Minnesota Laboratory Professionals Workforce Summit
Summary Report

On Friday, September 25, 2015, 91 individuals convened at CentraCare's educational center to discuss clinical education needs for medical laboratory scientists and medical laboratory technicians in Minnesota's laboratory education programs. The event was planned by members of the HealthForce Minnesota/HEIP's Clinical Laboratory Workgroup. The Summit was the 4th statewide convening. Attendees included laboratory managers, laboratory educators, academic deans, workforce development/human resource leaders, and state agencies. The agenda for the event is provided as Attachment A.

Background/Presentations
The keynote presentation set the stage for the day-long meeting with a focus on the need for laboratorians across the country and an innovative use of simulation as one strategy to meet the need for adequate clinical education. Dr. Laurie Bjerkle, M.Ed., MLS(ASCP)CM, a former Minnesota laboratory educator who is now the Faculty Chair/Program Director, Clinical Laboratory Science, at DeVry Institute in Phoenix, AZ, gave the keynote presentation via ITV. Her presentation is provided as Attachment B.

Following the keynote, a series of presentations provided information about the current status of supply and demand in Minnesota (Attachment C), the use of simulation in Minnesota, and the financial return on investment associated with serving as a clinical site (Attachment D). Minnesota's laboratory education programs were surveyed prior to the Summit – key survey findings included:

- 5 of 8 MLT programs have reduced enrollment or have not increased enrollment due to clinical capacity concerns; MLS programs reported similar limits/reductions in enrollment
- 5 of 8 MLT programs have students who did not graduate on time due to lack of clinical site placement; MLS programs have had 1-3 students similarly delayed
- The areas most limited in clinical capacity are in microbiology and blood bank

The reasons for the current clinical capacity bottleneck include:

- Program expansion over the past 10 years in response to workforce needs
- Increased financial pressure at hospitals, health systems, and clinics
- Implementation of other changes in the laboratory environment such as LEAN and centralized testing/consolidated laboratories

While Minnesota's MLT and MLS programs are concerned about clinical capacity and making decisions to limit enrollment, the workforce need for laboratorians remains high. The Bureau of Labor Statistics projects growth in both MLT and MLS demand to be 14% and 22%, respectively, from 2012-2022. In order to meet the workforce demands, Minnesota's MLT and MLS programs will need to find new approaches to ensuring that graduates have the clinical skills and education that employers require. Innovation/changes could include:

- Shortening clinical education time
- Use of simulation for a portion or all of the clinical education

- Reframing the entry-level expectations of employers
- Utilization of additional clinical sites
- Expansion of current clinical sites

Simulation has been piloted in Minnesota through a Department of Labor grant received by St. Paul College in collaboration with Allina Health Services. This pilot utilized simulation for approximately one-half of MLT students' microbiology and blood bank clinicals. Outcomes of the pilot were favorable with students, faculty, and Allina staff reporting positive outcomes such as increased comfort with the clinical area, improved learning, and a more standardized student experience. Importantly, the pilot enabled Allina to increase the number of students it accepted for microbiology and blood bank clinicals.

Recognizing that the provision of clinical education does have an impact on laboratory productivity (which can lead to an organization limiting its participation as a clinical site), an analysis of the financial impact was presented. Using what is considered to be a high estimate of impact on productivity (30% impact on the preceptor productivity for an MLT student and 50% for an MLS student), the analysis found that if clinical sites hire just 1 of every 3 MLT students and 1 of every 6 MLS students, the organization "breaks even" financially. This is seen as a powerful argument in support of serving as a clinical site.

Taken together, these presentations clearly illustrated the current and continuing need for laboratorians as well as the need for solutions to the clinical capacity constraints.

Breakout Sessions/Report Back

Following the plenary keynote and presentations, Summit attendees were asked to participate in two of four breakout session topics:

1) Taking students – challenges, ideas, and solutions
2) Simulation
3) Bottom line impact (ROI) of serving as a clinical site
4) Future of laboratory practice and education

Each breakout group had a facilitator and a recorder. Summaries from each breakout topic are found below.

<u>Taking Students</u>

The questions posed for participants to address included:

- What are the benefits/gains from taking students in the lab?
- What are the barriers to taking students and how do we overcome them?
- What is the impact on productivity?
- What is the impact on staff that teaches students?
- What incentives for staff can be given?

