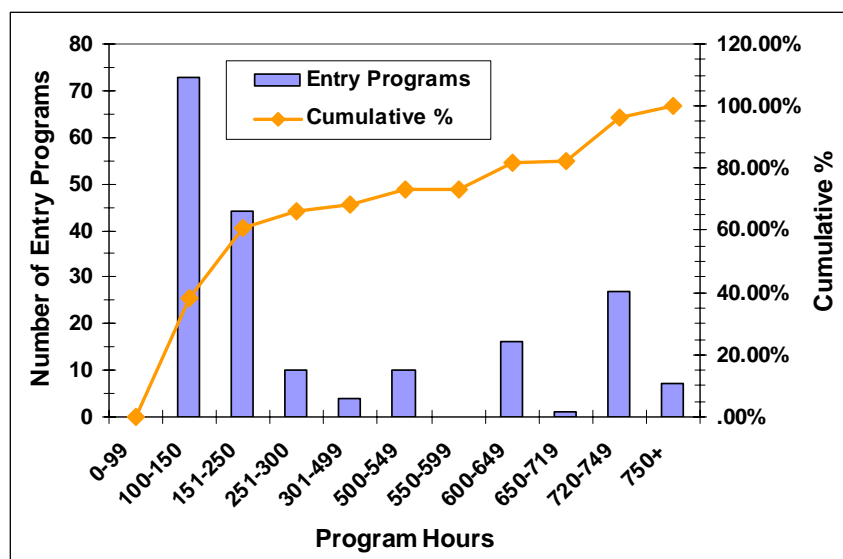


Figure 4: Massage programs shown by hours of training on entry

must be a minimum of 30 weeks and that a full-time program is 24 clock hours per week. Clearly the peaks in program numbers at 500, 600, and 720 hours are narrow, threshold driven occurrences and are substantially less than program levels in the first 250 hours. In this respect, however, the rate of growth in massage training at the various career schools of Table 1 and Figure 1 are pertinent to trends. Such career schools tend to be accredited by school rather than by individual program and to offer only programs 600 hours or longer. **This trend toward targeting financial aid on the higher end of programs is also evident by the observation that, of the 57 school additions from 2002 to present (see Table 1), only two were in the range of 500–549 hours. The business viability of the 500–549 hour range appears to be increasingly undercut by its proximity to the availability of financial aid at 600 hours.**

Having hour breakdowns both for program graduates and for school programs motivates considering what insights their joint consideration might yield. The cumulative percentage distributions versus program hours are similar for entrants and schools, but not identical. In particular we note that 76% of the entrants are included for programs of 250 hours or less, while only 61% of school programs are in this range. This is indicative that they may be some number of students specifically targeting lower hour programs. In the analysis that follows we further characterize such effects of student needs and/or preferences, apart from program availability.

The distribution of school programs within a geographical region is an inescapably driving factor; there can only be graduates within an hour category where there are programs available within that category. We thus consider a multiplicative model rather than an additive one, hypothesizing that the entrants to massage are the product, in the mathematical sense, of the school distribution and a distribution for entrant preference. In short, we hypothesize that

$$\text{Massage Entrants (hours)} = \text{School Programs (hours)} \times \text{Entrants per Program (hours)}.$$

The notation “(hours)” has been used above as shorthand for “as a function of hours”. Dividing the estimates for massage entrants by estimates of programs, we first scaled our relative distribution of Table 4 to 215 programs, matching, for the sake of consistency, the number of schools used by ABMP (2004) in Table 2. The resulting absolute numbers should be taken to be semi-quantitative due to the ambiguity in definition between programs and schools. The scaling

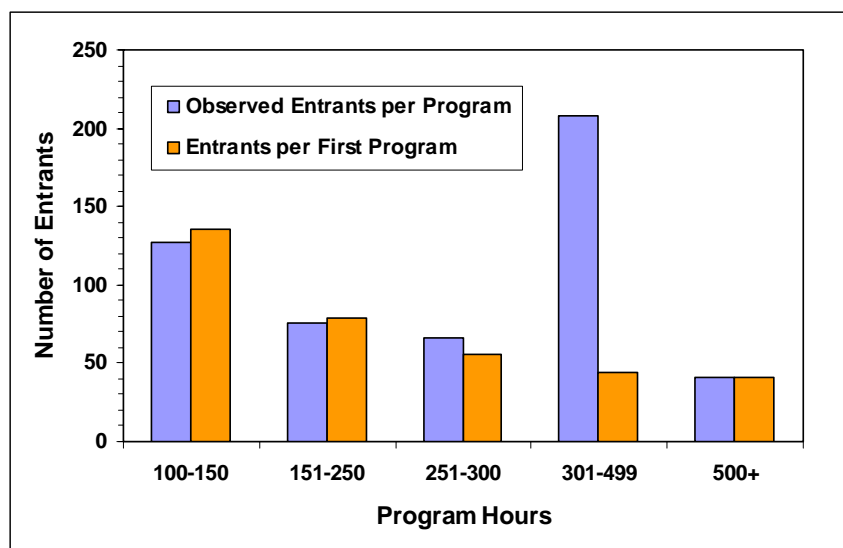


Figure 5: Entrants per School Program by Education Hours

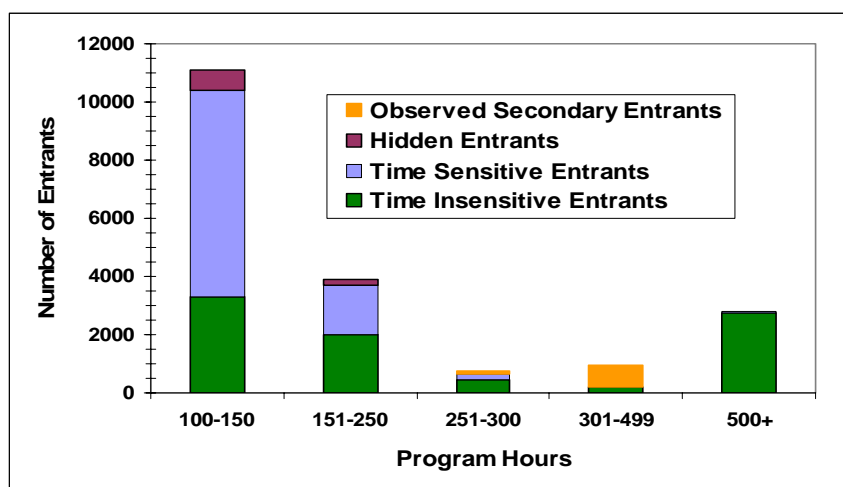
does not affect ratios between hour categories or results scaled back to total entrants. The results obtained from dividing out the number of school programs are shown as “Observed Entrants per Program” (blue bars) in Figure 5 and in the matching column in Table 5.

**Table 5: Analysis of Student Entry.** The observed entry per program is first shown. This includes an unlikely spike in the 301-400 hour range. We attribute many of these observed entrants to secondary programs. Adjusting entrants per first-tier program according to a two-population exponential model identifies observed secondary program students as hidden first-level entrants.

Program Hours	Observed Entrants per Program	Adjusted Entrants per Program	Adjusted Student Entry	Hidden Student Entry	Observed Secondary Students
100-150	127.42	135.79	11,100	684	0
151-250	75.50	78.87	3886	166	0
251-300	66.44	55.97	627	0	117
301-499	207.63	43.92	197	0	733
500+	40.84	40.85	2790	0	0

The data directly derived for entrants per program are notable in two specific respects. Despite the variation in each of the inputs, there is a regular and unmistakable pattern of decrease in the result, except for the hour division covering 301-499 hours. As is commented on in more detail in Appendix A, the form of the decrease with hours is suggestive, at least to the practiced eye, of exponential decline over an underlying constant base. On inspection of the distribution for school programs, the large upsurge in the 301-449 hour bin appears to be the result of the number of entry programs decreasing markedly in this range while the number of observed entrants remains more constant. This suggests that most of those being recorded as entering the profession at this level are aliased from entry programs in the 100-250 hour range. Such observations are of those completing a secondary program at schools after a prior entry program. It was also observed that the 251-300 range might be affected in this manner although to a much smaller extent. Returning those aliased entrants to the 100-250 hour range would have only a small affect the lower bins because of the much greater number of programs there.





**Figure 6: Adjusted Massage Program Graduates by Education Hours.**

As per Table 5, entrants have been adjusted to identify hidden entrants (burgundy) observed after completing secondary programs (gold). Estimates for those entrants who are time sensitive (blue) and target lower hour programs are separated from those who appear to be time insensitive (green).

The features just noted are only qualitative. To gain quantitative estimates, we apply the model of one exponentially decreasing population of entrants and one population assumed constant with hours. We also assume that the 251-300 hour and 301-499 hour bins contain the same populations, providing a basis for estimating the lower hour graduates aliased into these bins. More is discussed on the validity of this model and of error estimates in Appendix A.

To reiterate, we assume an underlying constant base level in entrants per program, a component exponentially decreasing with program hours, and aliasing of some graduates of lower hour initial certificates into the 251-499 hour range. Under these assumptions, a small system of nonlinear equations was solved to evaluate these effects while simultaneously preserving total student numbers at 18600 (the number of total entrants for 2004 from Table 2).

