



Healthcare Laboratory  
Workforce Initiative

## **California's Other Healthcare Crisis**

### *The Clinical Laboratory Workforce Shortage*

California's healthcare system faces many serious threats – dramatic cuts to Medicare and Medi-Cal reimbursement, the crowding of emergency rooms, and the well-publicized shortage of nurses. But another threat has gone largely unnoticed by the public and even by many people who work in healthcare: the critical shortage of medical laboratory professionals.

The shortage of laboratory science workers is one of the most pressing workforce issues facing hospitals today. Delays in diagnosis and treatment caused by the shortage threaten the quality and timeliness of patient care. The scarcity of needed laboratory professionals increases costs to hospitals for recruitment and may even result in additional losses associated with sending tests out.

In 2007 the Healthcare Laboratory Workforce Initiative (HLWI) surveyed California hospitals about the shortage, its impact and how they are coping. More than 140 hospitals responded to the survey. Our findings, along with relevant national and statewide data from other sources, are presented below.

### **The Extent of the Shortage**

The laboratory workforce shortage is persistent and severe.

For years the American Society for Clinical Pathology's (ASCP) annual Wage and Vacancy Survey has revealed alarming shortages of laboratory personnel.<sup>1</sup> Between 1999 and 2001, the number of clinical laboratory scientists (CLSs) in California decreased from 36,000 to 26,000.<sup>2</sup> The 2002 ACSP survey showed vacancy rates of seven percent nationally, ranging from six percent in the far west to more than 10 percent in the southwest.<sup>3</sup> Vacancy rates were lowest in hospitals with more than 500 beds and highest (over 10 percent) in rural hospitals and those with fewer than 100 beds.

Today, California ranks among the seven lowest states in the ratio of CLSs per 100,000 population.<sup>4</sup>

On the HLWI survey, California hospitals reported an average of three Clinical Laboratory Scientist (CLS) vacancies in the previous year and predicted that by 2010 the average number of CLS vacancies per hospital would increase to four. This represents an approximate vacancy rate of 30% if the problem is not addressed. The survey also revealed that it takes an average of 6 months for hospitals to fill a CLS vacancy.

While these numbers appear small, in fact their impact on patient care and hospital operations is great. The average age of a CLS in California is above 50.<sup>5</sup> At a time when our population is aging and the need for clinical laboratory services is increasing, the current hospital laboratory workforce is preparing to retire. And, we are simply not prepared for this clash.

### **Reasons for the Shortage**

A number of factors have contributed to the difficulty in recruiting and retaining hospital laboratory staff:

- Whereas the nursing field is huge and visible, laboratory professionals work primarily behind the scenes. The resultant lack of public understanding and recognition of what lab workers do mean that fewer young people are aware of hospital laboratory careers.
- The growth of industries such as biotech and laboratory manufacturers – which typically pay better salaries – has increased the demand for skilled workers.
- A lack of career development opportunities has discouraged potential recruits and made it difficult to retain qualified professionals.

The biggest problem, however, is the small number of accredited education programs in California and their lack of capacity to train large numbers of students.

Today there are just thirteen CLS training programs in California – four academic programs and nine hospital-based – with class sizes of two to 30 students.<sup>6</sup> In 2007, the total number of CLS graduates was 119. In 2008, the number of graduates is expected to increase to 125.

By comparison, Texas, with less than two-thirds the population of California, had twice as many programs and graduated five times more students. Michigan, at less than a third the population of California, had 12 programs and graduated three times more students.<sup>7</sup>

In 2002 California passed legislation to introduce licensure for Medical Laboratory Technicians (MLTs), but did not actually begin to issue licenses until the end of last year. As a result, there are only two approved MLT training programs in the state and the current number of MLT graduates is very small. This two year associate degree program also requires students to be affiliated with an onsite training program in a hospital.

## Impact of the Shortage

While it is difficult to quantify the impact of the shortage on the quality of patient care, certain problems have been reported – including testing delays, mislabeling of specimens, and conducting the wrong tests.<sup>8</sup> Whether these errors result directly from a lack of full staffing has not been documented. Nevertheless, it is clear that a staffing shortage creates changes in the testing process, sometimes with negative consequences.