Attendees identified many benefits to serving as a clinical site for students. These included:

- Providing a "prolonged interview" allowing lab managers to evaluate students' potential to become an employee
- Keeping staff current with laboratory advances and practices

- Providing a rewarding experience for lab staff who enjoy/appreciate having interactions with students
- Reducing onboarding time when a student converts to an employee
- Improving retention with students who become employees since they have a good understanding/knowledge of the laboratory's culture and personnel

Attendees also identified many barriers to serving as a clinical site and discussed methods of overcoming or minimizing these barriers. Discussion included:

- Impact on productivity that results from serving as a clinical site for students. Laboratory managers and staff believe it is important that laboratory educators are aware of and acknowledge this impact. To counter this barrier, a separate breakout session was held which focused on the return on investment that can result from serving as a clinical site.
- Lack of physical space to accommodate student/s.
- Lack of staff to accommodate student/s. As healthcare providers have increasingly tight financial margins, there is less capacity to take students. This is related to the impact on productivity, as well.
- Laboratory staff who do not want to participate in student education. These staff may be concerned about not being qualified to support student learning. In this instance, it is important to assure staff that their role is to simply integrate the student into the laboratory and not to teach specific content. Staff may believe that student education should not be part of their job. For these staff, establishing a laboratory – and organization - culture that supports education is important. It was mentioned that the culture of the laboratory in general is important in helping staff maintain a positive attitude concerning taking students, because the students are the future of the laboratory. Attendees discussed having job descriptions which include serving as preceptors.
- Limited test volume may lead a laboratory to believe it cannot serve as a clinical site. In most cases, the MLS and MLT programs can find ways to work with any size lab.

In addition to maximizing the positives and minimizing the negatives, attendees brainstormed incentives for serving as a clinical site/preceptor. These included:

- Using a "tool kit" complete with standardized checklists, standards and expectations, how to address students not meeting standards, evaluations
- Providing preceptor training
- Providing monetary rewards for completing preceptor training
- Providing copies of the current textbooks used
- Providing CEUs to preceptors.

Much of healthcare is moving to competency-based curriculum which is consistent with the approach of the National Accreditation Association for Clinical Laboratory Science (NAACLS). In light of this and the shortage of clinical sites, attendees discussed whether or not students need a clinical experience. Would employers be satisfied with a new graduate who had not had the typical clinical experiences? This led to a deeper discussion about the value of clinical experiences to students which include:

- Experience working in a laboratory setting with a wide variety of people, including staff who might be difficult to work with
- Experiencing the culture of the laboratory
- "Real life" laboratory workflow, prioritization, and problem solving

Alternative models related to simulation (discussed more fully below), apprenticeship, and residency were discussed as possible alternatives.

Simulation

Over a number of years, the use of simulation as a component of the clinical experience has been part of numerous conversations among Minnesota educators and industry partners. Following the positive outcomes of a DOL grant simulation pilot study, efforts to create a sustainable statewide simulation model ensued but with little forward progress. At the Summit's Simulation breakout session, attendees were asked for feedback regarding using simulation as a viable alternative to increasing student clinical experience capacity. The overall response from attendees was very positive.

Attendees identified six models of simulation that were discussed during the breakout sessions:

- A hospital-based MLS program at Sanford Hospital in Fargo has been using a simulated experience for about one year for the purpose of increasing student rotations and easing the burden on the bench staff. The program was able to increase the number of experiences provided from 10 to 11 students with hopes of increasing the numbers in the future. Their model involves a half-day of simulation with lectures in the afternoons. Occasionally a full-day of simulation was possible. Simulated rotations for six students at a time occurred over three weeks for microbiology and two weeks for transfusion medicine. Following the simulated experience the students completed a nine week microbiology rotation and a seven week transfusion medicine rotation in the clinical laboratory setting.
- Winona University's MLS completion program incorporates simulation with two days a week for three weeks followed by a one month clinical rotation. The didactic courses occurred on the non-simulation days. Specimens for the simulation were acquired from a hospital. The students used SOPs to complete the work and to enter the results into an LIS. The simulated experience developed critical thinking and multi-tasking skills.
- As several clinical sites do not have a microbiology rotation, UND funded the development and use of simulation to replace the entire microbiology clinical experience. Simulation involves five hours per day for 3 weeks. The program hired an MLS from an area hospital to develop and teach the simulation curriculum. Students worked independently utilizing SOPs. Cultures of

various types were added on incrementally each week. As part of the simulation, students toured an area hospital microbiology department.