This analysis indicates a constant underlying base of 40.55 entrants per program. These entrants are considered to be insensitive to program hours over the range of hours considered here. Since this value is constant across all hour bins, multiplying it by the total number of programs provides the corresponding number of entrants, a value of 8718 or 47% of the total entrants. When mapped back to entrants (rather than entrants per program), the hour insensitive entrants are depicted by the green portion of the histogram bars in Figure 6. The lack of sensitivity of this population to hour changes in programs could be viewed as a readiness in intent and supporting resources to acquire a significant amount of training independent of the specifics of its packaging. This would also suggest a population committed from the beginning rather than exploring entry into the practice of massage.

Taking the aliased secondary entrants out of the 251-300 and 301-499 hour categories and placing them back into their likely primary-level entry categories, produces the adjusted entrants per program and adjusted student entry columns of Table 5. These are depicted by the gold bars in Figure 5 and by the sum of the green, blue, and burgundy regions in Figure 6. The burgundy areas show the hidden entry of the formerly aliased students. The gold bars in Figure 6 show their observed entry after completing a second-level program. It was estimated that observation of 117 entrants had been aliased into the 251-300 hour range and 733 into the

300-499 hour range. It is not known to what extent these students may have delayed for time or economic reasons between completion of their primary programs and initiation of their secondary training. Motivations for delaying entry could include greater confidence with more training and meeting hour minimums for local licensing.

**The 53% of entrants described by the exponential (i.e. time sensitive entrants) part of the model, decrease by half with approximately every 57 hour increase in program length. They compose about 70% of the adjusted entrants at the 100-150 hour level, 49% at the 151-250 hour level, 28% at the 251-300 level, and less than 8% by the 301-499 level. There is a clear indication that a substantial portion of the entrants into the profession are strongly targeting the low hour programs for initial entry.**

An analysis of the validity of the two-population exponential model and an estimate of the error in the estimates derived from it is given in Appendix A. This analysis indicated that  $54\pm 6\%$  of entrants are in the time-sensitive population and that they appear to decrease by half for every 38-88 hour increase in program length with a geometric mean of 58 hours. The results are not appreciably different from the nominal values derived above. No data were available on demographic differences between the time-sensitive versus time-sensitive students. Potential differences include age and career stage and full-time versus part-time practice goals. Some speculation, consistent with observations, may be useful as to driving factors and to mitigation of impacts from regulatory policy changes, either local or state.

**The observation of a time-sensitive population is consistent with a population seeking to change careers to massage practice or to add part-time practice to an existing career in the presence of competing demands on time and money. For example, those using vacation from another job to train, 80-100 hours can be accomplished in a period of two work-weeks plus the weekend in the middle. The availability of a second such period might, however, be a year later. Such a situation constrains both the total time to gaining a significant result and the incremental “bursts” used to get there. The time used is also clearly diverted from family and community.**

For a person taking courses for two, 3-hour nights per week, 250 hours amounts to about 42 weeks. Shorter course may be manageable on a pay-as-you-go basis, while longer course often require assuming an additional credit burden. Connors (2004) notes that adults making career changes or augmentations seek highly focused courses that can be completed in a few weeks to a few months. Ibarra (2002) notes the efficacy of exploring career changes by stepping part-way into them (i.e. exploring), while maintaining a prior career. Such exploration is well-matched by the lower end of current programs. Ibarra also notes that working identity is an amalgam of the kind of work done, the relationships and organizations that are part of work life, and internal stories connecting motivations and life path. Research by Oleski and Subich (1996) support an interpretation of career change as an effort to shift to environments more conducive to and congruent with personal goals, skills and abilities. Both papers implicitly suggest that exploring massage practice fits with an increase in the importance of life goals as one matures. Ibarra (2002) reports career transition research with persons 31 to 52 with a mean of 41. Oleski and Subich (1996) report research on those having an average age of 34.4 years and a prior career experience base of 14.5 years. With massage practice seen as one of several possible means of increasing life satisfaction while benefiting others, unavailability of short-duration programs could prompt a decision to choose another path or to forego making a transition.

Viewing targeting of low-hour programs as a convolution of a constraint on total hours to a useful (i.e. reinforcing) result with a constraint on hours available for an educational “burst” provides guidance for policy. The first factor urges moderation in overall requirements toward useful entry. The second acknowledges that resources, whether time or economic, may take longer to recharge than to expend, prompting training to be taken in shorter hour modules or bursts. Further data gathering and analysis on the demographics of both the time-sensitive and time-insensitive entrant populations would be necessary to elevate such considerations above the level of speculation. Ramifications of the above, however, will be considered in the policy section below.

### **Private Postsecondary Degree Programs**

The number of private postsecondary degree programs is currently quite small. While there are 25 private degree granting schools with massage programs, most such programs are not degree programs. According to the BPPVE list of degree granting schools, Career Networks Institute offer an Associate of Occupational Science (AOS) in Massage Therapy (approved 2002), International Professional School of Bodywork offers an Associate of Science (AS) in Holistic Health (approved 1996), Northwestern College offers an AOS in Advanced Therapeutic Massage and Bodywork (approved 2003), and Sonoma College offers an AS in Massage Therapy (approved 1999). These schools were queried as to their associate programs, with one school responding. If that respondent is typical, these programs would be producing about 200 degree program graduates per year. About 5% of their certificate program entrants would be continuing into the degree program. The gender ratio would be about 60% female to 40% male.

Such programs may mark an increasing trend, since half of the four have been approved in 2002 or later. In choosing between 720+ hour certificate programs making all forms of federal financial aid available and an associate degree program at around 1000 hours, the added flexibility offered by the degree would likely become a consideration. This would be particularly true if the associate program included milestone certificates, allowing entry to practice. Such programs would not likely be impacted by any contemplated hour regulation of massage training in California. As is the case with community colleges, discussed below, career colleges tend to be accredited by school-wide agencies rather than by program-specific agencies. This is likely problematic only with porting of units to states in which a rule-making agency looks at accreditation as the major means of accepting out of state education and in which the agency is not sufficiently knowledgeable about the diversity of agencies approved by the U.S. Department of Education. De Anza Community College, discussed in detail below, encountered such roadblocks in several states in having their graduate transcripts accepted based solely on accreditation by the Western Association of Schools and Colleges (WASC). WASC is one of six regional associations that accredit public and private schools, colleges, and universities in the United States. While De Anza was able to obtain approval by program merit via filing information directly with the involved state boards, the initial problems with acceptance of WASC accreditation are indicative that the massage profession remains parochial about such issues.

### **Community College Programs**

Although there are currently only three, Chancellor’s Office approved community college-based massage programs in California, such programs are likely to become increasingly important. Shorter certificate program, not requiring Chancellor’s Office approval, are initially offered as a mechanism for exploring student demand and for meeting more basic student interests. College-based programs can offer the advantage of gaining entry to the massage profession via a certificate program and continuing on to an associate degree. An associate degree can, in turn, facilitate later portability to a bachelor’s program at a four-year college or university.

Massage therapy vocational training in the California community colleges is a recent development. The first such program was conceived and researched in 1989 by one of the authors of this paper (Forman) with the first classes offered on an experimental basis in 1991 at De Anza Community College in Cupertino. The initial motivation had been to provide an alternative source of massage services for physically limited students following the budget-trimming cut of a popular hydrokinetics course from the adapted physical education program. While now there are now also massage programs at Fullerton College and Monterey Peninsula College, these programs are relatively new and have little available in collected statistics and demographics. This paper therefore relies strongly on the experience at and data from De Anza Community College as exemplary of the development and potential of such programs.

Massage therapy programs within California's public community colleges have their own set of rules and regulations. Rather than being under the auspices of the BPPVE as are private schools, community college certificate and degree programs over 18 semester units (27 quarter units) must be approved by the California Community College Chancellor's Office (CCCCO, 2003). As an example, it is instructive for understanding this separate process to consider the route traveled by the De Anza College program.

After the 1991 inception of the De Anza program, additional classes were added each quarter until each of the core classes were offered, improved and approved by the college curriculum committee. At this time massage was not a recognized vocational program in the California Community College System. In 1996, after many course refinements, approval of massage therapy as a vocational training program was applied for. This was to be the start of a lengthy approval process. After departmental and divisional approval of the concept and curriculum, the approval path continued through the academic senate, the district board of trustees, and the regional vocational deans. It then went on to Sacramento for approval by the state chancellor's office, in time for academic year 1999-2000. Massage was first listed in the taxonomy of Programs (TOP) under code 1299, "other health professions". A new top code, 1262, was designated for massage therapy for academic the 2004-2005 year, completing the journey from experimental classes to a fully recognized program. This bodes well for the community college-based massage programs because it reinforces that there are enough successful programs and growing interest in this field to identify them as a unique entity in the taxonomy of programs. This also implies that CCCCCO can now track student outcomes which will further the statistics available for this field in the future.

Community college based programs, once approved, hold many advantages for those desiring to study massage therapy. Academically rigorous programs can cost a fraction of what classes cost in the private sector and provide units that transfer toward more advanced degrees. There tend to be excellent services to help the economically deprived, learning disabled, hearing and visually impaired, and re-entry women. Such college programs facilitate gaining skills that help a diversity of people obtain and maintain gainful employment in the massage field and serve the community by making graduates services readily available to the public. Community college programs also support links to other existing professional programs such as Nursing, Physical Therapy, Personal Fitness Training, and small business development. Community college programs can take longer to complete than private programs, both the academic rigor and the academic calendar leading to completion times of one and a half to two years.

