

Department of Education: FY2009 Annual Report

Lehigh Valley Health Network

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Division of Education

FY 09 Annual Report

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Introduction

Our vision in the Division of Education is to provide the culture, environment and tools to support timely and ongoing solutions that meet the educational needs of people at Lehigh Valley Health Network and the communities it serves.

- We promote collaborative efforts across the network pursuing excellence in education.
- We support the continuum of education from life-changing high school experiences to advanced professional continuing education.
- We seek to extend our educational solutions to our community and regional affiliate partners.

We seek to identify and deliver learning opportunities that enhance knowledge through the most efficient methods available. These learning opportunities enable employees and partners to provide superior patient care and contribute to employee competency, growth and development while supporting the organizational priorities of the institution.

The Division of Education continued our theme from FY08 into 2009 fiscal year to *lay the foundation for the learning organization of 2012* through the use of emerging educational theory, methodology and state-of-the-art instructional technologies. You will see this theme reflected in our accomplishments, future goals, and major grant requests. This theme is also evident in several substantial multi-year projects:

- Building the infrastructure and curriculum for incorporating simulation as a curricular and adult learning methodology
- Implementation of a new eLearning System and expanding clinical digital content
- Research, design, and establishment of an interdisciplinary faculty development program
- Continuation of an established program for regional college internships

This will be realized through our diligent functional planning, assessment and the improvement of participant satisfaction, direct support of care management, continuous operations improvement, and building a robust learning infrastructure.

The Division of Education team members have an inbuilt need and ambition to strive toward greater challenges. These team members bring with them a work attitude and work ethic that creates a deeper commitment to our collective vision. Evidence of this can be seen in the following reports by functional sections. Each shows aggressive progress towards stated goals and noteworthy accomplishments for the year.

Clinical Staff Development

The Clinical Staff Development section facilitates nurses' and other health care providers' pursuit of lifelong learning, and their commitment to patient safety and clinical excellence through the provision of quality orientation and continuing education activities and initiatives.

- 22,728 learners (22,254 employees + 474 external (non-employees))
- 943 classes, over 4,780 class hours
- 123,394 instructional hours
- 3,433 employees attended product in-services for a total of 102 hours

Accomplishments:

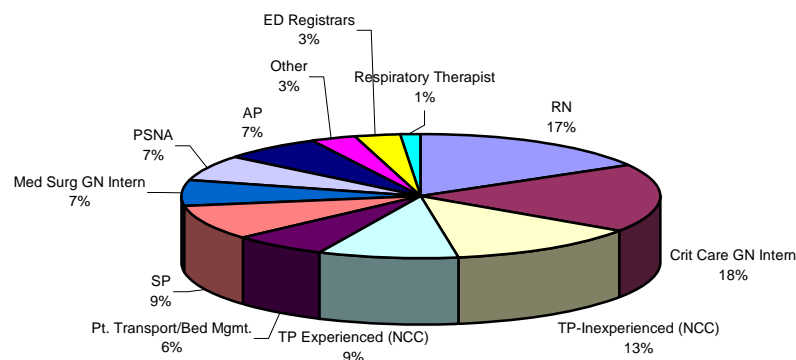
Clinical Services Orientation:

- 649 newly hired staff through Clinical Services Orientation (CSO) for FY 2009; down 37% from FY 2008.
- 42% of new employees through these orientation programs are nurses with 25% new graduates and 17% experienced nurses.
- 50% of new employees are unlicensed assistive personnel.
- 7% are student nurses in PSNA or SNE roles.
- 1% are licensed professionals such as respiratory therapists.

Services

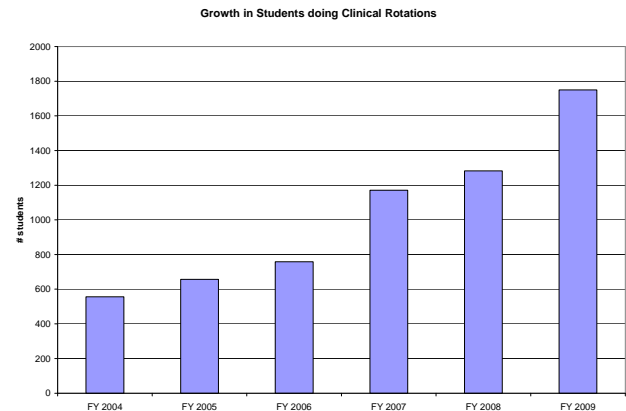
- Registered Nurse orientation and development
- Graduate Nurse internships
- Orientation and training of unlicensed assistive personnel
- Competency Based Education consultation
- Continuing education programs
- Clinical product consultation and coordination of related education
- Coordination of student rotations for college affiliations
- Instruction and curriculum consultation for other professionals engaged in learning

CSO by Job Title



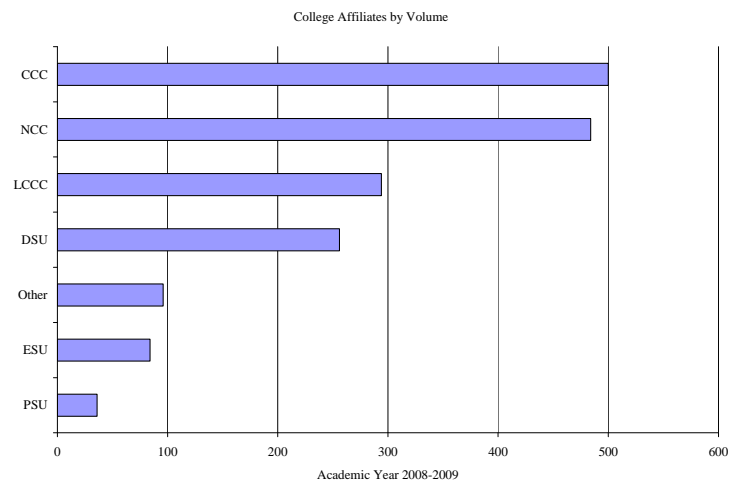
Clinical Affiliations:

- 5 key affiliates for nursing students (Cedar Crest College, Northampton Community College, Lehigh Carbon Community College, DeSales University and East Stroudsburg University).
- 45% of the 2009 Graduate Nurses graduated from the key affiliate colleges/universities.
- 1,750 clinical rotations; 35% increase
- 81 schools with signed clinical affiliation agreements, 29 schools with students in clinical rotations between July 2008 and June 2009.



Affiliates for Clinical Students – active with students FY 2009

Alvernia College - counseling
 Arcadia – genetic counseling and physical therapy
 Bloomsburg University – speech therapy, graduate level nursing
 Biblical Seminary - counseling
 Cedar Crest College – nursing and nutrition
 Chestnut Hill – counseling psychology
 DeSales University –nursing
 Drexel University- psychology, graduate nursing students
 East Stroudsburg University – nursing, cardiac rehabilitation
 Gwynedd-Marcy – respiratory therapy, cardiovascular technology, nursing
 Lackawanna College- vascular technology
 LaSalle University – nurse practitioner
 Lehigh Carbon Community College – nursing, medical and physical therapy assistants
 Lehigh University - psychology
 Lincoln Technical School – medical assistants and pharmacy technicians
 Marywood University – social work and nursing
 Millersville University – respiratory therapy
 Misericordia – nursing, physical therapy
 Montgomery Hospital School of Nursing Anesthesia – nurse anesthetist
 Moravian Theological Seminary – pastoral counseling
 Nazareth Hospital School of Anesthesiology – nurse anesthetists
 Northampton Community College – nursing and radiology technicians
 Pennsylvania State University – Lehigh Valley – nursing (LPN)
 Reading Area Community College – respiratory therapy
 Thaddeus Stevens – respiratory therapy
 University of Delaware – graduate level nursing



University of Pennsylvania – nurse practitioner and nurse anesthetist
University of Pittsburgh – pharmacy, nursing
University of Scranton – nursing and physical therapy
Walden University – graduate nursing

Awards and Achievements:

- **Technical Partner Program** was recognized through the Workforce Investment Board as a national Best Practice through the Healthcare Industry Partnership research.
- **Jeanine DeLucca** MSN, RN, BC and **Pat Karo** MEd, BSN, RN, BC were accepted for oral presentation of their abstract on the Medical Surgical Internship Program using Casey Fink by the AMSN (Academy for Medical Surgical Nursing). “Medical Surgical Graduate Nurse Internship: Supporting Professional Development” was presented at the national conference in Nashville in October 2008.
- **Heather Rizzo**, MSN, RN presented a station at the LVHN Patient Safety Fair, March 2009 on Safe Blood Administration.
- **Jeanine DeLucca** MSN, RN, BC recertified in Medical-Surgical nursing in April 2009.
- **Carol Sorrentino**, MSN, RN, APRN, BC nominated for the 2009 Friends of Nursing award: The Jeffrey J. Hitchings Award for Excellence in Education.
- **Edith Gray** RN, MSN, CEN, PHRN and **Christine Hafner** RN, MSN accepted for a poster presentation for “Asynchronous and Synchronous Learning: The Teaching Strategies for Success in Critical Care Nursing Orientation.” Poster presentation at National Nursing Staff Development Organization (NNSDO) national convention in July 2009.
- In process, **Donna Stout** is attending Lehigh Carbon Community College for her Associate Degree in Human Resource Management.
- In process, **Lori Yesenofski** BSN, RN, CCRN is furthering her degree at Drexel University for an MSN in Clinical Trials Research.
- In process, **Jeanne Luke** BSN, RN, the newest Education Specialist is completing her MSN in Nursing Education from DeSales University later this summer.
- In process, **Tiffany Epting** BSN, RN is attending Cedar Crest College, aggressively pursuing her MSN in Nursing Education in 2 years.