- MLT programs for whom AllinaHealth provided clinical rotations (North Hennepin Community College, Saint Paul College, South Central College, Argosy University) also used a form of Transfusion Medicine and Microbiology simulation that was originally grant funded. In this model, one person was designated as a preceptor with a maximum of 6 students at a time.
- Allina Central Laboratories are providing one week of microbiology simulation. More recently, a transfusion medicine simulation was created to ease the burden on bench staff. Overall, it was stated that students after simulation were better prepared for the remainder of their transfusion medicine rotation. The site has talked of using this simulation model as employee training in the future.
- SDSU provides a simulated experience that encompasses all areas of the laboratory. All the faculty work together to organize a six-hour, three-day simulated experience for 20 students. Over 400 specimens are gathered and distributed among 20 students. As the students work on their specimens, faculty attempt to mimic the real world laboratory by interjecting 'stats' which further developed their multitasking skills.

There was additional discussion regarding making the MN simulation pilot capable of serving the entire state. The goal of this project was to create a regional or state wide model led by an overall steering committee that provide a standardized simulated experience while meeting the individual regions' needs. The next decision would be to determine who the simulation would serve: MLT, MLS, or both? Successful articulation of this project would require additional support from the MLT or MLS schools, hospital administrators, educators, legislature, and laboratory personnel.

Barriers to developing a regional or statewide model include the lack of standardized clinical experience requirements and expectations, funding, staffing, legislative support, and C-Suite support. Other barriers to overcome would be to determine who would own and house the project.

Benefits of simulation included standardization of the clinical experience, bridging the learning between the classroom and the clinical experience, easing the workload and burden on clinical site educators, increasing student clinical capacity, empowering students as 'doers' and not just observers, providing a safe environment for students to perform work and build confidence, and ensuring a strong foundational experience to each student. Simulation would require educators from the program and clinical site to redefine and repurpose the clinical rotation.

Creating a sustainable clinical experience model was supported by all attendees. Going forward, it is important to obtain additional buy-in from the C-suite, MHA, and industry partners. Further exploration is needed regarding legislative initiatives and funding options such as additional student fees or other healthcare facility funding options. Although attendees supported a model that addressed the bottleneck areas of transfusion medicine and microbiology, the potential for expansion was also discussed. During the development of the model, it is essential to clearly identify the clinical site expectations and to develop a model that would adapt to technology changes. More discussion is needed regarding the distribution of student rotations throughout the year, the development or use of SOP's, as well as other organizational logistics.

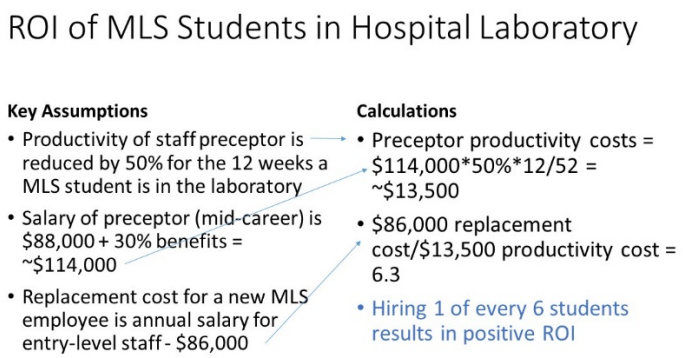
Return on Investment

Over the course of the last decade, the HFMN Clinical Laboratory Workgroup developed a "Return on Investment" (ROI) model to illustrate the clinical site's financial benefits associated with serving as a clinical site. The ROI powerpoint (attached) walks through the assumptions and calculations and allows for customization. In short, utilizing key assumptions related to salary and wages and productivity impact on the student's preceptor, clinical sites can calculate the minimum conversion to hire ratio required to break-even financially.

Data from the American Society of Clinical Pathology indicate future workforce challenges for the clinical laboratory:

- Increased utilization – new tests & new methods
- 46% of labs report 3-6 months to fill vacancies
- Median age is 48 years
- ~25% workforce will retire within 10 years
- Only 1 laboratorian will enter the field for every 3 that plan to retire

Using conservative estimates of impact on productivity, replacement costs associated with turnover, and conversation to hire of students to employees, clinical sites can demonstrate a positive return on investment when hiring 1 of 3 MLT students and 1 of 6 MLS students. A streamlined example of this analysis and key assumptions is shown below:



Similar calculations can be made for hiring MLS students in clinics and hiring MLT students in clinics and hospitals. Assumptions can also be customized for the individual employer to reflect their hiring scale, human resource replacement cost, productivity impact, and length of time in clinicals.

In addition to understanding the financial benefits of taking students, other benefits of taking students were identified including:

- As students become proficient, they add efficiency to productivity
- Keep staff up to date on Standard Operating Procedures (SOPs) and "on their toes"
- Shorter onboarding process for students who become employees could also factor into the equation

There was some discussion about whether the ROI model works for smaller facilities who have less staff and, therefore, would hire less frequently. The model is proportional and can be used to reflect ROI in smaller laboratories. For smaller facilities, mentoring with larger facilities was seen as a way to lessen the demands of taking students.