At De Anza College, the counseling department is available to all students, assisting and guiding them with scheduling, graduation requirements and transfer for more advanced

degrees. An electronic job board was developed to promote the career opportunities available to graduates. De Anza, in addition, has established an excellent relationship with a local chiropractic college, allowing students to tour cadaver labs to reinforce anatomy skills.

De Anza offers three ladder, Chancellor's Office approved programs (DACC, 2004), a 29.5 quarter-unit (504 hour) Certificate of Achievement, a 38.5 quarter-unit (852 hour) Certificate of Proficiency, and an Associate in Arts degree (1008 hour). The certificate programs take about two years to complete. The certificate and AA curricula are updated every four years to keep the program current with new techniques, teaching strategies, innovations and requirements. A Massage Program Advisory Committee, consisting of a diverse group of professionals, meets 2-3 times a year to discuss the state of the program and make recommendations for improving it. The advanced programs at De Anza are built upon the lower unit programs DACC (2004).

Fullerton College offers two nested massage certificate programs. The Massage Technician Certificate requires completion of 19-24 semester-units (408-526 hours) and the Massage Therapist Certificate requires 33-40 semester-units (888-1006 hours). Monterey Peninsula College offers two certificates in Massage. The Massage Practitioner certificate requires 210 hours of study. The Massage Therapist certificate, involving over 700 hours, is earned with either completion of a Certificate of Achievement or an Associates degree in Massage Therapy.

Since "Massage Therapy" is considered an "emerging field" at the Chancellor's Office, there is not a set body of required curriculum that programs at community colleges need to cover at a given level of certificate. The Chancellor's Office requires that certificates longer than 18 semester units or 27 quarter units be approved, but otherwise leaves the descriptive language for different length certificates up to individual districts (CCCCO, 2003).

**The curriculum at De Anza College is rigorous, based upon a scientific model of providing treatment, and is oriented toward developing the critical thinking skills of students.** It delves into assessment, palpation, case study research, ethics, hygiene, fitness, therapeutic stretching exercises, business development skills and practice running a business. Students are prepared for seeking employment and provided job placement opportunities through an electronic job board. To provide flexibility and depth, students are provided an eclectic background in a variety of techniques including sports massage, Asian therapies, traditional relaxation massage, chair massage, trigger point therapies, and referred pain patterns. Students also are trained in utilizing computer appointment-scheduling and financial record-keeping software. Targeted outcomes for the De Anza massage therapy program include the following competencies:

- Plan and organize an effective massage session.
- Perform a massage for therapeutic benefit.
- Develop and implement a self-care strategy for injury prevention.
- Develop and maintain successful ethical relationships with clients and other health care professionals.
- Demonstrate a depth of knowledge, skills, and cognitive understanding to be able to practice in a variety of settings as required or desired.
- Develop a strategy for gaining employment and/or a private practice.
- Maintain accurate client documentation and financial records.
- Identify opportunities for professional growth.

The De Anza curriculum rigorously implements these outcomes by focusing on a number of core elements of knowledge and skill. These elements are outlined in Appendix B under the

outcomes they primarily target. Each outcome includes an estimate of its share of the 504 hours of the Certificate of Achievement. The hour estimates include the repetition and diversity of presentation methods used to enhance retention and to address differences in learning styles.

We now look at some of the statistics of those taking the De Anza programs. The overall data for certificates and degrees awarded ranges from 1997–2004 and includes 120 awards. The distribution of these awards over time and program are shown in Table 6 . From data from 1999–2004, roughly 85% of students were 24 years or younger. Roughly 76% were females, with the relative distribution over programs shown in Table 7.

**Table 6: De Anza massage certificates and degrees awarded during academic years 1997–2004.** Data for Certificates of Achievement and Proficiency and for AA Degrees are shown.

	# Degrees/Certificates Awarded			Total
	CEA	CEP	AA	
1997–1998	13	0	0	13
1998–1999	6	0	4	10
1999–2000	5	2	5	12
2000–2001	7	1	4	12
2001–2002	7	2	3	12
2002–2003	3	1	9	13
2003–2004	13	8	15	36
2004–2005 *	5	2	5	12
<b>Total Certificates &amp; Degrees Earned</b>	59	16	45	120
<b>Percentage Spread</b>	49.16%	13.33%	37.5%	

\* The 2004–2005 total is estimated to be 30 at the end of the academic year

**Table 7: Gender distribution of De Anza College massage programs, 1999 to 2004**

	CEA	CEP	AA	Total %	Total #
<b>Females</b>	76.9%	81.2%	73.2%	76.0%	73
<b>Males</b>	23.1%	18.8%	26.8%	24.0%	23

While the number of students and awards is still too small to allow an evaluation of demographics of usage over time and type of program, some overall demographic information for all programs in total for 1999–2004 is available. This is shown in Table 8.

## Policy Issues

### Context of Regulation

Active discussion is occurring today in California about replacing a patchwork of inconsistent local massage licensing regulations with uniform state regulation. This development follows the robust growth of the massage profession. State-level regulation of massage has grown from 22 to 33 states during the past decade and several other states, including Michigan, Massachusetts, Indiana and Pennsylvania, are considering legislation. None, however, display California's diversity of entrants and programs. California is also notable as being among the states that take a strict constructionist view of the need for proposed occupational regulation to demonstrate public benefit.

**Table 8: Demographics of De Anza College massage programs, 1999 to 2004**

<b>Ethnic / Regional Background</b>	<b>Number</b>
African American, Non-Hispanic	4
American Indian / Alaskan Native	1
Asian Indian	1
Central American	1
Chinese	1
Decline to State	12
Filipino	2
Japanese	1
Mexican/Mexican American/Chicano	7
Middle Eastern	1
Other Hispanic	1
Unknown/Non-Respondent	4
Vietnamese	1
White, Non-Hispanic	61
<b>Total</b>	<b>98</b>

As was mentioned above, the power of the individual states in the U.S. to enforce occupational regulation was set forth in the 1889 Supreme Court decision of *Dent vs. West Virginia*. This decision decided the constitutional balance between the 14<sup>th</sup> amendment restriction that “No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law, nor deny any person within its jurisdiction the equal protection of the laws” and the power of states to enforce laws that protect the public from the results of incompetence and mal-intent. The court specified both the rights of the states to intervene and the reasons for such intervention.

*The power of the state to provide for the general welfare of its people authorizes it to prescribe all such regulations as in its judgment will secure or tend to secure them against the consequences of ignorance and incapacity, as well as of deception and fraud. As one means to this end it has been the practice of different states, from time immemorial, to exact in many pursuits a certain degree of skill and learning upon which the community may confidently rely; their possession being generally ascertained upon an examination of parties by competent persons, or inferred from a certificate to them in the form of a diploma or license from an institution established for instruction on the subjects, scientific and otherwise, with which such pursuits have to deal. The nature and extent of the qualifications required must depend primarily upon the judgment of the state as to their necessity.*

Subsequent state sunrise laws have often determined that the harm to be remedied must be apparent and not remote and that the form of regulation should be minimal to the need. Inherent in such regulations are considerations of an imbalance of knowledge leading to poor consumer choice, severity and magnitude of initial harm, and lack of other sufficient remedies. Cox and Foster (1990) note that regulation can have unintended collateral effects, producing decreases in availability of services or increases in prices that lead consumers to forego professional services. They cite a study in which licensing of electricians led to more “do it yourself” efforts at wiring and a resultant increase in electrocutions. This example motivates the need to assess collateral as well as direct effects of regulation in balancing public policy.

The expression of protection “against the consequences of ignorance and incapacity” in the Dent vs. West Virginia ruling fits well with the model of outcome-based education seen in the medical profession as described by Harden, et al. (1999). In this model, the need for education is derived from specific results initially desired and later measured in practice. The outcome orientation can include interpersonal as well as strictly technical skills, as exemplified by the study of teaching communication skills to medical students reported by Yedidia et al. (2003). Core features of the methodology are that the educational contents are specific to the needed results and that there is a clear path for feedback leading to confirmation and improvement of the training-outcomes relationship. On the basis of incremental education, there is also a close correspondence of the outcomes methodology to techniques of integrated safety management (ISM) in which one of the authors (Grant) has been trained (USDOE, 2004). The five core functions of ISM include defining the specific scope of work, analyzing the hazards within the defined work, developing training and protocols to control hazards, working within the controls, and providing continuous feedback and improvement based on results in practice. Such educational and safety management methodologies have direct application to considerations of scope of practice versus specific additional training and to the need and use of specialty certifications and facility requirements for different subpractices and contexts of massage practice. Based on the work of Field and Lohr (1990) on guidelines for clinical practice guidelines, Grant (2003a) previously suggested desirable attributes of subpractice guidelines for massage. These attributes are summarized here in Table 11 within Appendix C. The scope of a subpractice could be determined by methodology (e.g. orthopedic massage), application to a specific population (e.g. geriatric massage), or the location of practice (e.g. hospital-based massage). Such divisions are compatible with the clustering of knowledge proposed in Grant (2004) and are specific enough to guide development of outcome-based training needs.