Performance Improvements:

Virtual Nursing Instructors Coaching New Graduates to Pass Exams and Provide

More Clinical Time: Previously an outsourced instructor-led NCLEX (National Council Licensure EXamination) review program; now online, Virtual ATI (Assessment Technologies Institute) has freed up schedules allowing 24 more hours of clinical time, rather than classroom time with 98% pass rate. The virtual instructors are master degreed nursing faculty who create individualized student learning plans. A group of past students, who struggled with repeated unsuccessful attempts, was functioning in unlicensed roles; Virtual ATI accepted the challenge and the results have been astounding: first time pass rates improved 90% in 2007, 92% in 2008, and 98% in 2009 to date. Graduate nurses feel that they have the time to concentrate on studying and passing boards, and began orientation with less anxiety and more confidence to transition into becoming a registered nurse.

“I honestly don’t even know how to thank you enough... The last couple of months have been such a struggle and each day you helped me get through those impossible days. I know sometimes I pushed to take the test but I thank you so much for saying “lets review a little more”. without your help, encouragement and positive outlook I would not have done it. I wanted to give up so many times and you just kept pushing me and telling me I could do it. ...thank you so much for everything you did for my future without you I wouldn’t be an RN”

Going to the Gemba - Education Specialists Demonstrate their Clinical Skills: As a way to maintain clinical skills and expertise the RN staff within Clinical Staff Development section is rotating in the clinical areas. Scheduled within their full time status, part of the DOE budget, is up to one clinical shift per month in a patient care area. Staff have been seen on 6K, 5K, ICU at Muhlenburg, ED at Cedar Crest, NSICU, TNICU, 7A. Staff also hold jobs outside of LVHN in an Emergency Department and in a therapy practice. This resulted in over 1300 hours of clinical practice that helps all of our educators maintain their clinical expertise. Applying the principles of SPPI, going to *gemba*, has proven to be beneficial for the educators, as well as the staff on the clinical units. Our staff brings back to the classroom relevant experiences to improve transfer of knowledge.

Faster On-The-Job-Performance and Increased Technical Partner Retention Rates: The Technical Partner program is a collaborative educational curriculum with Northampton Community College (NCC) combining classroom and on the job training with educator and preceptor support. Beginning in March 2007, the program now has over 400 graduates. Satisfaction data for both students and patient care services staff receiving the newly hired employees is positive. Hospital turnover rates for the TP position over the course of the program continue to improve from 24.02% turnover in FY 2006, to 17.48% in FY 2007, to 15.39% in FY 2008. FY 2009 data is still not available at the time of this report. The TP Program has also functioned as a career ladder. This past fiscal year, 27 Support Partners entered into the TP educational programs and advanced their careers! Division of Education received \$104,715 in Workforce Investment Board funding to help to defray the expenses associated with this program and was recognized by the state as an exemplary program.

Changing Cardiac Arrhythmia Education for Improved Outcomes: Through a collaborative effort involving members of the eLearning team, Clinical Staff Development, and subject matters experts from the clinical areas, 8 eLearning modules are now in use as self directed, computer based training for employees new to Basic Dysrhythmia. The traditional ILT classes have been converted to self paced training followed by a skills lab for practice and validation of learning. Modules can be taken as a complete curriculum for the novice learner, or as a refresher of individual topics by the experienced clinician. Even without advertisement, experienced clinicians are reviewing and testing on areas for their own professional development.

Verifying Competencies for Chest Pain Center Accreditation: Knowing LVHN was advancing toward another national certification, the CSD staff engaged in the verification of training and competency on cardiac rhythms for over 600 clinicians. Following testing, refresher classes and remediation was offered. The result was a successful accreditation as a nationally recognized Chest Pain Center.

Expanding Cardiac Arrhythmia Education in the Women and Children's Division: We expanded education related to cardiac monitors to Pediatrics and L & D. Raising the expertise in this area directly impacts the delivery of quality patient care in the realm of cardiac care to this special population.

Redesign of the Graduate Nurse Orientation Track: Utilizing lean strategies the Graduate Nurse Orientation track was redesigned. Prior to January, 2009, the new GN followed a clinical specialty track of Orientation. The restructuring addressed the specific needs of the new RN and makes the most efficient use of educators, equipment and facilities. Classes were combined

based on time of hire regardless of the clinical specialty. Utilizing this universal program, duplication of classes has been eliminated saving resources and providing greater consistency of instruction. The new RNs participate in three workshops that include the presentation of clinical information and opportunity to practice skills in of six Clinical Simulation Scenarios.

RN & GN Leadership Programs Expand: Due to their overwhelming popularity and identified need, the Graduate Nurse Leadership and Professional Development series has been revised and now includes newly licensed RNs from clinical areas throughout the Network Medical-Surgical, Critical Care, Emergency Department, Women and Childrens, Behavioral Health, Perioperative Services and TSU. Coming together for a day of class at 4, 8 and 12 months from hire, the new staff are exposed to both clinical, professional development and self care subjects that help in their transition to their role as a professional registered nurse. A new single one day program is being offered several times a year for the experienced RN to address their professional development and continuing education needs.

Expanding Teaching Methodology with Simulation: Through a collaborative effort with the Simulation Team, hi-fidelity simulations have been added to numerous classes conducted by Clinical Staff Development. The following classes have all been redesigned to include simulation: GN Workshop, Critical Care Internship, Support Partner Orientation, PSNA and SNE Orientation Workshop. Topics for simulation include stroke, Code Blue (adult & pediatric), GI Bleed, hypoglycemia, chest tube insertion, hemodynamic monitoring, sepsis, patient safety, one on one observation, skin integrity and isolation, and post operative patient care.

Implementing Departmental Metrics and Evaluation: A database was developed in Clinical Staff Development to accurately track the number of classes conducted and the number of students in attendance throughout the year. Realizing a need to standardize and collect evaluation data for all classes, a process was developed and rolled out. The first 6 months of *Level 1* data show:

- 4,455 learners attended classes
- 3,554 evaluations completed for an 80% response rate
- 90% of all classes offered in the past 6 months have had evaluations completed.

Using eLearning System to Engage Clinicians and Reduce Administrative Overhead: Peak Development Newsletters for Certified Nursing Assistants, Medication Administration and Health Unit Coordinators are being maintained in the eLearning System. By using the eLearning system's design and tracking tools employees are able to read these educational newsletters and take the corresponding test. Tests are graded automatically and the complete education and quiz score appear on the employee transcript. Up until January, this was a manual process that each PCS maintained by grading the quiz and keeping records of staff completion.

Rapidly Meeting Joint Commission Standards for Anticoagulation Safety: A new eLearning program was developed to meet the new Joint Commission Standards of January 2009. The program was designed to comply with the standards and has had over 1,000 users in just a few weeks of it going live!

Efficient Tracking of Professional Student Nursing Assistants Orientation: A previously developed web-based orientation program was made interactive with updated and expanded content for the summer PSNA's and Student Nurse Externs. Moving it to eLearning allowed for

grading of quizzes and recording this orientation on the employee transcript. The interactive computer based learning was well received by the students.

Improving Technical Partner Performance through Continuing Education Series: The educational modules originally developed as an orientation for PSNA's and SNE's were expanded as a continuing education series for Technical Partners. Titles include:

- 2009 Joint Commission NPSG
- Prevention of Urinary Tract Infections
- Blood Glucose Meter
- Fall Prevention
- Infection Control
- Latex Allergy
- Pain Management
- Restraint Alternatives
- Skincare
- SBAR Hand Off Communication

eLearning System Transcript used to Record Product In-Services: After reviewing employee Training Transcripts, we realized that a required piece of training was missing from the educational records. We implemented a standard operating procedure of recording all product in-services as of January 2009; employees who attend in-services are "credited" with this attendance on their eLearning System Training Transcript. This helps to meet the regulatory requirements of demonstrating staff training on all clinical equipment used.

Improving Patient Safety with Tracking Bedcheck Program at Muhlenburg: Concerned with patient safety and falls, our products nurse specialists know the challenges of not having the equipment you need when you need it most. In response a system was developed to locate, store, and maintain bedcheck equipment so they were there when nurses needed them most to protect our patients.

Redesign of Administrative Partner Curriculum: The AP orientation curriculum work group has reorganized content, providing for interactive learning, developed new reference tools, and maximized efficiency in how the content is taught by eliminating duplicated materials and re-sequencing lesson content. A pilot is being conducted with those doing the job on the clinical units before it is finalized and implemented.

Clinical Computer Classes Redesigned: The Metavision, Lastword Medication, Patient Care Documentation, and the email computer classes have been redesigned. All of these courses have had curriculum revisions updating the objectives and course content to focus on the "how to" of using the clinical applications, as well as updated materials to include class workbooks and job aides. The Lastword Medication and Patient Care Documentation classes have had several online training modules added to transition half of the course time to self-directed computer-based training with instructor support rather than stand-up instructor-led training.

New IV Therapy Classes: Using data from the Casey Fink Graduate Nurse Experience Survey identifies intravenous therapy as a high stress area. As a result the incorporation of two hours of "hands on" workshops devoted to the programming of the BBraun Outlook Pump and the Curlin Medical Pain Smart Pump provides the learner with one on one education, providing a solid

foundation for clinical practice. The newly licensed Registered Nurse builds on these basic skills in the GN Workshops and clinical simulation scenarios.

Improved Communication: Several projects have resulted from the previous year's goal to improve communication with all of Clinical Staff Development's customers.

- **News You Can Use:** A single page monthly newsletter has been developed and is distributed at PCS and PCOC meetings to facilitate the sharing of information. This medium has served to distribute new educational offerings, contains eLearning tips, and has other useful information for Patient Care Services staff. The newsletters are released monthly.
- **eLearning Bulletin Board:** Provides a single point for Quick Reference Cards, changes to eLearning, new features and other relevant items. Educators using eLearning can benefit from an efficient "one stop shopping" idea for all their eLearning needs.
- **Affiliation Visits:** Visits to our top 5 clinical affiliates every semester to ensure that clinical experiences at LVHN are the best they can be. Communication has also been enhanced through Advisory Board positions on 3 of the top 5 colleges for nursing.
- **Clinical Education Advisory Board:** An advisory board was established in late FY 2009 for clinical educators to meet regularly to improve the educational delivery throughout the network, capitalize of limited resources, improve efficiency, and develop new educational initiatives.