Future of Laboratory Education and Practice

Recognizing that the healthcare landscape is in a constant state of change, attendees discussed what the future of laboratory education and practice might look like. New approaches, concerns/issues, and future direction were subcategories of this breakout session.

With regard to new approaches, attendees identified several trends impacting the laboratory. These include:

- Lab on every floor
- Participation in Quality Management committees
- Patient education; provider education
- Addition of a Doctorate in Clinical Laboratory Science and demand for that role
- Emphasis on customer service leading to the laboratory serving as a trusted resource
- Emergency management teams
- Participation in rounding to highlight safety, quality, and financial concerns associated with laboratory testing dependent upon physician champion
- Interprofessional education and practice

Concerns/Issues for the future were identified:

- Need for preceptor training to ensure a strong pipeline of well-educated laboratorians. The training could include webinars, online modular education, continuing education units (CEUs), and identifying/cultivating staff that enjoy serving as preceptors.
- Outreach to high schools to ensure career awareness and preparation. One venue for this would be regular attendance at the MN School Board Association meetings.
- The knowledge base of healthcare diseases, treatments, protocols, etc. change rapidly. Laboratory professionals will need to stay up-to-date and to educate others about laboratory testing advances and best practices and continue to advance optimal patient care.
- The Board of Certification needs to stay in tune with practice and adjust its requirements accordingly.
- Diversity/cultural competency is an important goal in all aspects of the healthcare delivery system. It was noted that Minnesota's laboratory education programs are highly diverse.

The future direction of the laboratory was discussed with attendees answering the question "Where does lab need to go?" Ideas included:

- Becoming a resource and internal educator about test utilization
- Rounding with patient care teams
- Bedside testing – in home testing
- Educated staff to perform testing
- Capitalizing on the analytical strengths of lab staff to evaluate, analyze, and implement new advances in technology, testing, and patient care
- Serve as consultant and resource for patients and providers
- Biotechnology
- Informatics
- Public Relations for Lab Profession
    i. High school level
    ii. Tours
    iii. Reach out to advisors

Next Steps

As a wrap-up to the Summit, attendees were asked to identify some next steps for the Minnesota laboratory education and practice community. These included:

- Continued meeting of the monthly HealthForce Minnesota Clinical Laboratory Workgroup with intentional outreach to others
- Discussing, reviewing and evaluating the Summit themes to determine action items
- Continuing to lay the ground work to create a Simulation Lab which would serve students from multiple education programs
- Holding annual or bi-annual Summits to re-engage as a whole around clinical laboratory workforce issues/challenges/solutions

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ATTACHMENT A

Agenda

MINNESOTA LABORATORY PROFESSIONALS' WORKFORCE SUMMIT

"Tomorrow's Critical Need for Laboratory Professionals"

September 25, 2015
8:00 am – 4:00 pm
CentraCare Health Plaza Education Center - Windfeldt Room

AGENDA

7:45 am	**Registration**	
8:15 am	**Welcome**	Valerie DeFor, HealthForce Minnesota
8:25 am	**Keynote**	Laurie Bjerklie, DeVry University, Phoenix, AZ (by webex)
8:55 am	**Where We Are/What We've Done:**	
	Clinical Capacity	Michelle Briski, Saint Paul College
		Janice Conway-Klaassen, Univ. of MN
		Tammy Renner, Rasmussen College
	Simulation	Rick Panning, HealthPartners
	Financial ROI	Bobbi Kochevar, North Memorial
		Karen Renaud, FirstLight
		Jason Mayer, Park Nicollet/Methodist
10:25 am	**Break**	
10:40 am	**Setting the Stage**	Dan Olson, North Memorial
10:55 am	**Breakout Session 1**	
	1. Taking students – challenges, ideas, and solutions	
	2. Simulation	
	3. Bottom line impact (ROI) of serving as a clinical site	
	4. The future of laboratory practice and education	
12:15 pm	**Lunch**	
1:15 pm	**Breakout Session 2**	
	1. Taking students – challenges, ideas, and solutions	
	2. Simulation	
	3. Bottom line impact (ROI) of serving as a clinical site	
	4. The future of laboratory practice and education	
2:20 pm	**Report Outs from Sessions**	
3:00 pm	**Solutions and Future Roadmap**	
4:00 pm	**Adjourn and Go Make a Difference**	

Goals of the Summit:

To generate ideas and solutions for a workforce roadmap to cover:

Clinical capacity for educating laboratory students
Simulation Laboratory Support
Return on Investment for providing clinical rotations
Creative ideas for educating tomorrow's professionals

DIRECTIONS

The Windfeldt Room is located at the CentraCare Health Plaza Education Center, 1900 CentraCare Circle, St. Cloud, MN 56303. Please park in the Prairie East or Prairie West parking lots and enter the Prairie East or Prairie West entrance. The meeting will be held in the Education Center on the Lower Level (LL).