Massage and bodywork have in the last several years undergone several assessments of the likelihood of harm for actual practice. Ernst (2003) and Grant (2003b) have independently reviewed the medical indices and databases for reported cases of harm from massage. Both found cases of harm to be of extremely low incidence. Ernst (2003) succinctly summarized these findings with *“Massage is not entirely risk free. However, serious adverse events are probably true rarities”*. This conclusion of low likelihood of harm is supported by two other types of information. Studdert (1998) summarized insurance data for massage from the 1990’s, finding very low incidence of harm. Grant (2003b) further summarized statistics from Studdert et al.’s tables. Claims were made against about 0.18% of those insured. Paid claims were on the order of 0.08% with the average payment being about \$6300. About 6% of claims made were for physical injuries above minor. The British Columbia Health Professions Council included massage in a major scope of practice review within a model based on shared scopes of practice and a specific list of reserved acts (BCHPC, 2001, 2004). The conclusions relevant to massage were that *“the Council has seen no evidence that massage therapy carries with it such a sufficient risk of harm to warrant making any portion of its practice a reserved act”*.

While there is no evidence base demonstrating patterns of physical harm to the public from the actual practice of massage, other forms of harm may exist from lack of oversight of practitioners in highly personal public contact and from the irregularity and sometimes excesses of local regulation. This broader context was noted in a recent position statement of the California Alliance of Massage & Bodywork Schools (CAMBS, 2004).

*It has been proven that the practice of massage does not cause serious or permanent harm to the public. However, the practice of massage has become an important and rapidly growing segment of*



*the health, tourism, and personal services industries of California. The public is indirectly harmed by a lack of minimum standards in massage education and licensing, by a patchwork of confusing local massage regulation, by confusing job titles used by massage professionals, and a lack of standard titles for massage training courses. As a result it is difficult for the public to ascertain the qualifications of massage practitioners and therapists, especially to ascertain whether the individual massage therapist or practitioner has been trained in issues of health, safety, contraindications and the transmission of disease as related to the practice of massage. The public is also harmed because there is currently no adequate system for reporting any acts of gross negligence, malpractice, or unethical behavior of an individual massage therapist, other than filing a civil suit.*

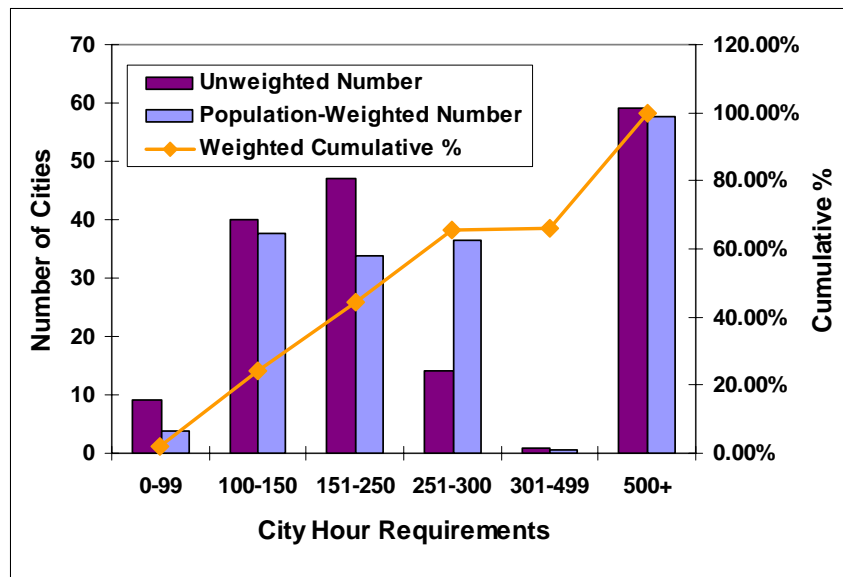
### **California Specific Policy Issues**

**In California, pressures for preempting local licensing via state regulation come from several directions. Practitioners frequently practice in multiple settings. In urbanized areas, these diverse settings can easily be in different municipalities. More and more, cities are developing or suddenly changing massage profession licensing rules. Such rules are distinct from and in addition to broad business license requirements applicable to all trades and professions. Such local rules often are inconsistent and developed without wide input from or knowledge about the massage profession.**

**The diversity and changeability of local training requirements has complicated school curriculum structuring and increased business uncertainty. Inconsistent local regulations (including no regulation in close to 30% of California) coupled with inconsistent use of practice titles have made it difficult for consumers to decipher the training and skills a therapist may possess. Resulting confusion leads some consumers to forego massage and others to select more expensive spa settings for massage therapy rather than a less expensive local community option. Some of this confusion is inherent to the diversity of massage techniques, but much of it is unnecessary, especially for those seeking basic massage services.**

Cities most often do not inform all affected parties that they are considering regulation changes. Their interest is not in balanced regulatory solutions conducive for practice and business, but in responding quickly to regulatory problems or high regulatory costs. Regulations are often arbitrarily framed as hurdles to entry rather than from demonstrated needs of practice. In contrast to state-level legislative bills, there is no uniform system for learning about, reviewing, and providing input on proposed local ordinance changes. Changes affecting practitioners within a local jurisdiction and affecting schools having the jurisdiction within their educational “watershed” are often learned about only after adoption. The increasing rate of local changes is more and more creating a state of business uncertainty that is ultimately harmful to practitioners, schools, and clients. Where ill-considered and inconsistent ordinances are implemented, massage therapists practicing within multiple jurisdictions find themselves paying multiple fees, taking duplicative tests, and having to secure schooling documentation on multiple occasions. It’s a needlessly repetitive, unnecessarily expensive process. Massage training institutions also face the extra administrative costs of providing graduate documentation to multiple municipalities.

In addition to adopting a variety of restrictive rules and requirements, different cities often adopt specific and differing education hour requirements for licensure. Based on data from ABMP (2004), the distribution of hour requirements for 170 cities that have such specific requirements is shown in Table 9 and in Figure 7. This data is presented both raw and weighted in importance by population. While the overall correlation coefficient between city population and hour requirements is negligible (0.03; see Figure 8), large cities can individually have a significant impact on weighting by population. Los Angeles, in the 251-300 hour-category, adds



**Figure 7: Breakdown of city requirements for hours of training; unweighted and weighted by population.** Note that the 251-300 hour bin includes Los Angeles, a significant city in terms of population weight. Data on unweighted hour requirements and populations were taken from ABMP (2004). Of the 313 cities listed therein, 170 had requirements for licensing given in terms of training hours.

significant weight to that bin at the expense of other hour categories. The lack of correlation between city hour requirements and city populations points toward requirements being driven by more complex factors. Population is not necessarily a good indicator of urbanization, for example, since relatively small cities can be found within much larger metropolitan regions. California is also notable for its ideological and political divisions between north and south and coastal and inland regions.

**Table 9: Breakdown of city hour requirements for local licensing is shown.** Of the 313 cities for which licensing requirements are detailed in ABMP (2004), 170 are listed with specific hour requirements as used here.

Hours	Number of Cities	Population	Population Weighted Number	Weighted Percent	Cumulative %
0-99	9	441,420	3.8	2.26%	2.26%
100-150	40	4,305,578	37.5	22.09%	24.35%
151-250	47	3,881,909	33.9	19.92%	44.27%
251-300	14	4,185,514	36.5	21.47%	65.74%
301-499	1	62,582	0.6	0.32%	66.06%
500+	59	6,616,402	57.7	33.94%	100.00%
Totals	170	19,493,405	170	100.00%	

The distribution for hours required by cities, weighted by population, is nearly constant over the range of 100-300 hours. This indicates that city hour requirements are likely not the driving cause of the variation in school programs over this range or of the exponential dependence on program hours of the time-sensitive 53% of the entrants to massage practice. Various socioeconomic factors of ability to assume a debt burden and redirect time for a prolonged period remain an important consideration for the latter (Connors, 2004).

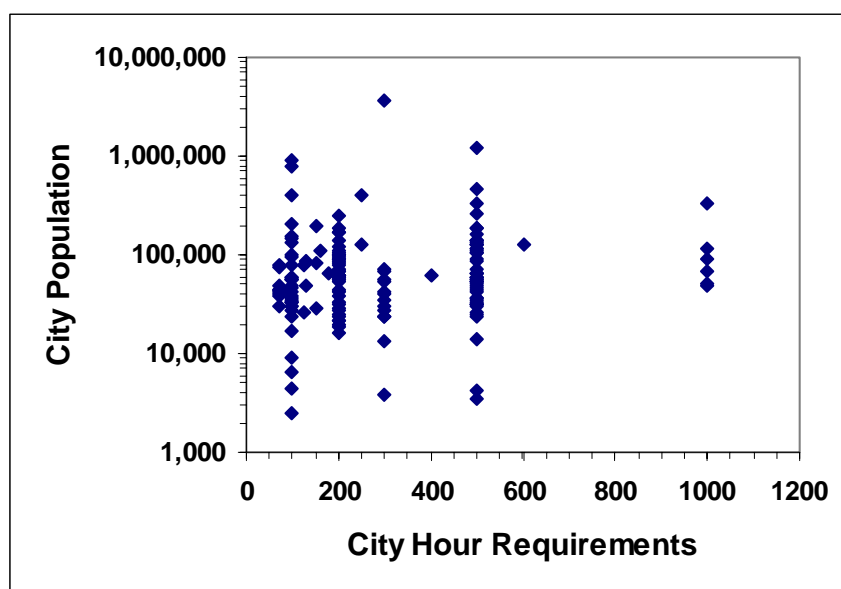


Figure 8: Check of correlation between city population and hour requirements for massage licensing. The correlation coefficient of 0.03 and the figure both indicate little overall correlation. This includes only the 170 cities with specific hour requirements out of the 313 listed in ABMP (2004).