Deepening Students Experience with Improved Clinical Equipment: As a result of a capital budget project, Clinical Staff Development upgraded existing clinical equipment used in education as well as expanded in the area of hi-fidelity simulation equipment. With the purchase of Sim Man and Mega Code Sim with Vital Sim, students can now care for the closest thing to a "live" patient in the security of a learning lab. Task trainers such as IV arms, catheterization manikins, arrhythmia generators, and Mr Hurt heads allow for hands on training in complex skills. Glucometers, IV pumps and barcode scanners brought the actual equipment used in the clinical settings to the Learning Lab.

New Advanced Medical-Surgical Course Target Critical Thinking Skills: In a collaborative project with medical-surgical Patient Care Specialists, a comprehensive 48 hour course for the experienced med surg nurse was created (41.7 contact hrs). The purpose was to expand knowledge and critical thinking skills while preparing for certification. Outcome measures include 74% to date have taken the exam, and 100% have achieved certification in med-surg nursing to date.

Opportunities:

Redesign Clinical Service Orientation: This Orientation program is being redesigned and expanded to include a larger clinical audience. Using the idea of standard work and efficiency, the orientation program will include clinical areas outside of patient care services, include more principles of adult learning such as interactive experiences and simulation, and serve as the foundation that supports the idea of lifelong learning as part of employment at LVHN. Accompanying redesigns will be the Administrative Partner curriculum and the computer classes which are part of the current orientation program.

Position the Clinical Staff Development Team for the Future: Strengthen the CSD team to meet future challenges brought on by both internal and external challenges to LVHN such as

changes in technology, professional shortages, and the changing needs of our customers.
Support education and growth in the following areas:

- eLearning and instructional technology in teaching and learning – with the addition of an instructional designer to assist in program development
- Departmental metrics and project management to demonstrate measurable outcomes and value – to demonstrate return on investment and cost/benefit of educational offerings
- Customer Service in relation to students, new hires, liaison responsibilities, and all LVHN relationships – provide feedback and evaluation to enhance individual growth and development
- Promote and encourage clinical certification as well as certification in Nursing Professional Development.

Enhance Departmental Metrics and Ability to Quantify Programmatic Costs: Build on the work of the previous fiscal year to begin trending and benchmarking existing data to assist in decision making, program development and budgeting.

Trends:

More Tech-savvy, Computer Oriented Learners: The type of student we work with is changing, regardless of age. They are expecting education to be far more “just in time” and interactive. They are looking for eLearning, mobile learning and not be confined in a classroom in large blocks of time. This will have a profound impact on how instruction is designed, not just moving away from the traditional classroom, but also the notion of 1 hour eLearning modules; instead “chunking” content into 2 – 5 minute “learning objects” that can be drawn upon demand while at the work site in the context of job performance.

Changing Business Climate: As our climate continues to change toward lean processes, we will require more cost efficient delivery of education solutions. This aligns well with eLearning and mobile learning strategies. The greatest difficulty is the remaining large number of traditional learners who are resistant to changing and mismatched to the learning styles.

Rapid Development of Content; Short Shelf Life and Disposability: Rapidly changing healthcare delivery and regulatory requirements will require education to be more responsive, timely and delivered at the site of care – not classroom based. This is not just a question of changing the design and delivery of content, but changing the expectations that materials designed for quick, disposable educational use need to be produced at commercial quality standards. Rapid video, elearning, simulation and other kinds of content development does not need to be high quality production to successfully reach educational outcomes.

Goals:

People: Faculty development for Education Specialists, including the use of technology, teaching strategies, and SPPI. Require staff attendance at Faculty Development series and LCCC classes. Include mini-education sessions as part of CSD Staff Meetings.

- Provide staff feedback on teaching abilities through a structured evaluation tool, creating action plans for improvement as required.
- Extend faculty development efforts to PCS’s.
- Develop an educational plan for PCS faculty development using ES staff as faculty.

Service: Participate on Advisory Boards, planning groups and other committees to maintain effective working relationships with our college affiliates.

- Serve on Advisory Boards for at least 1 college affiliate.
- Participate in USF Project with emphasis on nursing integration.
- Conduct one joint project which positively impacts education.

Quality: Develop a meaningful scorecard, dashboard, and CSD metrics board.

- Implement the level 1 evaluation tool for 90% of CSD classes.
- Provide monthly data to the DOE dashboard while having specific CSD indicators on a metrics board for staff.
- Utilize evaluation data for performance improvement, showing revisions in educational plan as a result of student feedback.

Cost: Seek out funding sources to defray the cost of education with the services we deliver.

- Continue to participate and apply for funding through the local WIB.
- Work with Development to pursue additional funding sources for training and development.
- Participate in the application process for HRSA or economic stimulus grant finding as appropriate.

Growth: Expansion of clinical orientation programs by redesigning CSO to meet the needs of clinical departments, using SPPI tools and processes.

- Develop a project plan and ensure senior management support.
- Redesign first day of orientation using a waste walk, Going to Gemba and an A3.
- Redesign second day of orientation and pilot content using additional SPPI tools as applicable.

Continuing Education

Continuing Education & eLearning partners with network members to provide effective and efficient learning solutions that integrate quality educational experiences for our members, patients and community. This encompasses CME, CNE and other forms of accredited continuing education for clinical and administrative personnel; traditional classroom and multi media based digital productions for employees, patients and our community.

- 18,855 total number of participants
- 63 total number of events
- 571 recurring sessions
- 1,200 total instructional hours
- 19 Total Live Course/Single Event/Conference/Symposium
- 42 RSS/Recurring Course
- 2 Enduring Materials

- 471 total number of CME events
- 16,416 number of participants in CME events
- \$10.31 avg cost per participant
- 48% physician attendance

Services:

- Accredited by the Pennsylvania Medical Society to provide AMA PRA Category 1 Credit™
- Approved provider of CNE by the Pennsylvania State Nurses Association
- Accredited by the American Speech-Language Hearing Association
- Accredited by the Pennsylvania Department of Education for Act 48 Credit
- Guidance in meeting accreditation guidelines for continuing education credit
- Consultation to obtain other continuing education credits such as Social Work, Pharmacy and others
- Provide tools for analysis, design, development, implementation and evaluation of continuing education activities

Continuing Education statistics are reported on the calendar year per state requirements, not our fiscal year cycle.

Accomplishments:

AMA PRA Category 1 Credit™

- 47 CME activities, 601 credits taken by 8,010 physicians and 8,406 others CY08
- 57 CME activities, 730 credits taken by 7,175 physicians and 7,837 others CY07
- 58 CME activities, 722 credits taken by 6,852 physicians and 8,404 others CY06
- 60 CME activities, 737 credits taken by 7,954 physicians and 5,545 others CY05
- 67 CME activities, 939 credits taken by 6,578 physicians and 5,885 others CY04

PSNA Contact Hours

- 131 CNE events, 738.4 contact hours, 2,528 RN attendees and 1,567 others CY08
- 130 CNE events, 893.4 contact hours, 2,652 RN attendees and 1,121 others CY07
- 151 CNE events, 1,294 contact hours, 4,066 RN attendees and 1,896 others CY06
- 223 CNE events, 2,013 contact hours, 6,327 RN attendees and 1,900 others CY05
- 115 CNE events, 1,077 contact hours, 3,075 RN attendees and 884 others CY04

Note: Change in contact hours calculation for CY '07 from 50 to 60 min. contact hour. The reduction in event numbers for '06-'07 is attributed to ACLS, and PALS, opting for no credit and the Critical Care Course transitioning to AACN's ECCO modules.

Social Work Credit

9 SW events, 46.45 credit hours, 72 SW attendees and 1212 others in CY 08
8 SW events, 61.75 credit hours, 39 SW attendees and 971 others in CY 07
6 SW events, 42.55 credit hours, 17 SW attendees and 537 others in CY 06
3 SW events, 20.75 credit hours, 3 SW attendees in CY 05

Commercial Support Funding

Independent Educational Grants

- \$59,247.00 for CME in CY 08
- \$89,508.00 for CME in CY 07
- \$103,500.00 for CME in CY 06

Exhibit Income

- \$15,000.00 for CME in CY 08
- \$5,900.00 for CME in CY 07
- \$2,500.00 for CME in CY 06

Comparison to 62 Pennsylvania Medical Society Accredited Organizations for CY '08:

LVHN ranking in the following categories:

CY '07	CY '08	Category
62	61	Number of State Accredited Providers
10 th	13 th	Activities Offered
5 th	8 th	Hours Offered
6 th	4 th	Physician Attendance
2 nd	3 rd	Non-physician Attendance
3 rd	5 th	Commercial Support Income
7 th	7 th	Exhibit Income
3 rd	2 nd	Income Other than Commercial Support
3 rd	3 rd	Total Program Expenses

CME Commercial support Comparisons

- 29 Unrestricted Educational Grants – 76% of Commercial Support Received
- 36 Exhibit Fees – 24% of Commercial Support Received

Nationally, the ACCME reported a 23% increase in participants over 2007 numbers. Live courses remain the most widely offered format for CME followed by internet enduring materials, such as online educational modules, recorded presentations and podcasts. Total income for CME programs decreased by 7% as well as a 14% decrease in commercial support.

Performance Improvements:

Efficiencies with Attendance, Registration and Record-Keeping in eLearning: The implementation of the new eLearning platform has provided an online means to facilitate

communication of activities, and provide self-service registration tracking and reporting. The continuing education team has been working closely with the eLearning team to ensure accuracy in reporting, and offer convenience for our learners to keep track of their learning progress, identify required training to meet certification and search for available education in their identified areas of need. Consolidation of record keeping from disparate systems will improve accuracy of information and allow for education staff to focus on activity planning.

Helping Planning Teams Improve Outcomes using New ACCME Criteria: The Continuing Education team enhanced the Regularly Scheduled Series workshops and annual activity applications this year to educate planning teams on the new ACCME guidelines and criteria. The application for CME has been redesigned to incorporate the new criteria. Through individual meetings the Continuing Education team assisted planners in refining their series objectives, needs assessment, outcomes measurement, and delivery methods for programs.