CentraCare Health's website and driving directions: http://www.centracare.com/locations/

Google Directions: https://www.google.com/maps/dir//45.5832646,-94.2071001

Confirmed partners include:

Minnesota Department of Health

American Society for Clinical Laboratory Science – Minnesota

Clinical Laboratory Management Association

Thanks to CentraCare for hosting the Summit!

This Summit was planned by the Clinical Lab Workgroup which meets monthly by conference call. Please contact Valerie DeFor if you would like to receive meeting notices. vdefor@winona.edu

Register at https://mnlabsummit2015.eventbrite.com

Refreshments and lunch provided by:

The Olson Family Aloha Foundation

HealthForce Minnesota

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ATTACHMENT B

Keynote Presentation

"My Simulation Tale"

Laurie Bjerklie, MA, MLS (ASCP)^{CM}

My Simulation Tale

Laurie Bjerklie MA, MLS (ASCP)CM
CLS Program Director
DeVry University – Phoenix, AZ

Background

- Education
- Work experience:
  - Critical access hospitals
  - Rasmussen College
  - DeVry University



Current Simulation Laboratory Equipment

Siemens Clinitek Status+

Dade Behring BFT II

Abbott Cell-Dyn Emerald

Current Simulation Laboratory Equipment

- Vital Diagnostics EON100
- Biomerieux Vitek 2
- Ortho Gel System
- LabDAQ LIS System


General Science Lab

CLS Lab

Prep Room

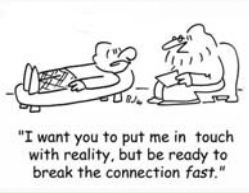
Simulation Lab

Initial Thoughts on Simulation

- Wow, this is a dream!
- Um, now what?
- Sigh, this may be more of a nightmare…

Realities of Simulation

- Feedback from clinical affiliates
  - Confusion on status of student
  - Not adjusting their teachings
- Impact on students and potential careers



Ups and Downs of Simulation

Ups	Downs
Advanced technology for student labs	$$$
Student preparedness	Curriculum building
Student review and correlation	Lab Manager and Director?

Lessons Learned

- Do you need it all?
- SOPs and Curriculum before equipment
- Train everyone and their mother!

In the End…

- Simulation is here to stay!
- Progressive and creative thinking is required
- Educating not just laboratorians but administration

Remember to keep being activists for our profession!

Contact Info

- Laurie Bjerklie
- lbjerklie@devry.edu
- 602-749-4532

ATTACHMENT C

Clinical Capacity Issues –

Perspectives from MLT and MLS Educators

Michelle Briski, Saint Paul College MLT Program Director

Tammy Renner, Rasmussen College MLT Program Director

Janice Conway-Klaassen, University of Minnesota MLT Program Director

1

Clinical Capacity Issues- Perspectives from MLT and MLS Educators

Where are we? What are we doing?

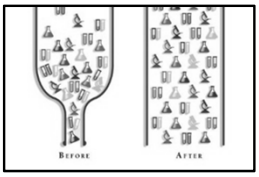
Michelle Briski – Saint Paul College MLT Program Director
Tammy Renner – Rasmussen College MLT Program Director
Janice Conway-Klaassen – University of Minnesota MLS Program Director

Minnesota Laboratory Professionals' Workforce Summit
CentraCare, St. Cloud, MN
9/25/15

2

What are the Issues?

- Overall shortage of clinical placements for all MN medical laboratory students
  - Blood Bank and Micro most difficult
- Delay in student graduation
  - impacts accreditation (program and college/university)
- Student relocation for clinical experience becoming increasingly common
  - Challenge for students (jobs, families, finances)
- Impact on program enrollment decisions



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What are the Reasons?

- Current employee staff development
  - Career ladder progression MLT→MLS
- Centralized and consolidated lab services
  - Microbiology and Transfusion Medicine
- Workload burden on staff
- Failure to recognize student presence impact on productivity
  - Education not supported in staffing "calculations"

4

A Statewide Problem

Informal survey of other MLT majors in MN State Colleges and Universities System

Private MLT programs have the same issues as state colleges.

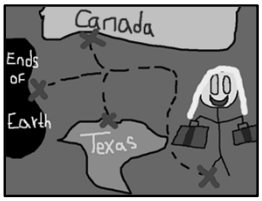
Programs are closing due to lack of clinical sites.