In a consideration of regulating massage, the public has two paramount interests: a) a continued adequate supply of massage therapists; and b) assurance that curriculum requirements result in adequate knowledge and skills to be able to provide a safe, efficacious massage. Because of its high inherent safety, massage safety needs to be addressed by regulation are only focused and well-defined if kept minimal, addressing basic contraindications, hygiene, and disease transmission. For curriculum considerations, it should be noted that massage is not inherently a unitary set of techniques, but a diversity of practices mainly united by the intent to benefit clients via some form of organized touch and/or bodily awareness experience. Given the diversity of massage practices and businesses, the considerations of effectiveness addressed by regulation should be kept basic. In general, government regulation is too blunt an instrument for efficiently defining advanced methods or expertise in various subpractices. Subpractice specific guidelines, private certifications, and facility use requirements better determine needs for advanced and subpractice specific training outcomes. The public interest is not served if new licensing requirements are adopted which would disenfranchise any substantial portion of currently practicing therapists, radically curtail the number of entrants to the profession, or needless impact existing training businesses. An important dimension of the analysis in this paper is promoting understanding of the nature, dimensions, and utilization of the training infrastructure now in place.

Relatively low professional survival rates for massage practice graduates make education requirements for massage training the primary long-run determinant of service availability. Table 10 shows anticipated graduate practice entry and survival rates up to five years categorized by hours of core training. The conclusion from this data is that only a bit over one-fourth of massage school graduates in California today are projected to remain in practice five years from now. If this rate of loss from practice were taken to be equilibrium with current rates of entrance, the equilibrium practitioner population would be on the order of 67,000,

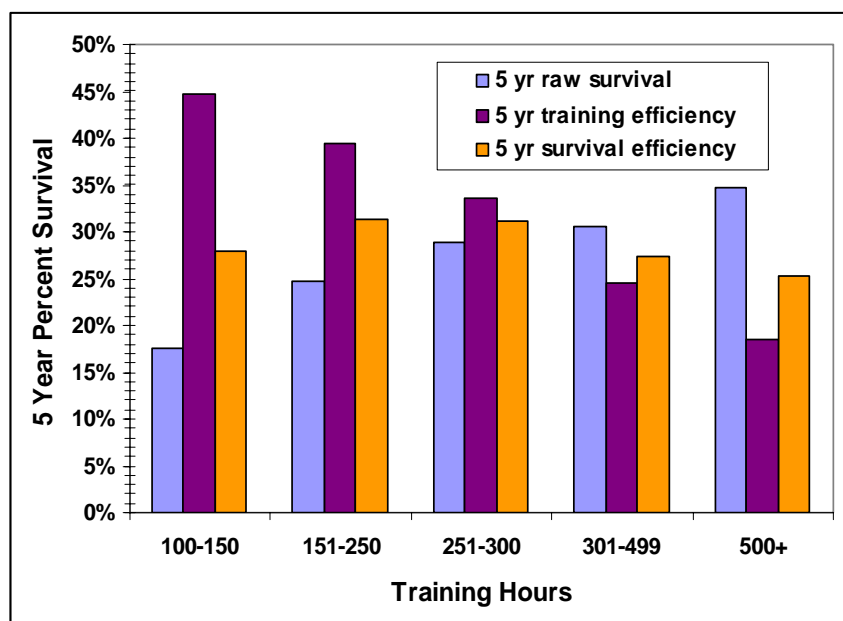
somewhat higher than the 24,000-30,000 estimated more directly (ABMP, 2004). Given the implied number of clients served, either figure would indicate a very large statistical base of **successful and competent practice under current norms of training**. When only those graduates actually entering practice are considered, raw 5-year survival rates vary from 29.2% in the 100-150 hour cohort to 37.7% in the 500+ hour cohort. In comparison, data from several sources summarized in Headd (2000), indicate that general 5-year small business survival rates are in the range of 42%-51%. The somewhat lower rates for those entering massage could be due to a combination of those entrants not initially viewing practice from a business perspective together with underestimated physical demands of ramping up practice hours.

In Figure 9, several views are given of the 5-year survival rates for graduates. The data direct from Table 10, providing information on raw rates of survival, are shown by the left-hand (blue) bars. This data indicates increasing rates of survival with increasing hours. When survival in practice is weighted per hour of training, the result is the middle (burgundy) view. This view provides an estimate of training efficiency, showing a monotonically decreasing trend with increasing hours. On average, the lower rate of survival in practice is more than offset by the much lower cost in time and education expenses. If the geometric mean is taken of raw survival and training efficiency, the right-hand (gold) view results. This view is essentially a measure of survival efficiency, taking account both of the overall survival rate and the cost at which that survival is obtained. Survival efficiency has a relatively flat peak at about 250 hours of core training. Survival efficiency would include achieving knowledge, skills, and abilities sufficient for marketability, effectiveness in a sufficiently wide area of practice to obtain clientele or employment, and physical durability in practice.

**Table 10: Presumed Practice Survival Rates by Hours of Education.** Data are from ABMP (2004).

Time Span	Hours of Core Education				
	100-150	151-250	251-300	301-499	500+
# of therapists in cohort	1,000	1,000	1,000	1,000	1,000
# Starting work at all	600	800	840	860	920
Still practicing at end of yr 1	408	553	630	645	710
Still practicing at end of yr 2	330	448	504	516	566
Still practicing at end of yr 3	267	367	418	433	481
Still practicing at end of yr 4	216	301	347	364	409
Still practicing at end of yr 5	175	247	288	306	347

A balance needs to be struck between the reality of California massage training infrastructure today and judgment about how much training is necessary to address both public protection issues (curriculum components such as anatomy and physiology, contraindications, health and sanitation, and ethical boundaries) and development of touch technique skills sufficient to provide a basic restorative massage. A starting point is the reality of current California massage training programs. Several years ago, the California Alliance of Massage and Bodywork Schools (CAMBS) undertook an outcomes-based study of massage education requirements on request of the BPPVE. This resulted in outcomes definitions for massage interns, massage practitioners, and massage therapists at 100, 180, and 250 hours, respectively (CAMBS, 2003). More than half of massage program graduates complete a program of 150 hours or fewer, three-fourths a program of 250 hours or fewer. Those numbers shape the massage training universe of program offerings. These entry programs are the bread-and-butter offerings creating the economic viability of many schools. Even though attrition rates are higher for short-program graduates, the high numbers of such



**Figure 9: Several views of 5 year survival rates for massage practice.** The blue bars show raw survival per graduate. The burgundy bars are survival weighted per hour of training (training efficiency). The gold bars are the geometric mean of the prior two measures (survival efficiency). This final measure, which accounts for both the overall survival rate and the cost efficiency of training, has a relatively flat peak at about 250 hours. Raw survival data are as shown in Table 10.

**individuals entering the profession each year have lead to their prevalence within the overall therapist supply mix.**

If the line for state licensing were to be drawn at 100 or 125 hours of required education, the impact would be virtually negligible on massage training institutions and on entrants. However, roughly 75% of cities and counties already enforcing education hour requirements would have to accept lower hour requirements. This should be interpreted within the context, however, that there is no regulation in close to 30% of California on a geographical basis. Given the political strength of cities, it is unlikely that a law having substantial city opposition would be feasible. Nor is it clear that cities could be sold on the tradeoff between local control and state oversight at this level. While views differ within the profession, many question whether the subject coverage and marketability delineated in the paragraphs above can all be adequately addressed within a 125 hour curriculum.

Alternatively, a decision to require 500, 600 or 720 hours of massage education would effectively disenfranchise a huge portion of existing massage training institutions in the state. Asking a school with a current 125 hour program to transition to 500 hours is too broad a chasm to bridge for most such institutions. Many of the independent massage schools in California are small schools in staff and physical plant. Many exist on an economic niche of pay-as-you-go students exploring career option or making mid-life career transitions (Connors, 2004). The analysis of private non-degree programs in this paper indicates that about 53% of current entrants are extremely program hour sensitive. Even with mitigation policies, it is expectable that a majority of the time-sensitive students would simply not enter massage training. Moreover, as hour requirements increase and the minimum hour requirements for federal

financial are approached, smaller schools would be forced into an economic niche already strongly targeted by an increasing number of career colleges.

**Economic analogs of the ecological principle of competitive exclusion would suggest that the diversity of massage programs is in large part supportable because of differences in market niches.** It is likely that many current small schools would be unable to take on the challenges of facility expansion and accreditation to gain access to and support the overhead of financial aid, especially while simultaneously losing their current economic niche and being forced into competing head-on with multi-program colleges. In the higher-hour market range, private career colleges (and community colleges) can leverage classes and resources not exclusive to massage. Such multi-program schools are also generally school accredited rather than single program accredited; an added efficiency.