According to the HLWI survey, there are regional variations in how California hospitals are coping with the shortage (see Table 1). The survey’s sample numbers are low when the data are stratified by region, but it appears that more Northern California and San Diego hospitals are limiting services and sending out tests due to limited staffing. As licensing of medical laboratory technicians (MLTs) ramps up in the state, many California hospitals are considering incorporating MLTs in their laboratory personnel.

**Table 1. Regional Variations of Shortage Impact**

	(N=137)		(N=136)		(N=136)	
	Limiting Services		Sending out tests		Planning to use MLTs	
	#	%	#	%	#	%
<b>Statewide</b>	<b>25</b>	<b>18%</b>	<b>27</b>	<b>20%</b>	<b>85</b>	<b>63%</b>
<i><b>By Region</b></i>						
Hospital Association of Southern California	6	24%	5	19%	31	36%
Hospital Council of Northern & Central California	17	68%	18	67%	46	54%
Hospital Association of San Diego and Imperial Counties	2	8%	4	15%	8	9%

## Future Demand

California’s population is growing larger, older and increasingly diverse. These factors will increase demand for all types of health care services, including laboratory services.

According to a recent report, “Closing the Health Workforce Gap in California: The Education Imperative,” the need for allied health workers in the state is expected to increase by 26 percent in less than a decade.<sup>9</sup> The report further breaks down the allied health field into the 15 most at-risk professions. Based on data for projected employment demand and recent graduation, the gap for CLSs is at the top of the list—with a projected shortfall of 559 percent in the next decade.

Nationally, only two new CLSs are entering the field for every seven facing retirement.<sup>10</sup> The Bureau of Labor Statistics projects that by 2012 the country will need 69,000 more CLSs and 68,000 more MLTs than in 2002 – a total of 13,700 new professionals each year.<sup>11</sup> If our education programs continue producing only 4,500 graduates annually, we will face a 9,200 shortfall each year.

## What Can Hospitals Do?

By offering clinical training sites, hospitals have the opportunity to partner with educational programs and to “grow their own” staff. Providing training with the intention of hiring full-time can be efficient in terms of both lowering recruitment costs and shortening the learning curve for new workers.

According to the HLWI survey, hospitals that provide CLS training report retaining 50-100 percent of trainees. Yet, only 21% of hospitals actually have an existing relationship with a university-based CLS training program.

Table 2 shows regional variations in hospital training relationships as reported on the HLWI survey. Even more clearly, the table shows hospital interest in bringing in more students and possibly sharing either CLS or MLT trainees, a welcome trend.

**Table 2. Training Opportunities for CLSs**

	(N=135)		(N=135)		(N=126)	
	Lab has relationship with university based program		Lab operates own CLS training program		Can share a trainee and provide training in at least 1 discipline	
	#	%	#	%	#	%
<b>Statewide</b>	<b>28</b>	<b>21%</b>	<b>11</b>	<b>8%</b>	<b>83</b>	<b>66%</b>
<i><b>By Region</b></i>						
Hospital Association of Southern California	6	21%	4	36%	21	25%
Hospital Council of Northern & Central California	21	75%	7	64%	53	64%
Hospital Association of San Diego and Imperial Counties	1	4%	0	0%	9	11%

The addition of MLTs into laboratories creates a career ladder from phlebotomists to MLTs to CLSs, and even CLS instructors. At 75-80 percent of the starting salary for a CLS, MLTs can perform moderately complex testing, report patient test results, and supervise lower level laboratory workers.

According to the HLWI survey, nearly 90 percent of California hospitals plan to use MLTs. Yet, as Table 3 shows, very few hospitals have a relationship with a community college-based MLT program because few such programs exist.