Increasing Audience Participation through New Audience Response System: The organization recently upgraded our audience response technology to a more user-friendly interface with an ability to accommodate 500 responders. A/V Media Services, eLearning, Simulation, and the Continuing Education Team partnered together to promote the new Audience Response System (ARS) data collection tool within the health network. Utilization of this system can enhance education delivery by providing an interactive component to traditional teaching methods, an opportunity to gauge comprehension in real-time, polling to direct content to the interests and needs of the audience as well as has the potential to improve data collection for educational outcomes measurement. Interfacing with multiple departments and across network service lines through this data tool will improve efforts to meet the new ACCME Accreditation Criteria.

Increasing Attendance while Reducing Advertisement Overhead with Network-Wide Events Calendar: The Continuing Education Team and the Marketing Department have collaborated to achieve utilization of an online calendar to advertise upcoming educational activities and events within the network. Potential participants can access this calendar from the intranet and/or public web page. The calendar is capable of sorting event data by activity type, date, and location. Details for all conferences and recurring courses are presently posted. Participants will find save-the-date information, downloadable registration brochures, and other details regarding continuing education events.

Redesign of the CE Team: This year four new staff members were recruited to join the Continuing Education team. Both of the CE Coordinator positions were replaced in addition to the creation of an Administrative Coordinator to support data collection, attendance tracking, registration and promotion. We added a Medical Educator position, which offers the opportunity to expand upon our initial collaborations with quality improvement, identification of more detailed needs assessment, and incorporation of methods to measure program outcomes. We see the medical educator as a key resource in supporting the desire to measure outcomes beyond the base level of participant satisfaction to incorporate measurement of changes in our learner's competence, performance and patient outcomes.

Opportunities:

CE Rapid Improvement Event and lean experiments: The Continuing Education team hosted a Rapid Improvement Event (RIE) around the Continuing Education Approval Process. We invited customers of our process comprised of current and past CE activity planners as well as Division of Education colleagues and individuals serving as outside eyes to participate. This group met to map out our current state, identify our customer, pinpoint value added and non-value added steps in the process and to begin a root cause analysis of key problem areas in the process. The Continuing Education team will proceed by engaging in lean experiments to ‘test’ a more efficient way of obtaining required information for CE applications. Participants of the RIE will be invited to shadow these experiments to give feedback on the new methods tested. Measurements will be taken to identify the effectiveness of our experiments.

Priority	Problem/Root Cause	Countermeasure	Plan	Lean Tool	Outcome
1	Existence of customer's CE process knowledge. Role Confusion	Define (true) customer's CE role to the goal for CE to focus on credit approval for finding a successful answer?	Identify appropriate clarification for credit approval.	Standard Work: Proper Policy Charting	
2	Imprecise Process: Project Deliverables not Utilized	Define deliverable goals for credit approval and how they are utilized.	Identify what steps are utilized and structure for each.		Current State Diagram?
3	Document creation skills. No process to review or add to the current document.	Identify system to review document creation skills. Current state to review and add to the current document through proposal and testing.	Review system to review document creation skills, including proposal and testing.		
4	Submission of documents for complete document submission.	Identify system to review document creation skills, including proposal and testing.	Review system to review document creation skills, including proposal and testing.	Standard Work	
5	Process to review documents. No effective method for submitting documents regarding capabilities and requirements.	Identify system to review document creation skills, including proposal and testing.	Review system to review document creation skills, including proposal and testing.	Standard Work	
H Hold M Hold	Initial Process No Standard Work	Define Standard Work	Define Standard Work	Standard Work	Standard Work
	Submission of documents for complete document submission.	Identify system to review document creation skills, including proposal and testing.	Review system to review document creation skills, including proposal and testing.		

Foundations of Collaboration with Quality: Continuing Education has taken steps toward opportunities to collaborate more with quality assurance to provide educational opportunities identified as needs for the network. The Continuing Education Manager attends the Quality Improvement Team meetings to identify learning needs for the organization. The Continuing Education Manager and the Director of Quality participated in a Lateral Services shadowing experience in order to learn more about collaboration opportunities between our departments. The CE team participated in 3 webinars offered by the Alliance for Continuing Medical Education titled: *Building CME into the QI Process: Using Education as an Intervention for Improvement*; *Building QI into CME Processes: Using Performance Measures and Integrating Quality Improvement* and *CME in Your Institution: From Partners to Technology*. Finally The Division of Education Chief; Director of Quality; Manager Continuing Education; and CE Medical Educator attended a Regional Forum hosted by the ACCME to discuss “CME as a Bridge to Quality”.

Continuing Education Business Plan: In order to better compare our capabilities and services to other hospitals, independent medical education companies, and national trends for continuing education, the DOE has begun the development of a working business plan. The business plan currently highlights the LVHN DOE mission, goals and objectives, operational plan, organizational structure, current services offered and services that could be offered in the future. Additionally, the financial plan developed a more detailed budget template and outlines potential revenue streams and approximate revenue gained through offering particular CE services. Identifying costs for services and programs will enable the DOE to better focus and apply resources.

Standards for Registration Payments: The Continuing Education team will be researching industry practices regarding registration and payment for conferences and other activities assigned credit. As part of the preparation for implementing eCommerce to allow online

registration and payment; registration policies will be created. These policies will include: payment options, calculating registration fees, cancellation/no show, refunds, and discounts. Establishment of these policies will ready the team for accepting payment online as well as provide a standard by which all programs offered follow similar procedures regarding payments.

Implementing Online Registration and Integration with Calendar Service: Expanded use of eLearning System and the Active Data Calendar is being tested, including e-mailed event reminders, links from bulletin board notices and the eLearning System as well as potential interface to click and register as part of the upcoming eCommerce capabilities. The continuing education team presently posts CE event information in multiple locations and is looking to use the Network Events Calendar as a central resource for activity information and promotion. Moving all registration to online will eliminate phone based support and the costs of check processing.

Institutional Accreditation for Social Work Credits: The State Board of Social Workers, Marriage and Family Therapists and Professional Counselors allows for the consideration of organizations who offer multiple courses and programs for social workers and clinical social workers to become pre-approved providers. The Division of Education CE team is collaborating with representatives from the Department of Psychiatry and Case Management to compile and submit documentation requesting pre-approval.

Trends:

Eliminating Conflicts of Interest created by Commercial Support: Since it's 2007 response to the U.S. Senate Finance Committee, the ACCME has testified in front of the Institute of Medicine as well as the U.S. Senate Special Committee on Aging regarding conflicts of interest in CME. These organizations are inquiring about the effectiveness of CME and it's ability to remain independent of commercial interests. The ACCME has taken the following steps to strengthen its enforcement of the Standards for Commercial Support, in order to further safeguard CME's independence, and increase the system's transparency and accountability.

- A web-based portal to collect data about organizations, activities and program financing. This data will enable ACCME to create a process for sampling, surveillance and on-site monitoring of CME activities.
- Accelerated enforcement for providers who are out of compliance with the Standards for Commercial Support. Improvement plans must be submitted within weeks of the findings, demonstration of compliance must be within 6-12 months.
- This month, more information than before will be disclosed on the ACCME's web site about providers including their accreditation status, whether or not they accept commercial support, the number and types of activities produced, the total number of participants and other details.

Commercial Supporters Now Reconciling Unrestricted Educational Grants: Commercial supporters are coming back to request records for activities as far back as 2005. These requests are a part of their event reconciliation process. Reconciliation of unrestricted educational grants can include requests for handout materials, evaluation summaries, outcomes measurement data, and documentation of expenses. Companies are checking to see that activities were held as indicated, funds granted were used for the purpose indicated in application documents, and most recently are looking to see that the education delivered was effective through measurement of identified outcomes.

Goals:

People: Participate in professional development training in order to incorporate useful tools for continuing education team members.

- Attend Crucial Conversations training and share learned strategies with team.
- Attend DOE project management session and identify strategies for team to take advantage of.
- Support staff incorporation of SPPI principles and A3 management.

Service: Improve CE request and project turn around times by applying SPPI methodology.

- Complete CE RIE work and identify 1 or more proposed countermeasures to measure, document and execute.
- Establish 1 to 3 metrics to measure the effectiveness of countermeasures executed.
- Develop, document and implement standard work around proposed countermeasures and the 'target state'.

Quality: Establish opportunities for targeted integration of network quality initiatives into continuing education programming.

- Investigate 'top 5' priority areas from quality and incorporate these initiatives into CE activities.
- Explore data collection methods at LVHN to identify data sources that can be accessed by CE in needs assessment and outcomes measurement efforts to improve quality.
- Engage CE advisory board by establishing feedback opportunities to address quality.

Cost: Utilize consistent metrics and analytics for continuing education.

- Ensure implementation of Level 0 and Level 1 metrics across CE activities.
- Establish meaningful metrics for CE to contribute to a Division report card.
- Standard work processes documented for collection of metrics and mechanism to use data for improvement established.

Growth: Ensure preparedness for implementation of eCommerce for CE.

- Investigate necessary process changes and ensure documentation of new process/policy for CE.
- Pilot 1-3 CE events through eLearning troubleshooting to ensure full functionality.
- Oversee transition of CE events to eCommerce for registration and payment.

eLearning

Along with the infrastructure to administer and support our eLearning System, the eLearning section is staffed with instructional media developers, e-learning designers and instructional technologists. This team collaborates on the development of multi media based learning products.