These are the kind of internal efficiencies noted by Kuperman and Wio (2002) as being paramount in determining dominance or extinction in a homogeneous market. In the past, competition was mainly between dedicated massage schools, but, as indicated by Table 1 and Figure 1, massage has sufficiently entered the cultural mainstream that the categories of education providers have widened. Moreover, while local ordinances have not always been benign toward massage business, by analogy with ecologic competition, the spatial heterogeneity of local regulation, particularly within individual urban regions, has likely furthered diversity (Durrett and Levin, 1998). There is substantial potential that too great an overall change in hour requirements coupled with the uniformity of state regulation could both largely eliminate the time-sensitive 53% of current entrants and the majority of dedicated massage schools. It is unlikely that this dramatic reduction in diversity would benefit the public. The outcome would likely be a severe reduction in the supply of massage therapists for six to eight years before sufficient new training infrastructure could be created. It is also likely that there would also be a significant demographic shift in those contemplating entry into massage practice. Service costs for clients would likely rise rapidly in the interim as a market response to diminished therapist supply, later stabilizing at some in-between level.

**In promoting public benefit, professional licensing standards should be set at a level that is minimally adequate to ensure a reasonable prospect of public safety and efficacy in the provision of a basic massage and, sufficing those needs, minimally disruptive to current business practices. Above that level lie multiple opportunities for massage therapist differentiation, attainment of voluntary certifications, satisfaction of facility use and medical referral requirements, and provision to clients of more advanced skills. Markets will function to strike a balance between clients quite satisfied with basic restorative massage work and others seeking more advanced work.**

### **Community College Policy Issues**

Community colleges have to fit their programs within the constraints of academic quarter or semester systems. The implication of this is that any stipulation of total hours or stipulation of the structuring of hours needs to be cognizant of existing academic course structure. It also follows that the arbitrary addition of new, separately identifiable courses is generally infeasible. For example, on the 12-week quarter system used by De Anza College, a four-unit lecture-lab class meets for six hours per week; 3 hours per week are lecture and three are in lab.

Room use within a college is almost always shared with other courses with massage likely not being the dominant use. Massage equipment for hands-on lab must generally be setup and broken down for each occurrence. Massage specific hardware modifications to rooms is not

likely to be feasible. Colleges may have stipulations for instructors to maintain constant line-of-sight supervision of the entire class.

As more and more community colleges add massage education programs, it becomes essential to college transferability and matriculation that program directors meet to decide upon educational outcomes and minimum competencies for graduates. Such discussion and structuring would parallel similar ongoing efforts in medical education to formulate clearly defined outcomes and assessment methodologies (ACGME, 2001; Harden et al., 1999; Epstein and Hundert, 2002; Shumway and Harden, 2003). The Accreditation Council for Graduate Medical Education (ACGME), for example, has stressed the importance of training and assessment in six core competency areas: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. The issue of matriculation and transferability must also be discussed as well as the goals and outcomes for unregulated short programs. Given the diversity of massage practices and goals, from sensory awareness training to facilitation of healing with specific tissue injuries, a single structuring is likely elusive. As part of the California system of higher education, however, all schools have the responsibility to ensure that the parts fit together as a whole. Discussion needs to occur on what elements and outcomes are needed in massage therapy curricula. There is a significant need to decide on consistent terminology for range of motion and for conditions that are contraindicated or massaged with suitable caution. The goal is not a standardization of curriculum, but an objective of having the parts form compatible modules throughout the community college system.

Discussions should also be held with four-year institutions to persuade them to develop massage therapy degree programs with an emphasis on research and instructor preparation. In addition, improved relationships between public and private massage therapy schools should be nourished. At this point in time, there is no reciprocity/transferability of units between schools. Community colleges cannot offer all areas of specialization in their programs due to limitations of funds and facility constraints. If community college programs multiply, most continuing education units would likely still be provided by the private market of existing state-approved massage schools and state-registered seminar providers.

State regulation of massage, both in and outside of California, needs to account both for the full potential of massage-based techniques and for existing constraints of college-based programs. Significant mistakes have been made in other states that should not be repeated. Community colleges cannot re-write their curriculum to conform to arbitrary and capricious ideas about program increment lengths. Courses used span multiple departments and already conform to academic unit schedules. As previously mentioned, all parts of ladder programs over 18 semester units (27 quarter units) must be approved by the State Chancellors Office. Public colleges are generally accredited under a national system of regional accrediting agencies. Community colleges in California are accredited by the Accrediting Commission for Community and Junior Colleges of the Western Association of Schools and Colleges (WASC). The Department of Education has seen fit to recognize multiple types of accrediting agencies as gatekeepers for financial aid — a policy that those formulating rules and regulations for massage should be knowledgeable about and honor.

### **Policy Issues Relative to Health Care Inclusion**

The full inclusion of one or more subpractices of massage within the US health care system is a challenge of high potential that has been sadly lacking in the depth and consistency of attention given to it. Licensing regulations in 33 states range from 250 to 1000 hours but are largely

implemented as high hurdles without well-defined health care attributes and outcomes. Few are specific enough in outcomes to enable any scope of practice differentiation between massage oriented towards health care inclusion and the diversity of general massage practices. Some state laws or regulations, irrespective of training, severely and unwarrantedly limit options for massage as treatment. The New Jersey massage certification act, for example, specifically disallows treatment of injury or dysfunction. This stands in sharp contrast to California's recently passed SB 577 (complementary and alternative health act) which provided a wide unlicensed scope to provide treatment subject to a list of restricted acts and disclosure requirements. Efforts to address health care subpractices of massage have been hampered by a tendency to view massage as a single hierarchy rather than an affiliation of various touch subpractices. Most often the result has been arguments over hours of education rather than productive discussion of how well-defined outcomes are best decided, documented, and taught.

Frustration with the above situations led to the formation of the American Medical Massage Association (AMMA, 2004) as an attempt to address "medical massage" issues and to separate scientifically-based techniques from general therapeutic massage. The AMMA effort, however, while notable in intent, is short of a comprehensive policy for engaging both the diversity of the profession and its potential for development. Eisenberg et al. (2002) and Parkman (2004) have noted medical concerns about complementary and alternative medical provider qualifications and inclusion. Weeks and Layton (1998) have discussed an inclusion model for CAM practices within health care. The framework suggested by Eisenberg et al. (2002), however, uses exiting structures too vague to guarantee, for example, knowledge of medical terminology, health care facility protocols, orthopedic assessment skills, and working with cognizance of specific health conditions. In integrating massage into health care, there is a clear need for evidence-based outcomes leading to well-defined education elements and assessment modalities (Harden et al., 1999; Epstein and Hundert, 2002). Given that massage is often as much of a kinesthetic and interpersonal skill as a technical one, such assessment should include methods such as the Objective Structured Clinical Examinations (OSCE) developed in medical education for assessment of usage of skills, knowledge, and abilities (Shumway and Harden, 2003).

In Canada, the provinces of Ontario and British Columbia have 2200 hour and 3000 hour title acts, respectively, placing those practicing under the auspices of the acts within the scope of coordinated health professions acts. The College of Massage Therapists of British Columbia, in particular, has provided a specific set of competencies (CMTBC, 2004a) with documentation of the review process they underwent (CMTBC, 2004b). The assessments of outcomes include the use of practical demonstrations and knowledge of specific health conditions. While more extensive, the defined competencies are structurally similar to those set out for the De Anza College program in Appendix B. As title acts, these regulations do not restrict the provision of massage services by unregulated persons, although they do restrict use of common terms such as "massage therapist" and "massage practitioner". The British Columbia Health Professions Council specifically determined that massage did not require access to or the definition of new restricted acts as defined for all health professions in a single list (BCHPC, 2001, 2004). The major impact of these acts is thus to set educational outcomes for including massage practitioners within the provincial health care systems.

Whether the comprehensive all-in-one approaches of Ontario and British Columbia or the creation of multiple specialty subpractices is most efficacious in the US has yet to be widely discussed and determined. Multiple specialties would be more targeted to immediate practice, and offer more flexibility for a practitioner in extending into new specialties. Such diversity would also be more appropriately addressed as professional guidelines affecting medical



referrals and privileges of facility use than as a panoply of state regulations. In either case, guidelines for outcomes, education and assessment have not undergone the type of process of creation, review, and refinement outlined in Appendix C. The massage profession needs to consider that different massage subpractices can require different specifics of education and training. This in turn implies that more attention must be given to those doing the teaching, both in terms of technical knowledge and in having the background to address material organization and diversity of student learning styles.

From a health care orientation, needed education outcomes depend on the techniques used, the population that is served, the setting of practice, and the presence of and interaction with other stakeholders. To encourage the confidence of other health care providers and the public, the profession must take on the creation of well-defined and documented education and training guidelines both for those entering a new health care subpractice and for those who are to be the educators and mentors. To remain derelict in this duty is a disservice both to the public and to those entering the massage profession as a health care career.