We can't enroll if we don't have clinical sites.

5

Have students in your MLT Program had to relocate to complete the required clinical experience?

- 5 of 8 programs indicated that students had to relocate to complete the clinical experience
- 2 reported that students that don't relocate travel 1-2 hours or more to get to an assigned clinical affiliate



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Have you decreased enrollment in your MLT program due to decreased clinical capacity?

- 5 of 8 programs have decreased or are purposefully not increasing due to clinical capacity
- 1 program indicated that rumors about the lack of clinical sites caused their enrollment to unintentionally decrease

7

Have students been delayed from completing the program due to lack of adequate clinical sites?

- 5 of 8 programs reported having students with delayed completion of degree (by at least 1 semester) due to clinical capacity
- One site reported >50% of students delayed in spring 2015

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Similar for MLS Programs?

- 2 new programs accredited
  - MLT to MLS
- 1 Program closed after Program Director retired
- Some other Programs restricting enrollments based on limited clinical placements
- 1-3 students partially delayed in completion for the past 3 years.
- Shortage of Micro and Transfusion Med rotations
- Upper administration is aware – there might be additional restrictions for enrollments

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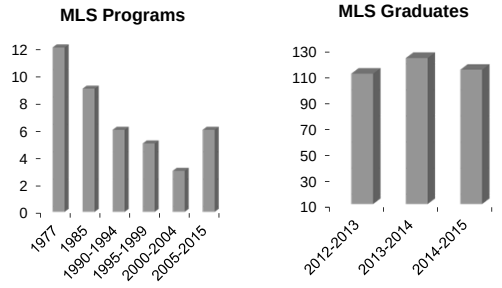
MLS Programs and Graduates



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Demand for Laboratorians

- MLS 2013 to 2015
- Averaged 25-30 Job Postings each month
- Produced only 110 grads
- 92% not willing to relocate
- 14% projected increase in demand by 2022
- MLT 2013 to 2015
- Averaged ~20 Job Postings each month
- Produced only 90 grads
- 93% not willing to relocate
- 22% projected increase in demand by 2022!!!!!

Job Posting Data from CareerBuilder Supply & Demand
Projected Increase Data from Bureau of Labor Statistics

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Solutions?

Think Outside the Box!

What is Entry Level?

- What are the traditional models?
- What is the real purpose of clinical training?
  - Clinical Experience model versus OJT
- What is competency vs proficiency
- New models of thinking about laboratory education

Simulation

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- A workgroup of educators and laboratory employees continue work on development of a simulation component of lab education to alleviate clinical capacity issues around the state
- Some schools are developing individual models for this as a means to supplement Microbiology and Transfusion Medicine clinical experiences
- ……..more information about this topic in a later session!

Shorten Clinical Time

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- Many programs have or are looking at decreasing clinical time
- Program accreditation standard requirements still remain the same
  - Entry level skill
  - Clinical competencies
  - Time is not dictated – only competency outcomes
- MLT programs may have a more difficult time due to an already short, intense program for students
  - Critical thinking skills

What is taught on campus? What needs to be added?

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- All NAACLS required content … i.e. hematology, clinical chemistry, transfusion medicine,…
- To shorten clinical times - add
  - More basic skills practice
    - Phlebotomy, urinalysis, differentials….
  - Enrichment experiences for areas not covered well during clinical time
    - Parasitology, mycology, antibody identifications, elutions….
  - Confirm knowledge and performance competencies before clinical placement

Shortened Clinical Findings

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- Not all students are ready for shortened clinicals
- Not all staff are ready for shortened clinicals
- Shortened clinicals did not always lead to more placements
  - NOTE: in MLT Program that tried this approach, it led to **NO** increases in placements
  - MLS Program decreased clinicals from 22 to 12 weeks (-45%) but added only 10% more placements
- But does it alleviate some pressure on staff?
- Student Outcomes – just as good

Programmatic Outcomes Impact

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- Graduation rates
  - Lack of clinical facilities can impact programs from enrollments to graduation
- National certification pass rates
  - Laboratory programs have to ensure that decreased clinical time does not impact national certification pass rates
- Placement rates
  - Approximately 35 to 55% students are hired by their clinical facilities. (or at least within the same healthcare system)
  - Many students have multiple job offers
- The need is still there

Student Comments

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- "..the staff was fantastic, I enjoyed the small hospital experience and being able to float around to different areas"
- "…my site involved me in everything so I felt like a part of their team"
- "I LOVE chemistry, because it's fun to troubleshoot analyzer problems.."
- "Seeing the lab managers work on things like budgets, schedules and preparation for inspections helps me understand some of the behind-the-scenes aspects of this career. It also makes me think about my own career aspirations … maybe I'll be a laboratory leader someday!"