- 10,784 enabled eLearning System users
- \$20.51 license cost per user
- 2,003 minutes of online content was developed
- 800 minutes of instructor led content was developed
- 60 new learning activities were developed
- 73 development requests our in queue waiting

Services:

- Provide instructional design consultation
- Provide templates and models for general education design
- Online content evaluation, design and management
- Production of educational materials including multimedia
- Integrating technologies into education solutions

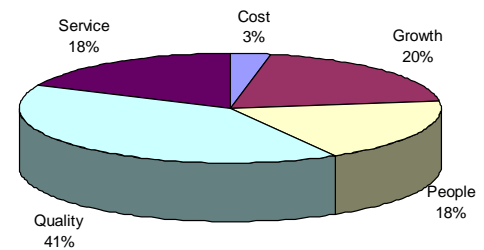
Accomplishments:

eLearning Project Summary

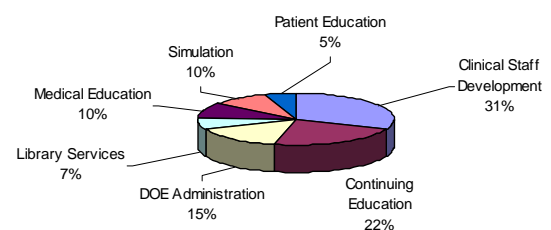
DOE staff took the lead on the analysis, design, development and implementation of 78% of all eLearning projects. Over time, we expect a shift towards more consultation as we actively pursue a train-the-trainer model to expand capacity and to meet demand. Since platform Go-Live on July 1st, 2008 the following has occurred:

- 81,000 hours of on-line courses were consumed by Learners with an average on-line experience typically lasting 24 minutes.
 - 779 different educators created 3727 different Activities within the LMS.
- By Activity Type:
- 267 Courses (online courses)
 - 538 Knowledge documents (PPT, DOC, MP3, etc.).
 - 82 In Service (used to document what was covered and who attended)
 - 512 CE Courses
 - 87 CE Series
 - 910 ILT Courses with 960 ILT Classes (scheduled offerings of ILT Courses)
 - 60 Different Curricula
 - 37 Virtual Classroom (online web based synchronous) Sessions
- 727 users have entered 2,847 self-reported training Activities part of their electronic transcript

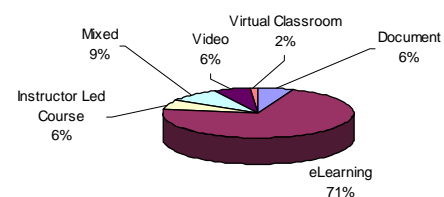
Project Alignment to LVHN Priorities



eLearning Collaboration Across DOE Sections



eLearning Project Types



Survey of 1,193 employees using the eLearning System provided the following feedback:

- 50% were clinical staff; 50% were non-clinical
- 15% were managers; 85% were non-managers
- Approx. years of service at LVHN is 12 years
- 181 # of individuals claiming involvement in the creation/delivery of education

There are some real benefits of using eLearning for your LVHN training. Do you see the value in taking eLearning courses that . . .

- | | |
|--|-----|
| ■ are mandatory in nature, and are offered on-line vs in a live classroom | 94% |
| ■ are available for review at a time that suits your personal schedule | 95% |
| ■ are tailored to your job and/or location | 94% |
| ■ support centralized tracking of CE credits (CEUs) | 88% |
| ■ allow you to print certificates and transcripts on demand | 94% |
| ■ makes use of multi-media (audio and video) to enhance courses | 89% |
| ■ gives you the option to review course content at your own pace | 97% |
| ■ support the option to take courses from home | 82% |
| ■ give you the option to add Self-Reported Training to your transcript for training events attended outside of the eLearning Management System | 89% |

- 3.93 - Learners on a scale from 1 to 5 rated their level of comfort w/ the eLearning System
- 3.32 - Managers on a scale from 1 to 5, rated their level of comfort using the system

ACT 13 modules: Designed and implemented a "just in time" eLearning module with video demonstrations educating staff on how they should respond to ACT 13 events. This module includes: communication of bad news, non-verbal communication, DOs and DON'Ts regarding how to respond in these situations.

Annual Core Curriculum 2008: The eLearning Team designed and developed replacement modules for all of the previous de'Medici content. Working with our in-house Subject Matter Experts and external vendors to convert the entire curriculum and update content and design. Two different sets of content were created for clinical and non-clinical learners.

OSHA 2009 Annual Training modules: Produced seven (7) online annual mandatory eLearning training modules that fulfill the OSHA training requirements for non-clinical staff and staff who have patient contact. This year's OSHA training was the highest compliance of staff completion of record.

- 94% complete - Non-clinical staff
- 91% complete - Staff which has Patient Contact
- >18,000 hours of online training w/ average engagement of 20 minutes per module within the curriculum

I completed the e-learning Core Curriculum yesterday ... you have all done a tremendous job with these modules. They look terrific and I am super impressed with the way the information is communicated. This is truly first class. Thank you all. It is a pleasure working with all of you.

- Don Hougendobler, Director Safety

The Joint Commission 2009 Annual Training modules: Produced three (3) bundles with a total of eleven (11) online annual mandatory eLearning training modules required for all employed LVHN staff to complete in order to meet Joint Commission regulations. (Note: This curriculum was released on August 4, 2009; no data is available at this time.)

Blood Administration module: Provided consultation on the development of an eLearning module covering the blood administration process. Video production development and graphic support was also provided.

Fluoroscopy modules: Worked with 3rd party vendor to redesign 3 fluoroscopy courses that are required by Med Staff services for certain physicians based on their credentials and area of responsibility.

Harvard Manager Mentor: Published a set of 40 on-line courses licensed from Harvard Business Review. Includes topics such as: Assessing Performance, Thinking Strategically, Capitalizing on Change, Managing Diversity, Leading and Motivating, Coaching, Delegating, Finance Essentials and Giving and Receiving Feedback.

ICU Resident Training modules: Development of five eLearning modules which will educate residents on common illnesses and medical procedures encountered during an Intensive Care Unit rotation.

Leadership IQ modules: 20 leadership eLearning modules were purchased from an outside vendor and integrated into our platform. Target audience includes mid-level managers and those who aspire to join the ranks of leadership.

Learner Mode Basics module: Learner Mode Basics is a brief tutorial that walks users through the most common tasks performed in Learner Mode of the eLearning System. The goal of the course is to help users feel more comfortable and have more confidence using the eLearning System. The course uses a combination of tutorials and a scenario-based final assessment to deliver and reinforce the information. The average on-line experience for each Learner was 34 minutes as they honed their eLearning navigation skills.

I just wanted to say that I had a bit of time to work with eLearning today and it is coming together. The PCS User's Guide was very helpful and I had no challenges searching the catalog, registering two of my staff for their mandatory annual courses or viewing the users activity with the system. ... I will continue to encourage [the PCS] to use the guide. We will get through this and it will become so easy for us, I'm sure.

- Debra A. Peter, Patient Care Specialist

MRI Safety module: Safety module targeted to a broad clinical audience which teaches the principles of safety for staff working or transporting patients to the MRI area.

OASIS Scoring for Pain Management videos: Provided consultation for the development of a homecare staff educational video featuring case scenarios which demonstrate how staff should appropriately score a patients' response to the question on their level of pain.

Restraints Education for CRNPs module: Development of an eLearning module which educates nurse practitioners on the current regulations for the use of restraints, proper use of restraints, ordering restraints, and documentation requirements for face to face evaluations for patients in Medical Surgical restraints and Behavioral Management and Seclusion restraints. Completion of the course enables NPs to apply to have their credentials updated to allow them to write restraint orders.

Waste Disposal module: Development of an eLearning module which educates staff on proper waste disposal and handling for regulated medical wastes and recycling.

Articulate Software Training Workshops: A half-day hands-on workshop was continually held to train those who wish to create eLearning courses using the Articulate Presenter and Quizmaker software programs, as well they learned how to upload their courses into the eLearning system.

In-Service eLearning training for I/S Support Center personnel: Over the course of several weeks we provided one-on-one training and custom documentation to Information Services Help Desk technicians to enhance their Level 1 eLearning support. We also provided documentation to be used in Primus Frames for Help Desk reference.

Learning Blitz Presentation: Presented eLearning training for Department Heads to orient them to the basic manager functions.

Manager Training (Virtual course): Developed an eLearning System manager training course and conducted this course using Virtual Classroom technology.

PCS Train-the-Trainer workshops:

Conducted a series of workshops to train 20 PCS super-users on a series of 10 main administrator standard work processes of the eLearning system. Prepared and published 10 Quick Reference Cards to accompany trainings.

Thank you so much [for the updates to the code orange video]. We used the draft at last week's program and found it very useful, especially for the carry techniques. The students were able to pick up the techniques faster than in the past. I don't know if it was just the group of students, but I think it had to do with being able to see the demonstrations so well on tape. Thanks again.

- Karen Peterson, Patient Care Specialist

PCS Validator Training/ Validation Sessions: Created an eLearning performance check list with target behaviors for the PCS. Coordinated and managed one-on-one validation session conducted by DOE staff for PCS eLearning super-users who agreed to be validators for their peers. Follow-up observations were conducted by DOE staff as standard work was fed forward.

Workshop on Uploading Documents to the eLearning System: A hands-on monthly workshop for those staff across the network who wish to learn how to upload documents or post live registration sessions to the eLearning system.

DOE Cross Section Collaborations: The eLearning team completed several projects that illustrate the success we can have by matrix-ing our resources across functional teams to design learning solutions:

- *Basic Dysrhythmia modules* – Conversion of a majority of content within the 2 day Instructor Led Course into 11 eLearning modules with Learning Guides and Student Workbooks incorporated, as well as created a cumulative post-test for this course.
- *Central Lines module* - This module is a part of the larger Central Lines curriculum and covers communication practices for collaboration at the bedside. The three part , CE accredited eLearning curriculum includes video scenarios designed to introduce physicians, residents, nurses, nurse practitioners, and mid-level providers to the new procedures that can be used to education staff on effective communication strategies during central line procedures.
- *Managing to Learn A3 Thinking modules* – We developed 7 modules which educate staff on the A3 Thinking curriculum, based upon the teachings of John Shook's "Managing to Learn". Upon completion of these modules, the learner can obtain Continuing Education credits.

Code Orange Training Video:- This 30 minute video which demonstrates approx. 20 patient interaction techniques and scenarios used by Behavioral Health personnel, was re-formatted to better suit the Instructor-Led course needs.