## **Conclusions and Recommendations**

**Forming a coherent and evidence-based policy for education and for the regulation of massage becomes a process of both understanding normative data on current practices and of balancing the viewpoints of affected parties that include clients, entrants to practice, massage schools, and local governmental agencies. Given the number of clients served implied by the number of active practitioners and the long history of massage practice, California represents a very large statistical history of successful and competent practice under current training norms. Changes in training requirements should be cognizant both of current norms, have specific outcomes with an evidence-base for need, and be oriented toward creating measurable benefits to quality and delivery of practice. Such an outcome-based orientation and the options it provides as to assessment of outcomes are summarized by Harden et al. (1999) and Shumway and Harden (2003), respectively. Also in this objective framework, Wojtczak and Schwarz provide a useful reminder that ‘standards’ are inherently connected to measurable specifics.**

*The term ‘standard’ means different things to the different people, and often is used interchangeably with ‘objectives’, ‘outcomes’ and ‘goals’. Sometimes the word is used as a synonym for doing better in some nonspecific way such as “we should improve our standards”, or “the standards are too low”. The dictionary definition of ‘standard’ refers to “something set up and established by authority, custom or general consent as a model, example or rule for the measure of quantity, weight, extent, value, or quality”. ‘Standard’ is also defined as a “criterion, gauge, yardstick, and touchstone” by which judgments or decisions may be made. Thus, the word ‘standard’ refers simultaneously to both ‘model and example’ and ‘criterion or yardstick’ for determining how well one’s performance approximates the designed model. Thus, a standard is both a goal (what should be done) and a measure of progress toward that goal (how well it was done). Therefore to be meaningful, a standard should offer a realistic prospect of evaluation to measure whether anyone actually meets it. Without that, it has no practical value.*

Because of the diversity of massage practices, skills, knowledge, and abilities from training are often specific to a particular subpractice. In general, government regulation is a much blunter instrument than subpractice specific guidelines, private certifications, and facility use and referral requirements for determining advanced and subpractice specific needs of training. The profession itself will have to take on the task of better defining needed subpractice guidelines with input and review by multiple stakeholders.

Community colleges and private career colleges have begun to recognize the opportunities of providing massage training. Operating at the higher end of hour requirements, they provide certificate programs that potentially can be folded into associate degree programs, providing increased career and education options. Such programs also have internal leverage with course not specific to massage alone. This leverage coupled with campus wide resources is allowing career colleges to start providing some of the lecture-based classes via online distance learning technology. Generally, career colleges also access federal financial aid via school (rather than program) accreditation. Multi-program colleges have become the fastest growing segment of massage training and education provider.

Having recognized massage as a training area, multi-program colleges, both public and private, have the potential for dominating the economic niche near and above the 600 hour minimum for federal aid. Community colleges can offer a particularly affordable option to students with degree goals related to massage practice, particularly when later transfer to a four-year college is considered. Not surprisingly, the financial aid qualification minimums at 600 hours and 720 hours and the associate degree availability at around 1000 hours appear to increasingly be acting as strong attractors that greatly decrease the business (competitive) viability of the hour ranges just below, including the prior usage of a 500 hour benchmark. This result appears to follow from the increasing awareness of massage as mainstream career and educational training. Degree programs in particular, may increasingly be targeted for the increased credibility, flexibility, and transportability associated with having an academic degree. Although four-year colleges have not yet integrated massage training into synergistic programs, policy makers should allow for increasing community college participation and the possibility of training participation within the entire California higher education system.

The data considered indicate separation of entrants into two categories, program-hour insensitive (47%) and program-hour sensitive (53%). The time-insensitive entrants are served by education across the spectrum of hour categories. The time-sensitive entrants are almost exclusively served by private school program in the lower hour categories. The data considered, particularly in relation to the time-sensitive 53% of entrants, would indicate that more stringent than norm local requirements for massage practice is likely acting to geographically limit available massage services. This would be indicative that a state policy more in line with current state norms would have public benefits in increasing availability of services.

**Consideration of all the diverse factors covered in this paper, would tend to indicate that education hour requirements around 250 hours would strike a balance between current entrant norms, targeting of programs by entrants, survival efficiency of graduates, and current local agency norms. This level is also consistent with the outcomes-based study of massage education requirements undertaken by CAMBS (2003) on request of the BPPVE. If a 250 hour entry-level standard is established, public protection will be enhanced if the rules include a detailing of required minimum hours addressing the aforementioned subjects of anatomy and physiology, contraindications, health and sanitation, and ethical boundaries. State regulation would enhance uniform oversight of practitioners and handling of consumer complaints. Uniform oversight, record keeping, and complaint handling at the state level would be compensatory to local agencies for loss of local control.**

**A state-wide level of requirements, even at the level of 250 hours, would, from the analysis above, be expected to have a nontrivial impact on many current schools and entrants. Mitigation policies could likely offset much of this impact at the 250 hour level. This conclusion**

is based on viewing entrant targeting of low hour programs as a convolution of the goal of achieving usable results of training coupled with shorter limitations on educational bursts requiring a time and fund commitment. Keeping total hours moderate is the mitigation of the first concern. Policies that encourage modular certificates for shorter training bursts, and that promote transferability of transcripts between schools address the second issue. Availability of incremental modules would also leverage the continued use of lower-hour certificates by those seeking training for personal growth, adjunct palpation and touch skills for other health-oriented professions, or as volunteer care-givers within their families and communities.

Regulatory agencies and the profession itself need to acknowledge and account for the greater role that colleges, private and public, will be playing in the future. Policies and scope of practice limitations have too often been poor models for the diversity of training in touch, movement, and business practices that colleges can provide. Both in administrative structure and in nature of facilities, colleges are likely to be different than dedicated private schools yet are also positioned to become major contributors to massage educational developments.

**Programs such as those implemented at De Anza College exemplify the derivation of training elements from clearly defined outcomes for the graduates produced. The De Anza College programs also exemplify the creation of training based on a scientific model for the provision of treatment. Having better defined, evidence-based education outcomes for the more treatment-oriented subpractices of massage will increasingly be needed as therapeutic massage extends into health care settings and practitioners increasingly interact with and are referred to by other health care practitioners. A 250 hour training requirement (or longer requirements without well-defined outcomes) does not address the needs and concerns of medical professionals as to referral and facility use. Well-formed guidelines for practitioner and teacher training in advanced subpractices are lacking and sorely needed. Such evidence-based guidelines, with consensus among stakeholders and documentation of deliberations, should largely serve to address medical concerns about inclusion of massage in the health care system. Because of the diversity of subpractices and the diverse interconnectivity of massage knowledge, such guidelines are most effectively created on the organizational level by methods such as those outlined in Appendix C. The work of creating and documenting such outcome-based guidelines is still largely to be done. More attention has heretofore been paid to the form of training requirements than to the outcomes and substance.**

Much research and practical observations also remains to be done and documented of the coupling between the physical, emotional, immunological, neurological, and sociological benefits of providing organized and integrated touch, movement, and sensory awareness facilitation and education to and with clients. As commented on by Maitland (1995), the bodily experience of being human has provided a large and diverse map for massage to explore. Therapeutic massage, not as a unitary set of techniques, but as a diversity of practices mainly united by the intent to benefit clients via some form of organized touch and/or bodily awareness experience, is well suited for the diversity of needs.

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## Appendix A: Validity and Error Analysis of the Entrants per Program Model

In his book *Numerical Methods for Scientists and Engineers*, the late mathematician and computer scientist Richard Hamming stated, "*The purpose of computing is insight, not numbers*". In considering the analysis of entrants per program, we must consider if the treatment is in accord with the data, is no more complex than necessary (Occam's Razor), and provides insights that are otherwise far less apparent and quantifiable. If the model itself is found to be appropriate, we can then consider statistical errors in the estimates from its use. For the person not particularly interested in discussions of model choice and error estimates, this section can be skipped with only a minor loss of continuity.

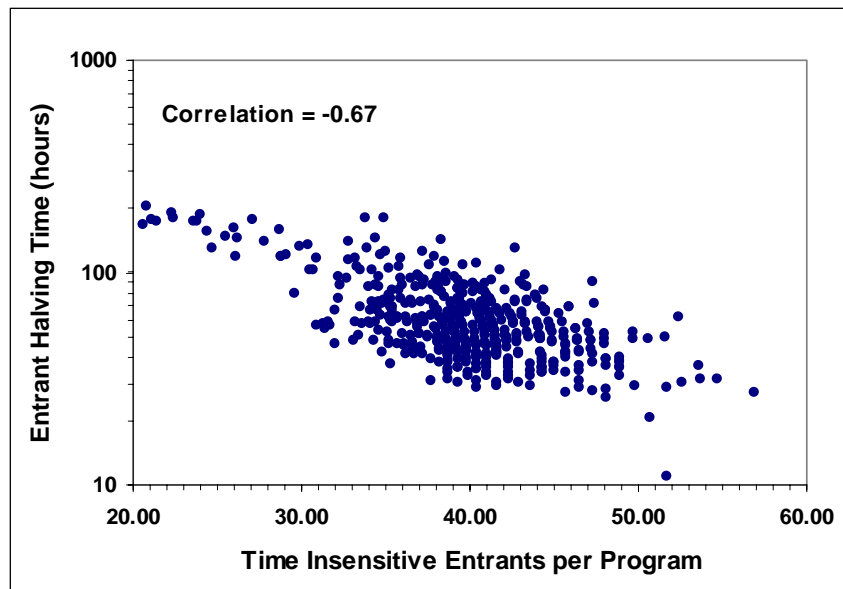
Assuming an underlying model for the entrants per program allowed estimation of the aliased entrants to be obtained and adjusted. The choice of such a model, however, requires care to enable interpretation. The simplest model for the hour dependence of entrants per program would be that it is constant. If that were the case, any observed variation with hours would be on the level of noise, a clear contradiction of what was observed in the data of Figure 5.