**Table 3. Training Opportunities for MLTs**

	(N=134) Lab has relationship with community college MLT program		(N=123) Lab can absorb more MLT trainees	
	#	%	#	%
<b>Statewide</b>	<b>9</b>	<b>7%</b>	<b>52</b>	<b>42%</b>
<b><i>By Region</i></b>				
Hospital Association of Southern California	0	0%	9	17%
Hospital Council of Northern & Central California	7	78%	36	69%
Hospital Association of San Diego and Imperial Counties	2	22%	7	13%

Although interested in absorbing more MLT trainees, hospitals also report significant barriers such as budget constraints, existing staffing problems that preclude oversight, no training program and space limitations. As MLT programs are started, hospitals must work to overcome these barriers and take on MLT trainees too.

**Enhancing the Stature of Laboratory Careers**

Efforts are under way in California and nationally to support and promote the laboratory worker profession. Scholarship programs, workshops for high school teachers and accreditation of online educational programs are all part of the mix. In addition, the Abbott Fund is launching an awareness-building initiative targeted at high school students.<sup>12</sup>

No one solution is the answer to the laboratory workforce shortage. Hospitals must do their part by:

- Working with community colleges and universities to support and develop new CLS and MLT training programs;
- Educating our state legislature on the need for more state funding for training; and
- Helping to increase public awareness and interest in laboratory science as a career option.

*Attached are the complete statewide results of the HLWI Survey. For regional breakdowns, questions, or more information about this subject, please contact Rebecca Rozen, Regional Vice President, Hospital Council, at (925) 746-1550 or [rrozen@hospitalcouncil.net](mailto:rrozen@hospitalcouncil.net).*

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<sup>1</sup> U.S. Department of Health and Human Services, “The Clinical Laboratory Workforce: The Changing Picture of Supply, Demand, Education, and Practice.” July 2005.  
<http://bhpr.hrsa.gov/healthworkforce/reports/clinical/default.htm>.

<sup>2</sup> University of California, San Francisco, The Center for the Health Professions. Linder and Chapman: “The Clinical Laboratory Workforce in California,” 2003.

<sup>3</sup> University of California, San Francisco, and MORPACE International: Ward-Cook and Chapman: “2002 Wage and Vacancy Survey of Medical Laboratories” as reported in *Laboratory Medicine*, Volume 34, Number 10, October, 2003.

<sup>4</sup> U.S. Department of Health and Human Services, “The Clinical Laboratory Workforce: The Changing Picture of Supply, Demand, Education, and Practice.” July 2005.  
<http://bhpr.hrsa.gov/healthworkforce/reports/clinical/default.htm>.

<sup>5</sup> *Clinical Leadership & Management Review*: Epner: “Laboratory Workforce Shortage: Implications for the Future,” Volume 21, Issue 6, 2007.

<sup>6</sup> UCSF Center for the Health Professions: Health Workforce Tracking Collaborative: “Clinical Laboratory Science (Medical Technology), April 2007.

<sup>7</sup> University of California, San Francisco, The Center for the Health Professions. Linder and Chapman: “The Clinical Laboratory Workforce in California,” 2003.

<sup>8</sup> U.S. Department of Health and Human Services, “The Clinical Laboratory Workforce: The Changing Picture of Supply, Demand, Education, and Practice.” July 2005.  
<http://bhpr.hrsa.gov/healthworkforce/reports/clinical/default.htm>.

<sup>9</sup> The Campaign for College Opportunity: “Closing the Health Workforce Gap in California: The Education Imperative,” November 2007.

<sup>10</sup> U.S. Department of Health and Human Services, “The Clinical Laboratory Workforce: The Changing Picture of Supply, Demand, Education, and Practice.” July 2005.  
<http://bhpr.hrsa.gov/healthworkforce/reports/clinical/default.htm>.

<sup>11</sup> Passiment, E: “Update on the Laboratory Workforce Shortage Crisis.” *Medical Laboratory Observer*, 2006.

<sup>12</sup> *Clinical Leadership & Management Review*: Epner: “Laboratory Workforce Shortage: Implications for the Future,” Volume 21, Issue 6, 2007.