Perioperative Safety Course Video: Production of 5 video demonstrations showing best safety practices in the OR. These video elements will then be added into the Simulation Teams Instructor-Led Perioperative Safety Course.

Cultural Competency Curriculum: Provided instructional design consultation to the committee assessing the cultural competency education for the network.

DOE/CHHS Staff Development Course Implementation: Coordination and daily management of multiple staff development courses being offered for Division of Education and Community Health staff. Consulted with LCCC on needs assessment and bundling of courses to meet staff skill gaps.

DOE Web Site Development: Ongoing updates to the Division of Education intranet sites. Re-branding of DOE templates and banners in-line with new corporate identity.

Simulation Center A/V Support: Provided consultation with the integration of new technology into the DOE Simulation Center.

Custom Report development: Developed 52 custom reports within the eLearning System Report Manager. Network wide custom Compliance Reports were developed for OSHA, TJC, Chest Pain and DEP. Corporate compliance, New Hire training compliance and enhanced management reports were created upon request.

Diploma Customization: Custom code implemented to allow multiple CE diploma types based upon accreditation. This enables the continuing education team to use eLearning for all of their educational activities.

I want to thank you for [your] help with finding a better way to track the Interpreter Annual evaluation. [You have] done an amazing job in helping me keep track of this in a more time efficient manner. ...Having the annual Interpreter evaluation tracked via E-Learning is going to be a tremendous help in managing over 140 employees and their annual evaluations.
- Josefina Clark, Coordinator of Interpreter Services

External Reporting Customization: Developed queries and reports to expand the reporting capability of eLearning data beyond what was offered in the basic system package. Nine custom reports and 65 queries can be used to generate pivot table reports. Such as *Core Activities Completions/Exceptions* for all the cost centers, *Average Duration Report* containing Elapsed Time metrics for 2009 OSHA Core, and *Chest Pain Compliance reports* for the Chest Pain site visit.

Non-Employee System Access - Provided access to eLearning system for certain non-employees. This includes all physicians and certain allied health professionals, LVDI and LMIC.

Clinical Staff Development Orientation Support: Assist in updating the standard orientation documentation for the Clinical Staff program and creating an interactive CD menu to enable indexed access.

Photography (Non-Marketing) Administrative Policy: Created an Administrative Policy regarding the proper use and protocols when producing non-marketing video and photographic materials.

PRIDE Program in Context of Employee Evaluation Process: Posted documentation on changes to standard work process and forms through the eLearning Catalog.

Templates and Standards Development: Created PPT templates and standards guidelines for creating eLearning courses. Resources can be used by vendors or LVHN employees who create eLearning courses. The templates and standards ensure consistency in look and feel for all eLearning courses. The templates are also consistent with the new LVHN branding and color scheme.

Division of Education Technology Support: Provide on-going technical support to staff who are utilizing the various technology available within the Division of Education classrooms and labs.

GI Lab Video Support: Assist in setting up video recording equipment to capture resident/patient interactions. This footage will then be viewed by the Program Director as a means to evaluate the communication effectiveness of the resident(s).

Remote Content Server Integration: Configured an in-house eLearning server to act as a Remote Content Server to the externally hosted eLearning platform. The RCS gives us an enhanced capability to deliver high-bandwidth video within online courses without performance degradation.

Performance Improvements:

Providing Quality Customer Service and Efficient Project Prioritization: Utilized the RIE process to map out the current and proposed rework of the teams project request value stream. We have since implemented the resulting process and technology enhancements which have lead to the easier identification and prioritization of network-priority projects. These enhancements include the redesign of our online project request form, which in consultation with Strategic Planners, now includes specific network alignment questions and project scoring criteria to aid us in this project request screening and prioritization process. We have also enhanced the technology used to tracking the project requests and those projects in development so we may better identify team resources and project timelines for development.

Adapting to Multiple Learning Styles using Whole Brain Thinking: Provided an orientation of the Whole Brain Thinking model to division staff during a Division monthly meeting. This model assists individuals in understanding their own thinking style preferences, and opens the door to improved communication, leadership, management, problem solving, decision-making, and other aspects of personal and interpersonal development. Engaged in on-going consultation with DOE teams to integrate this model within respective educational venues.

Reducing Costs of Registration Overhead using eCommerce Proof of Concept: Perform proof of concept testing of the eCommerce functionality within the eLearning System to confirm that it will meet the needs of continuing education to replace the current process of processing CE event registrations and accepting checks from outside health care professionals. Standard work to be developed as the feature ramps up for production use in FY10.

Improving New Hires Compliance Rates for Mandatory Annual Training: New hires are required to complete the annual mandatory training. In some cases they need more information than existing employees. Decision was made with SMEs to offer comprehensive courses to new hires and possibly different content to existing employees. Created a special curriculum and standard work for new hires to navigate core courses within their first 30 days of employment. Created 3 curricula - OSHA, TJC and Corporate Compliance.

Improving Training Compliance Rates and Outcomes through Smaller Bundling: The core curriculum has been re-designed and re-bundled for both the clinical and non-clinical staff. This allows learners to take specific courses that are relevant to their job role. Bundles are delivered throughout the year to encourage more frequent system access and to pace required engagement experiences. Each bundle is sponsored by an Executive Call to Action.

Creating Standard Work for PCS eLearning through RIE: Coordinated a multi-disciplinary team of 10 including PCS, PCC, DOE, eLearning stakeholders, and facilitator to evaluate the PCS use and training in the eLearning system. Generated standard work documentation around key tasks.

Improved Compliance Rates through Communications plan for Annual Training Courses: Creation of Check Up articles, intranet splash pages, sponsors email messages, Executive Calls to Action, Medical Staff Progress Notes articles and digital signage displays to continue to market the eLearning platform roll-out.

Increasing Accessibility for Employees with Virtual Classroom Integration: Coordinated the necessary tasks between WebEx, SumTotal and LVHN to add web conferencing integration into the LMS. Enabled, configured, tested and documented this feature.

Providing Better Customer Services through TAO Public email: Established a public email box to open another more familiar avenue for users to communicate tips, complaints, suggestions, etc. to the eLearning team. All members of the team receive in-bound messages and responsibility for replies is shared by all.

Making eLearning Tips Accessible to PCS's through Bulletin Board: A primary resource for the PCS community which is open to all educators within the network. Includes expert tips to optimize system usage.

Informing Large Group on ECCO and Critical Care Documentation Updates: Communication of updates to Critical Care and ECCO program course documentation (PDFs) and mass duplication and distribution of CDs.

Creating a User Friendly Front End for eLearning System Quick Links: The "News" section of the eLearning System has been updated to include "quick links" to frequently accessed pages. Users can quickly click on links to view their Required training, Assigned training, courses they have started or signed up for, Training Transcripts and courses that they have completed. This was changed to improve navigation in the system and make it easier for users to access the information that the need. The "News" section

Thanks again for all of your hard work on [the OBGYN recruitment productions] project! You and your department do a great job in making us look good!
- Joseph Patruno, MD Chief OB/GYN

also features links to eLearning Help (FAQ's, Web tutorials, job aids, eLearning web site, Learning Lab dates, Support Center contact information and training opportunities) as well as announcements about mandatory training requirements.

Standard Work for CE Enduring Materials Process: Collaborated with the CE team on process and implementation of standard work around creation of CE accredited Enduring eLearning Materials.

Automating Division Asset Report Tracking: Track and report on the standard equipment included in the FY '09 Division of Education - Asset Reports.

Reminding Employees with Automated System Notifications: Confirmed infrastructure and support readiness to automate email Notifications within the eLearning platform. Email Notifications are generated upon Assignment and triggered as due dates near and Assignments become overdue.

Improving Student Collaboration Online: Researched, configured and documented the collaboration center capability of the LMS to better enhance blended learning activities.

Improving Employee Communications with Integrated Network Events Calendar and Digital Signage: In coordination with Marketing, the Division of Education maintains and updates the educational announcements on the digital signage LCD screen located outside of the LVHN-Cedar Crest employee auditorium. We also integrated the digital sign with the network events calendar.

Opportunities:

Advance Diabetes Care/GN Diabetes Orientation Modules - Conversion of 2 classroom lectures into Blended Learning. Staffing is unable to keep up with demand, as well as the Hospital may be going for Diabetes's certification in near future which requires ALL clinical staff to be educated in Diabetic care. A blended approach or simple Power Point files for some material is best due to frequency of needed updates especially drug information.

Annual Training modules - Corporate Compliance 2009: This third bundle of annual mandatory training will include a refresh of content within the 5 modules from the prior year and the addition of a sixth, new module.

Annual Training modules (OSHA 2010): Curriculum refresh to include latest regulatory changes. Updates will also be folded in the new hire curriculum. This is scheduled for release in June of 2010.

Annual Training modules (TJC 2010): Curriculum refresh and catch-up with outstanding TJC mandates. Release cycle to be moved to February/March of each year to more closely align with annual requirement updates.

CME and CNE Application Process Module: Development of an eLearning module demonstrating the CE application process.

Hourly Rounding Course: This will be a collaborative project with CSD staff. There are 60 in-patient care areas that are required to do hourly patient rounds during the day-time shift and rounds every two hours during the night-time shifts. The policy changed as of July 1st, 2009 to require hourly rounds 24 hours a day, to establish a standardized procedure following lean methodology. Research shows that rounding improves patient satisfaction, cost and use of time. This concept is part of PCE and was introduced as a method to improve patient satisfaction and improve quality of care. DOE will likely provide eLearning consultation to the PCS who sits on the planning team and coach through use of the Articulate software. Video production will be coordinated by our Instructional Media Producer.

Lean 101 Blended Learning: Convert the Lean 101 workshop to eLearning and/or blended eLearning workshop to expedite delivery to the masses. Potential to work with 3rd party vendor to create an engaging on-line interactive experience with potential to replace the facilitated workshop exercises.