Apart from the 300-499 hour range, there is immediately evident a general decrease with increasing hours. The dramatic jump in the entrants per program in the 300-499 hour range sticks out dramatically. Noting the very small number of entry programs in this range prompts either a conclusion that the observations are aliased from the lower hour ranges or that the few programs in this range have some immensely amplified popularity with students. The first assumption was deemed far more likely. This interpretation was also determined to be consistent with the derivation of the original categorization of entrants by hours, this being based on observed training at the time of membership application. Even at this point, consideration of entrants per program provided something not separately apparent in the parent distributions for schools programs and entrants.

With the issue of the 300-499 hour spike resolved, it was still necessary to choose a model for the observed decline in students with hours along with the likely leveling off of this decline by the last hour category. Many naturally occurring phenomena self-organize into a power law distribution. Such a power-law relation would imply, however, that a log-log plot of entrants per program versus program hours would be a straight line, ignoring the 300-499 hour range. Such a plot contradicted this assumption.

The relatively simple assumption that the decrease in a value per hour increase is a constant fraction of the value itself yields an exponential distribution. Such a distribution, could explain the initial decrease, but not that the decrease did not continue toward zero. The observed distribution was most simply explained by an exponential decrease with a second, underlying population that was either constant or much less sensitive to program hours. Since the program and entrant data did not extend out to large numbers of hours, the simpler assumption of a constant base population was made. It is likely, however, that in the real world students would eventually diminish as hours increased unreasonably and that their sensitivity to hours is simply much less than that for the other, hour-sensitive, population.

Such a dual population is common to the world around us -- the sun reddens at sunrise and sunset because blue light is (Rayleigh) scattered by the atmosphere much more strongly than is red light. Thus, as the path through the atmosphere increases when the sun is near horizon, the apparent color of the sun shifts to the red. A similar result is obtained by assuming that some students are much more sensitive to expenditures of time and/or money than others and that



**Figure 10: Correlation between entrants per program insensitive to hours and time of halving for those who do display hour sensitivity.** The distributions were obtained by bootstrap sampling (Efron, 1982) to obtain 500 separate samples of the hour distribution of 215 schools. The sampling was based on the cumulative program hour distribution of Table 4.

an increase in required hours acts as an impediment that filters students at a fixed relative rate. The model fulfills the requirements of being consistent with the observations, sufficiently simple, and capable of providing additional insights. Some additional caveats on range of applicability are in order, however.

The use of an exponential distribution could be taken to imply that programs would continue to increase in popularity as their hours approached zero. This would be an unrealistic conclusion. In all likelihood, a point would be reached in decreasing program hours at which the logistics of getting to a class would exceed the benefits obtained from it. Stephan (2004) has considered a similar situation with population density distributions in cities, deriving a distribution that is exponential at larger distances from the center but peaks and goes to zero as the center is approached. Since there is no discernable evidence of this effect in the entrants per program data, the conclusion is that the 100 hour lower limit is still on the exponential tail of a more general distribution. The same considerations would apply to the "constant" population. Since it is adequate for the current use, we remained with the approximation of assuming an exponential distribution, resulting in the estimations discussed above.

With the dual population exponential model in place, a further consideration was the error in the estimates for the division between the time-sensitive and constant distributions (of entrants per program). Another consideration was the error in the sensitivity of the time-sensitive portion to program hours. We have characterized this sensitivity in terms of the "halving time" — the change in program hours causing the time-sensitive entrants per program to decrease by one half.

Errors in the apportionment and sensitivity estimates were estimated by considering the entrant and school program distributions to be probability distributions. Because the error of the mean obtained in sampling from a distribution decreases inversely to the square-root of the number

of samples, it was likely that the program distribution errors (a sample of 215) were about a factor of ten larger than the errors in the entrants distribution (a sample of 18600). Therefore, only the effects of the program distribution errors were estimated.

Using the cumulative frequency in Table 4 and Figure 4 as a cumulative distribution function (CDF) for probability of program hours, random samples of 215 programs were drawn from the distribution 500 different times. This technique of error estimation is the bootstrap resampling method of Efron (1982). Each of the 500 resulting school distributions was used in the entrants per program analysis discussed above. We estimated an hour affected student "halving time" of 58 hours with 38 hours and 88 hours as the low and high side standard deviations. The distribution of the halving-time appeared to be approximately log-normal, with a geometric standard deviation of 1.51. The hour-sensitive entrants were about 54% with 48% and 60% being the low and high side estimates. Both of the mean values are close to the nominal values of 57 hours and 53%, respectively, used in the initial analysis above. The logarithm of the halving time and the hour-insensitive entrant base were found to be anti-correlated with a coefficient of -0.65. As shown in Figure 10, a larger time-insensitive population correlates with a sensitive population with a shorter halving time. This implies that assuming a large insensitive population and simultaneously assuming a long halving time would result in a very unlikely estimate of program change impacts.



## Appendix B: De Anza Massage Program Core Competencies.

This appendix documents the breakdown of core teaching elements of the De Anza Community College Certificate of Achievement. Elements have been placed under the primary outcome that they target and impact. Each outcome includes an estimate of its share of the 504 hours of the Certificate of Achievement. The hour estimates include the repetition and diversity of presentation methods used to enhance retention and to address differences in learning styles. The program implements outcomes felt important by the De Anza College Massage Advisory Committee for independent provision of scientifically-based therapeutic massage treatments over a relatively diverse range of clinical situations and with potential interaction with other health care practitioners.

### **Plan and organize an effective massage session.**

- Anatomy (skeletal, muscular, cardiovascular, lymphatic, endocrine, nervous, integumentary and digestive systems)
- Physiology: General human physiology and physiology that pertains to massage( the healing process, acute and chronic inflammation, reflex and mechanical effects of massage strokes, effects of ice/heat and other modalities, sliding filament theory, delayed muscle soreness)
- Contraindications, cautions, pathology, and endangerment sites

### **Perform a massage for therapeutic benefit.**

- Kinesthetic awareness and palpation skills
- Relaxation massage sequence
- Chair massage
- Pre and post event sport massage
- Restorative massage
- Assessment of range of motion (ROM) and normal and atypical posture
- Working with fascial layers, trigger points, referred pain, adhesions, hypertonicities, and the lymphatic system.

### **Develop and implement a self-care strategy for injury prevention.**

- Practitioner body mechanics & self-care
- Emotional grounding

### **Develop and maintain successful ethical relationships with clients and other health care professionals.**

- Professional communication skills
- Ethics- boundaries, framework
- Proper draping, bolstering and hygiene

- Psychology of the client (emotional releases, transference, counter-transference and projection)

### **Demonstrate a depth of knowledge, skills, and cognitive understanding to be able to practice in a variety of settings as required or desired.**

- Postural realignment exercises
- Benefits of aerobic and stretching exercise
- Relaxation training/ muscular and autogenic training/Visual Imagery and diaphragmatic breathing.
- Direct and Indirect myofascial Release
- Strain/counter-strain (positional release)
- Biomechanics/kinesiology for normal and abnormal movement including sports.
- Assessment of visceral vs. myofascial pain
- Trigger point therapies
- Scar tissue release
- Familiarity with Asian body therapies (shiatsu, acupressure) including the five element system and meridians of the body

### **Develop a strategy for gaining employment and/or a private practice.**

- Business practice and experience

### **Maintain accurate client documentation and financial records.**

- History taking and chart notes
- Insurance reimbursement protocols
- Mastery of appointment scheduling and financial software

### **Identify opportunities for professional growth**

- Taking continuing education workshops
- Networking with Peers
- Participating in professional organizations

## Appendix C: Guidelines for Creating Guidelines

Various organizations in medical education have been increasingly been defining the needs for specific training in terms of the outcome skills, knowledge, and abilities of the practitioners produced (ACGME, 2001; Harden et al., 1999; Wojtczak and Schwarz, 2000). These outcomes should also be coupled with appropriate means for their assessment (Epstein and Hundert, 2002; Shumway and Harden, 2003). Outcomes can include not only technical skills, but also interpersonal competencies (Epstein and Hundert, 2002; Yedidia et al., 2003).

Such methods apply best to massage therapy, when applied to subpractices well-defined in techniques and setting. Table 11 suggests a number of attributes likely to be of high value in creating outcome-based guidelines for training.

**Table 11: Attributes of guidelines for effective practice.** From Grant(2003a), as adapted from guidelines for creating clinical practice guidelines presented in Field and Lohr (1990).

Attribute	Discussion
<b>Validity</b>	Compliance with a guideline should clearly improve the effectiveness of early practice by those entering a subpractice of massage.
<b>Reliability/Reproducibility</b>	The evidence and process used should lead to essentially the same guidelines if produced by multiple independent groups of experts.
<b>Applicability</b>	Guidelines should be specific to the needs of each subpractice.
<b>Flexibility</b>	Guidelines should identify expected exceptions to the recommendations.
<b>Clarity</b>	Guidelines should use unambiguous language, define terms precisely, and use logical, easy-to-follow modes of presentation.
<b>Multidisciplinary process</b>	Guidelines should be developed by a process that includes participation by representatives of key affected groups.
<b>Scheduled Review</b>	Guidelines should include planned reviews to review new field experience or changing professional consensus.
<b>Documentation</b>	The procedures followed in developing guidelines, the participants involved, the evidence used, the assumptions and rationales accepted, and the analytic methods employed should be meticulously documented and described.