Employer Comments

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- "Eagar to learn, willingly excepts additional duties"
- "…ambitious, very willing to work hard, is polite and friendly to the patients"
- "…a breath of fresh air to our laboratory staff, provides an opportunity for our staff to learn too."
- "The student was only here 3 weeks, but he easily met the expectations for knowledge and technical skills for that brief time period."

Future Directions

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ATTACHMENT D

The Value of Providing Student Clinical Rotations

Karen Renaud, FirstLight

Jason Mayer, Park Nicollet/Methodist

Bobbi Kochevar, North Memorial HealthCare

THE VALUE OF PROVIDING STUDENT CLINICAL ROTATIONS

Presented by:
Karen Renaud, FirstLight
Jason Mayer, Park Nicollet/Methodist
Bobbi Kochevar, North Memorial HealthCare

Laboratory Professionals

- Work in all areas of the clinical laboratory including blood banking, chemistry, hematology, immunology, and microbiology
- Perform testing to diagnosis full range of diseases from Strep Throat to HIV/AIDS, diabetes, and cancer
- 70% of all medical decisions (diagnosis & treatments) are based on laboratory findings
- ..*the behind the scenes backbone of medicine* (www.ascp.org)

Workforce Shortage Pressures

- Increased utilization – new tests & new methods
- 46% of labs report 3-6 months to fill vacancies
- Median age is 48 yo
- ~25% workforce will retire within 10 years
- Only 1 laboratorian will enter the field for every 3 that plan to retire

ASCP Vacancy Survey
ASCP Wage and Salary Survey

National Outlook*

- Bureau of Labor Statistics predicts 7,700 new MLS and MLT professionals will be needed each year between 2012 and 2022
- MLT employment → 30% growth by 2022, "much faster than the average"
- MLS employment → 14% growth "as fast as average"

* *Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, 2014-15 Edition, Medical and Clinical Laboratory Technologists and Technicians.*

Workforce Shortage

In 2013:
The National Accrediting Agency for Clinical Laboratory Science (NAACLS) summarized:

 # graduates needed/yr = 14,000*
 # graduating/yr = 6,322
Shortfall = 7,678

* *Bureau of Labor Statistics*

Minnesota Outlook

- MLS
  - Estimated Employment in 2012 = 3,510
  - Projected Employment in 2022= 4,001
  - Percent Change = 14%
- MLT
  - Estimated Employment in 2012 = 3,140
  - Projected Employment in 2022 = 4,082
  - Percent Change = 30%

**Bureau of Labor Statistics*

Projected Need in Minnesota

- MLS Vacancies by 2022:
  - Twin Cities = 760 new and replacement job openings
  - Minnesota = 1,530 new and replacement job openings
  - Nationwide = 32,700 new and replacement job openings
- MLT Vacancies by 2022
  - Twin Cities = 910 new and replacement job openings
  - Minnesota = 1,630 new and replacement job openings
  - Nationwide = 47,900 new and replacement job openings

MN Department of Employment & Economic Development

The Good News

MLS Programs in Minnesota

- Hennepin County MC – MLS Program
- U of M MLS Program
- Mayo Clinic MLS Program
- Argosy MLS Program
- St. Cloud State MLS Program
- Winona State MLS Program

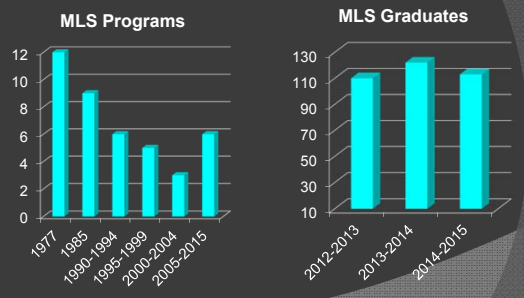
MLT Programs in Minnesota

- Alexandria TCC
- Argosy MLT Program
- North Hennepin CC
- Lake Superior
- MCTC Fergus Falls
- Hibbing CC
- Rasmussen College MLT Programs (4 sites)
- South Central CC
- St. Paul College
- Minnesota West CTC
- Minnesota State College Southeast

Minnesota Program Closures and Expansions

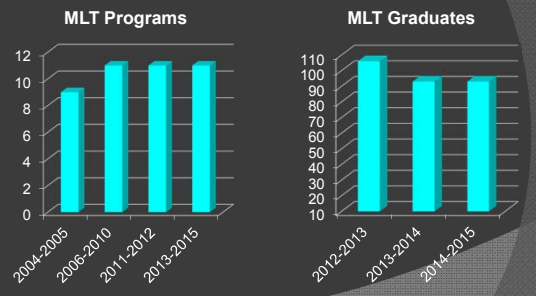
- Fairview Hospital – closed 2014
- Added SCSU and WSU MLT to MLS
- Argosy – continuation status unknown
- UM expanded to 65 students but back to 55 due to lack of placements

