9-2013

Kentucky's Growing Need for Medical Laboratory Practitioners

Michelle Butina
University of Kentucky

Frances J. Feltner
University of Kentucky, frances.feltner@uky.edu

Kentucky's Growing Need for Medical Laboratory Practitioners

Presenters: Michelle Butina PhD MLS (ASCP)CM and Fran Feltner DNP RN
University of Kentucky
Center of Excellence in Rural Health
Hazard, KY

UNIVERSITY OF KENTUCKY
CENTER OF EXCELLENCE IN RURAL HEALTH

Center of Excellence in Rural Health

Abstract

Context: The U.S. Bureau of Labor Statistics predicts a 15% growth in medical laboratory science (MLS, formerly clinical laboratory science and medical technology) graduates from 2010 to 2020. Kentucky is underserved and has a maldistribution of medical laboratory practitioners, composed of scientists and technicians, with rural communities more likely to be underserved by MLS graduates.[1] Implementation of the Affordable Care Act (ACA) is likely to increase demand for medical laboratory practitioners because of the ACA's preventative health focus and the expansion of access to healthcare. An increase in the aging population will also contribute to a greater need to diagnose medical conditions such as cancer or type 2 diabetes using laboratory procedures.
Objective: Estimate the need for graduates from medical laboratory science/technician programs and evaluate a potential educational model centered at the UK Center for Excellence in Rural Health that would build on *in-place education* and guide medical laboratory science graduates to underserved rural communities.
Design: Comparative analysis of Kentucky's population ratio of medical laboratory science/technician graduates with its seven border states. Data are from the Bureau of Labor Statistics, Kentucky Labor Market Information system, Kentucky State Data Center.
Participants: University of Kentucky Center of Excellence in Rural Health and University of Kentucky College of Health Sciences.
Main Outcome Measure(s): Estimates of need for MLS graduates.
Results: Kentucky has a current need of 461 medical laboratory scientists and 1,067 medical laboratory technicians when compared to the seven states that border Kentucky.
Conclusions: The Center of Excellence in Rural Health can take the lead in the development of a cooperative model that educates and trains MLS students through an associate degree program (e.g., associate of science) and prepares them for beginning a baccalaureate program offered at the Center of Excellence in Rural Health. This program can help meet a substantial need for MLS graduates and offer opportunities for new careers for persons displaced through downturns in the coal industry and other labor dislocations in Eastern Kentucky.

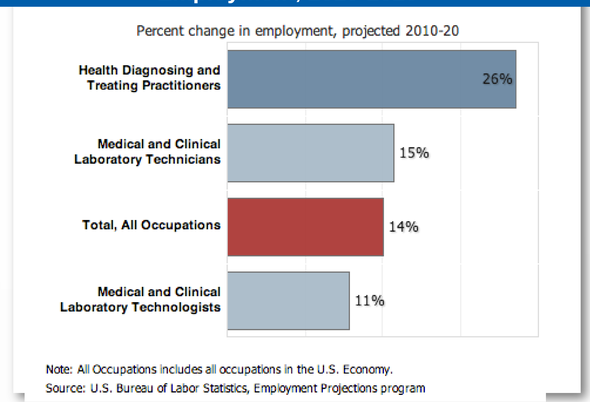
[1]Medical laboratory scientists/technologists typically have a bachelor's degree from a MLS program; whereas medical laboratory technicians typically have an associate's degree from a MLT program.

Key Job Characteristics of Medical Laboratory Scientists

- Perform, evaluate, and assure accuracy and validity of laboratory testing.
- Found in various settings including: healthcare, public health, research, environment, agriculture, veterinary medicine, accreditation agencies, administration and management, consulting, education, industry and sales (Source: Kotlarz, VT; 2001 and 2011 National Assessment).
- Included in Top 20 best jobs and #3 in the medical occupation category (Wall Street Journal, 2009).
- U.S. Bureau of Labor Statistics projects 4,500 new MLS graduates needed each year from 2008 to 2018. This figure is double the number of newly certified graduates each year. (U.S. Bureau of Labor Statistics 2010-2012 ed.)
- High demand – 7.9% national average vacancy rate.
- Earning Potential: Competitive salaries for bachelor's level degree: (median for 2011 = $57,010 - U.S. Department of Labor); National average = $58,120 ($27.94/hour)

UK CERH MLS student

Projected National Percent Change in Medical Laboratory Practitioner Employment, 2010-2020