MLS Programs and Graduates



HFM 2015 Survey of MLS Education Programs and NAACLS

MLT Programs and Graduates



HFM 2015 Survey of MLT Education Programs and NAACLS

Cost to Train a MLT or MLS Student

- Average Impact on Trainer Work Productivity
  - 30% clinic setting
  - 50% hospital setting
- Assuming mid-career salaries for trainers (+30% fringe)
  - MLT = ~$66,000 + 30% Fringe = $86,227
  - MLS = ~$88,000 + 30% Fringe = $113,965

19 Weeks for MLT Student

- Clinic Setting Cost Analysis
  - Train for 19 weeks or ~1/3 year = 0.37 FTE
  - 0.37 FTE @ 30% productivity loss = 0.11 FTE
  - 0.11 FTE x $86,227 = $9,500 to train student
- Hospital Setting Cost Analysis:
  - Train for 19 weeks or ~1/3 year = 0.37 FTE
  - 0.37 FTE @ 50% productivity loss = 0.19 FTE
  - 0.19 FTE x $113,965= $21,653 to train student
- Impact → $21,653 to train MLT students by Hospital MLS Trainer

12 weeks MLS Student

- Clinic Setting Cost Analysis
  - Train for 12 weeks or ~1/4 year = 0.23 FTE
  - 0.23 FTE @ 30% productivity loss = 0.07 FTE
  - 0.07 FTE x $86,227 = $6,036 to train MLS/MLT student
- Hospital Setting Cost Analysis:
  - Train for 12 weeks or 1/4 year = 0.23 FTE
  - 0.23 FTE @ 50% productivity loss = 0.12 FTE
  - 0.12 FTE x $113,965 = $13,676 to train MLS/MLT student
- Impact →$13,676 to train MLS students by Hospital MLS Trainer

Cost to Recruit New Employees

- Most HR departments will factor 1 to 1.5 times the employee's annual salary*
- Includes direct and indirect costs:
  - Processing the termination, payout of benefits
  - Review and authorization to replace vacated position
  - Job posting and advertising/Interviews
  - Processing the hired applicant (Health Service and screening)
  - Orientation and Training
- Annual salary/fringe = $63,395 replacement cost MLT entry
- Annual salary/fringe = $86,227 replacement cost MLS entry

*SHRM Metrics Staffing Report
http://www.shrm.org/metrics/library/

Do the Math MLT

- Assumptions: Training MLT student for 19 week internship
- MLS mid-range salary trainer (~$114,000)
  - 19 weeks productivity impact → $21,653
  - 1 year salary to replace → $63,400 (MLT entry)
- Break-even point →
  - **1 Student for every 3 students trained!**

Do the Math MLS

- Assumptions: Training MLS student for 12 week internship
- MLS mid-range salary trainer (~$114,000)
  - 12 weeks productivity impact → $13,700
  - 1 year salary to replace → $86,300 (MLS entry)
- Break-even point →
  - **1 Student for every 6 students trained!**

Students Hired – Metro Area

Site	% Hired
Allina Hospitals	31
Allina Clinics	73
Children's Hospital, Mpls	50
Fairview Hospitals	65
Fairview Clinics	66
HCMC	33
HealthEast Hospitals	25
North Memorial	33
Regions	15
Park Nicollet	30

Students Hired – Non-Metro

Site	% Hired
Albert Lea Medical Center	25
CentraCare, St. Cloud	60
Essentia, Duluth	38
First Light Hospital, Mora	33
Long Prairie Hospital	100
Rice Memorial, Willmar	40
Stevens Community Medical Center, Morris	43
St. Luke's Hospital, Duluth	30

The Challenge

Consider the value to your organization to provide clinical laboratory rotation opportunities

Value to Employer

- Patient safety
- Having students helps us keep our procedures up to date and easy to follow.
- Keeps existing employees "sharp" on their skills, knowledge, and behaviors:
  - Follow and explain procedures
  - Utilize best practice or standard work practices
  - Model proper behaviors for customer service, etc.
- Ability to "pre-screen" before hiring – one to six month interview period

Voice of the Employer

- Karen Renaud
- Jason Mayer
- Bobbi Kochevar

We're in this TOGETHER!

- What is it going to take to make this happen?
- It starts with us, here today!