National Employment Projections for Medical Laboratory Practitioners, 2010-2020

Occupational Title	SOC Code	Employment, 2010	Projected Employment, 2020	Change, 2010-20	
				Percent	Numeric
Clinical Laboratory Technologists and Technicians	29-2010	330,600	373,500	13	42,900
Medical and Clinical Laboratory Technologists	29-2011	169,400	188,600	11	19,200
Medical and Clinical Laboratory Technicians	29-2012	161,200	184,900	15	23,800

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections program

Estimates of Additional Medical Laboratory Practitioner Positions to Meet Kentucky's Needs

	Positions/1000 Population		Need	
MLS Role	Border States	Kentucky	2012	2020
Medical/Clinical Laboratory Technologist	0.52	0.42	439	461
Medical/Clinical Laboratory Technician	0.60	0.37	1017	1067

Data Source: Kentucky Labor Market Information
http://www.kylmi.ky.gov/default.asp

Longterm Medical Laboratory Practitioner Employment Projections for Kentucky

Occupation	2010 Estimated Employment	2020 Projected Employment	Total 2010-2020 Employment Change	Annual Avg. Percent Change
Medical and Clinical Laboratory Technologists	1,920	2,040	120	0.6%
Medical and Clinical Laboratory Technicians	1,630	1,800	170	1.0%
All Occupations	1,895,230	2,130,660	235,430	1.2%

Discussion

As with physicians, certified diabetes educators, and other health professions, the State's rural communities are even more likely to be underserved by graduates of medical laboratory science/technician programs. It is estimated based on current ratios that Kentucky will need at least an additional 461 medical laboratory scientists and 1,067 medical laboratory technicians by the year 2020. Kentucky's need for medical laboratory practitioners could be even greater as a result of an estimated 630 thousand persons who will gain access to health care under the Affordable Care Act, the need for more healthcare because of the State's aging population, and higher illness rates and severe health disparities among the residents of Kentucky's 54 Appalachian counties requiring more laboratory testing.

The job forecast for MLS graduates is very positive. The Bureau of Labor Statistics cites, "Employment of medical laboratory scientists is expected to grow by 15 percent between 2010 and 2020, faster than the average for all occupations. The volume of laboratory tests continues to increase with both population growth and the development of new types of tests." This creates a wonderful opportunity for educating persons in Appalachian Kentucky who have lost their jobs because of downturns in the coal industry and those who have been prevented from pursuing a college education because of social and economic disparities. In addition this positive workforce outlook offers the possibility of preparing graduates to meet the tremendous need for medical laboratory practitioners.

Conclusion

Community colleges have the potential to cost-effectively educate MLS students through an associate degree program (e.g., associate of science) and prepare them for beginning a baccalaureate program offered at the Center of Excellence in Rural Health. This program can help meet the substantial state-wide need for MLS graduates, increase the supply in high-need rural communities, and offer opportunities for new careers for persons displaced through downturns in the coal industry in Kentucky's Appalachian counties. Further such programs can create opportunities for first-generation college students and infuse the MLS health profession with talented individuals from underrepresented cultural, economic and social backgrounds.

The health service areas for many of our rural communities, especially our 54 Appalachian counties, are characterized by geographic barriers such as poor road conditions and mountainous topography, making commuting long distances to attend college classes a challenge. Many of these areas do not have interstate access and public transportation except for a few regions. Distance from college classes gives rise to major financial and psychological barriers for many wanting to pursue a bachelor's degree in MLS.

The University of Kentucky is a public land grant university dedicated to improving people's lives through excellence in education, research and creative work, service and healthcare. As Kentucky's flagship institution, the University plays a critical leadership role by promoting diversity, inclusion, economic development and human well-being. The University of Kentucky Center of Excellence in Rural Health (CERH), was established in 1990 by legislative mandate. The UK CERH and its 150-member staff act as conduits between rural needs and university resources. The UK CERH embodies a novel approach to improving rural communities by simultaneously addressing education, health and economic issues.

UK's College of Health Sciences (CHS) prepares students for professions such as physical therapy, athletic training, speech and communication disorders, and medical laboratory science. The UK Medical Laboratory Science Program began in 1933 and was one of the first programs in the United States. Graduates of the UK MLS Program are employed in laboratory and non-laboratory settings throughout the U.S. and internationally.

While the model being proposed will prepare more MLS graduates to compete in a growing national market for medical laboratory scientists, it is likely to produce a greater retention rate for graduates who wish to live and work in the rural communities where they were born and reared. This could have a major benefit for reducing rural shortages of medical laboratory practitioners.