MedCom courses: Purchased a set of 53 modules of clinical content from a leading producer and distributor of multi-media healthcare education. MedCom produces content for healthcare professionals, patients, and health-conscious people everywhere. They are the largest producer/distributor of nursing education video programs in North America, and their programs have won over 50 major awards for excellence, including the prestigious Emmy award. We are in the process of identifying Subject Matter Experts for each, defining appropriate audience(s), target audience use (remediation, core learning, basic introduction, etc.). Once confirmed, modules will be tested and published into the eLearning System catalog.

Moderate Sedation: Required module for physicians who need to be credentialed in Adult Moderate Sedation procedures.

OB Residency Recruitment Video: Development of an OBGYN resident recruitment video to be included into the updated 2009 Residency Recruitment DVD.

Pain Management Education Initiative & Flinders Tool Education: Online pain education modules meeting the requirement of the Joint Commission "Decade of Pain" initiative. Documentation of education is required for regulatory reasons making use of the eLearning System functionality essential. Also desire multiple CE credits for various clinical groups.

Research Standard Operating Procedure Modules: Work with 3rd party vendor to transition 25 Activity modules to our eLearning system within a structured curriculum.

Simulation Orientation videos: Production of 3 short videos: An Orientation video, simulation 'Code' run well, and a simulation 'Code' run poorly video.

Union Awareness: Consult with HR and serve as a liaison with outsourced vendor to quickly bring this content to LVHN management.

Education in Research Protocol Compliance: The network level research infrastructure needs some education modules for the training of research nurses and assistants in protocol that is compliant with FDA, our IRB, and study specific protocols, etc. Some of this may be purchased content if it exists and some will probably need to be developed to include local contact

information. While it is not mandatory that we do this training, if we make mistakes on protocols the network could have severe negative consequences.

eLearning Survey Action Plan: To assist in improving the delivery of the LVHN eLearning training, a eLearning survey was distributed along with the mandatory training which asked questions about the learners demographics, technological skills, which methods they utilize to receive educational information at LVHN, their perception of the benefits of using eLearning, as well as asked if they had any issues with using the eLearning system when completing this years mandatory online training. Based on the results of this survey, an action plan will be developed to further enhance the eLearning experience at LVHN.

EMI Integration: EMI currently oversees a large database that contains EMI class information (60% of the students are not LVHN employees). They need a web-based application that the team can share to record class dates, instructors, length of course, participates, grades, print sign-ins, certificates of completion, etc. EMI also takes registrations and credit card information from students. We will be assessing the viability of the using the eLearning platform to support these needs.

Governance: Work through the LMS Executive sponsor team to establish an eLearning Governance board for users to guide and prioritize eLearning, as well as organizational educational initiatives.

IRB Member Education Program Plan: Write an Education Plan for IRB to expand CME application to include 12 additional topic-based learning events for IRB members

Lawson HRIS Data Synchronization: Coincident with the migration from PeopleSoft to Lawson, ensure the upward compatibility of the HRIS data feed to the eLearning platform. Assess viability of using additional data fields to further distinguish user audiences by job role and location.

Trends:

Serious Gaming - Gaming with a Purpose: Game technologies are driving significant health and health care improvements. A new national initiative was launched this year to support studies that explore why and how game's influence health and to promote evidence-based design in health game development. The e-Learning team will closely follow the *Serious Gaming* trend and associated research projects examining interactive games that teach and reinforce patient-safety concepts in a novel way. One of the potential vendor solutions to be assessed includes a Canadian company, MedSenses. They have developed interactive video game-like simulation software that gives nurses a chance to learn and make mistakes in an online environment. The simulation offers patient scenarios and options for treatment. All actions will have reaction that could solve the problem or create other ones, some of which could lead to the patient's virtual death.

Web 2.0 and Mobile Technology: The Division of Education is exploring the access and use of web 2.0 and mobile technology as a means to develop, expand, share, and collaborate on learning content, which would further deepen the learning experience offered at LVHN. Today's students, health professionals, and patients use their computers and mobile devices to interface with the world. Using distribution channels like *iTunesU* lets you easily expand your curriculum,

delivering audio and video content to deepen the learning experience. There are many medical products that are now formatted for mobile devices and growing in common usage; many are "free" to medical students available through *iTunes* application services. Use of mobile devices for learning means a radical rethinking of what defines learning; for example the 1 hour lecture is redesigned as 8 five-minute micro lessons that can be bundled and unbundled by the student. "Learning bites" or what an instructional designer would call "learning objects".

SecondLife Social Networking: SecondLife is used as a platform for education by many institutions, such as colleges, universities, libraries and government entities. There are over one hundred regions used for educational purposes covering subjects such as chemistry, English and medical education. Instructors and researchers in SecondLife (SL) favor it because it is more personal than traditional distance learning. Research has uncovered development, teaching and/or learning activities which use SecondLife in over 80 percent of UK Universities. At least 300 universities around the world teach courses or conduct research in SL. New educational institutions have also emerged that operate exclusively within SL, taking advantage of the platform to deliver a high quality service to a world wide audience at low cost. *Info Islands* uses library programming sponsored by the Illinois' Alliance Library System and OPAL currently offered online to librarians and library users within SL. Another virtual continent called SciLands is devoted to science and technology education. While initially centered on the International Spaceflight Museum, it now hosts a number of organizations including NASA, NOAA, NIH, JPL, NPR, NPL, and a host of other government agencies, universities, and museums. In December 2008, the United States Air Force launched MyBase, a Second Life island overseen by the Air Education and Training Command. Second Life has also been adopted for foreign language training. While this sounds very exciting, finding pragmatic application for our corporate culture, local community and patients is what we would like to investigate. We want to drill through the hype and find the practical application, design implications and system support issues to consider these as viable learning platforms.

Goals:

People: Work with DoE, CHHSE and LVRA staff to plan, market and execute community and team building events.

- Represent LVHN by providing CSC support in various venues across Lehigh Valley.
- Plan and support 1 – 3 community events.

Service: Ensure establishment of Level 0 and Level 1 metrics to measure eLearning module performance. Negotiate standard question set and determine best method to collect, store and report.

- Confirm final Level 0 and 1 question sets. Determine optimal delivery method within eLearning platform.
- Document question set and delivery method for both internally developed and vendor developed eLearning modules.
- Embed Level 1 questions, execute delivery mechanism to store and review individual and summary data.

Quality: Participate in on-going CE RIE process and assess most viable Rapid Improvement Pilot(s) to move forward. Develop criteria to define success.

- Select and plan 1 or more CE Rapid Improvement Experiments around proposed counter measures.

- Provide oversight for development of std work and improved process flow. Build Communication Plan and feed forward.
- Review data in support of success measures. Modify standard work, as appropriate.

Cost: Ensure production readiness of eCommerce feature and work flow changes between eLearning , CE and DoE business support teams.

- Establish cross functional team to confirm and document internal and external process changes.
- Pilot 1-3 CE events, testing full functionality of technical and cross team process flows.
- Develop plan, based on timing of promotions, to move all feasible CE events to production eCommerce.

Growth: Support Med Ed team collaboration with the USF Instructional Technologists group.

- Establish a mechanism to facilitate the sharing of planning documents around the use of Instructional Technology at USF.
- Oversee analysis of Sum Total feature set and platform options.
- Define standard content specifications within Governance framework.

Medical Education Development

As an accredited member of the Nation's Council of Teaching Hospitals of the Association of American Medical Colleges, LVHN has an established history of providing high quality education programs to developing healthcare professionals. Specifically, graduate medical education (GME) has been a valued tradition for more than a half-century at our hospital.

Services:

- Provide oversight of LVHN residency programs
- Support clinician faculty development
- Provide oversight of LVHN medical student programs
- Provide healthcare pathways for high school, college and graduate students
- Facilitate medical education research and performance improvement projects

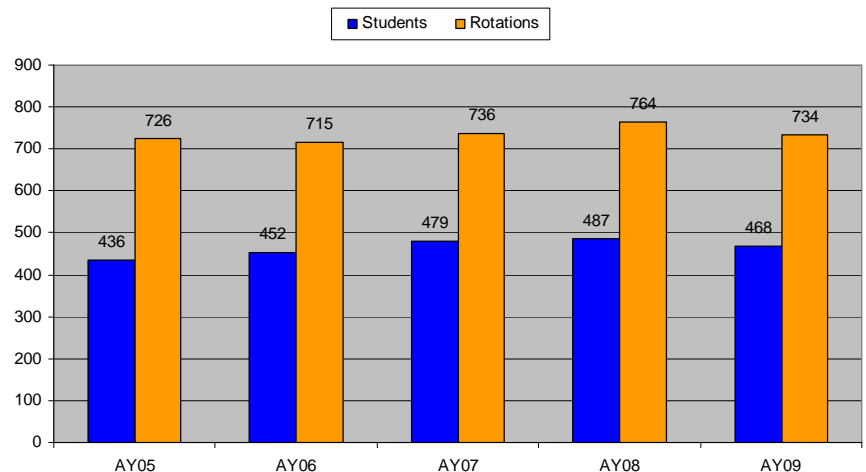
- 203 Residents and Fellows
- 75 Visiting residents
- 17 Accredited residency programs
- 13 Faculty development programs
- 286 Faculty development participants
- 734 Clerkship rotations
- 468 Undergraduate medical students and physician assistant students
- 7 Core clerkship programs
- 41 Elective clerkship programs
- 20 Evidence-based practice programs
- 160 Evidence-based practice student participants
- 6 Youth Education/Healthcare Career Pathway programs
- 35 Emerging Health Professional youth program participants
- 56 Research Scholar youth program participants
- 370 Health Care Career Discovery youth program participants
- 320 Shadowing/observation youth program participants

Accomplishments:

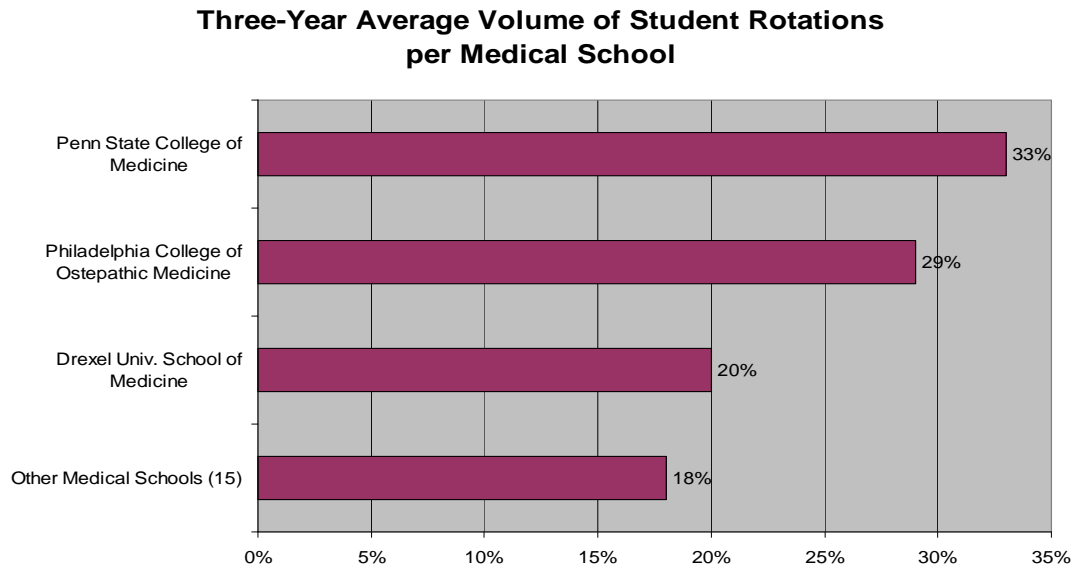
Undergraduate Medical Education: Over the last year LVHN provided 734 clerkship rotations to 468 medical and physician assistant students. On average, there are 75 medical and physician assistant students on LVHN's campuses at any one time.

Below are the number of students and rotational experiences that LVHN has provided over the last six years. Note: Numerous students have done multiple rotations.

Number of Medical and Physician Assistant Students and Rotations



Medical School Affiliates: Medical schools and accreditation bodies require medical students to rotate at designated teaching hospitals for clerkships rotations. LVHN works closely with our affiliate partners to coordinate, schedule, develop, and support student rotations. Below is the three-year average volume of student rotations per medical school affiliate.

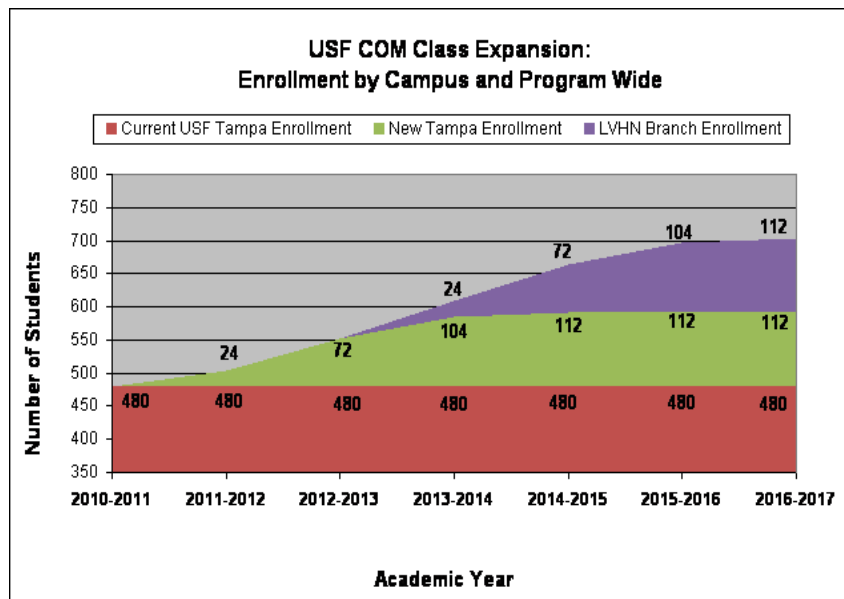


New Medical School Affiliate - University of South Florida Health

In respond to the impending physician shortage and the need to reform medical education and our national health care system, the University of South Florida Health (USF Health) has developed a partnership with Lehigh Valley Health Network (LVHN), and plans to develop a new clinical branch campus at LVHN. LVHN will serve as the clinical teaching site to a new USF/LVHN Health Care Leadership Track for third and fourth year USF medical students. USF Health will admit an additional 24-56

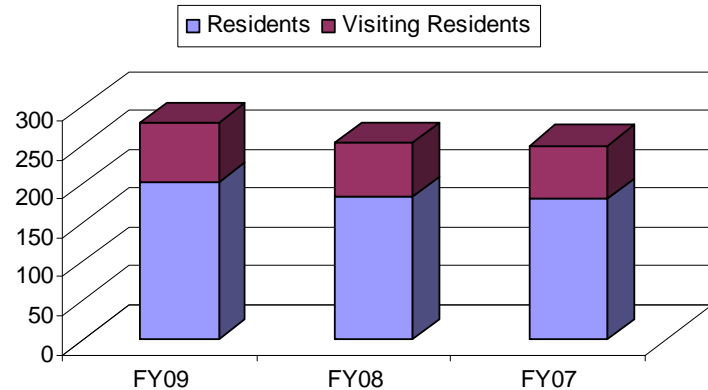
students/year. The mission of this unique Health Care Leadership Track is to train a cohort of medical students that will be on a professional trajectory to become the next generation of healthcare leaders. USF Health is comprised of four schools/colleges including a School of Physical Therapy and Rehabilitation Sciences and Colleges of Nursing, Public Health and Medicine.

As illustrated in the chart above, starting in 2011-2012, 24 students would be added to



the MS1 year at the Tampa campus. In 2012-2013, 48 MS1 students would be added to the Tampa campus. In 2013-2014 and thereafter, 56 MS1 students would be added to the Tampa campus. At steady state, the total increase represents an additional 112 students at the USF Tampa main campus and 112 students at the branch campus for a projected maximum of 224 students in the Health Care Leadership Track.

Graduate Medical Education: Currently, LVHN trains 203 residents in 17 ACGME, AOA, and ADA accredited residency, specialty and fellowship programs. LVHN has approximately 500 physician faculty. The Medical Education Development (MED) section in the Division of Education provides institutional oversight for the administration and development of these programs through the Graduate Medical Education Committee (GMEC), program and faculty development, academic development, and administrative functions.



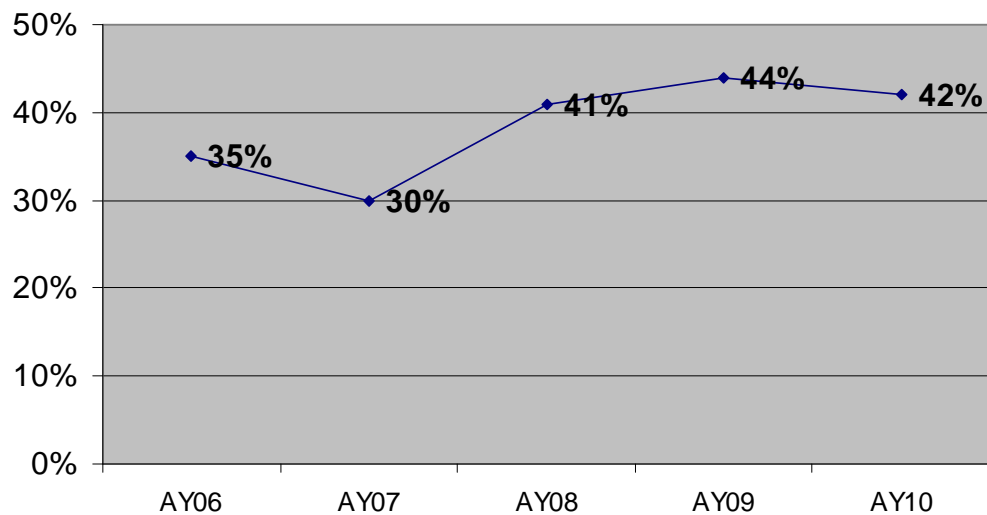
- 9 - ACGME accredited (M.D.) programs: Cardiology, Colon/Rectal Surgery, Family Medicine, General Surgery, Internal Medicine, Obstetrics/Gynecology, Plastic Surgery, Surgical Critical Care, and Transitional Year.
- 3 - AOA accredited (D.O.) programs: Emergency Medicine, Family Medicine, and Internal Medicine Internship (CC).
- 2 - Integrated Fellowships with Penn State College of Medicine: Hematology/Oncology and Pulmonary Critical Care.
- 2 - ADA accredited: Dental LVH-M, LVH-17th
- 1 - Newly Accredited Allopathic Program in FY09: Emergency Medicine (3 yrs)
- 5 - Re-accredited programs in FY09: Plastic Surgery (5yrs), Transitional Year (5yrs), General Surgery (4yrs), AOA Osteopathic Medicine Internship-CC (2yrs), Colon/Rectal Surgery (3 yrs)
- 5 - Internal Reviews in FY09: Colon/Rectal Surgery, Institutional Internal Review, Family Medicine, Internal Medicine, and OBGYN

2006 – 2010 Resident Match Summary

	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>
Match Positions Available	70	69	72	73	74
Allopathic / LCME Accredited Medical School	40%	57%	55%	53%	51%
Osteopathic Medical School	49%	20%	21%	34%	35%
International / Non-LCME Accredited Medical School	11%	23%	24%	13%	14%
Schools of Interest (# of student matches)					
Penn State College of Medicine	3	0	2	3	7
Philadelphia College of Osteopathic Medicine	18	17	15	11	12
Drexel University School of Medicine	3	2	2	3	4

Jefferson Medical College	4	1	1	6	2
Temple University Schools of Medicine/Dentistry	5	4	3	5	1
University of Pennsylvania Schools of Medicine/Dentistry	1	1	2	3	4
University of Medicine/Dentistry of NJ	5	7	3	0	4
Ponce / Univ. Puerto Rico Schools of Medicine/Dentistry	0	1	1	2	3
University of South Florida College of Medicine	0	0	0	0	1

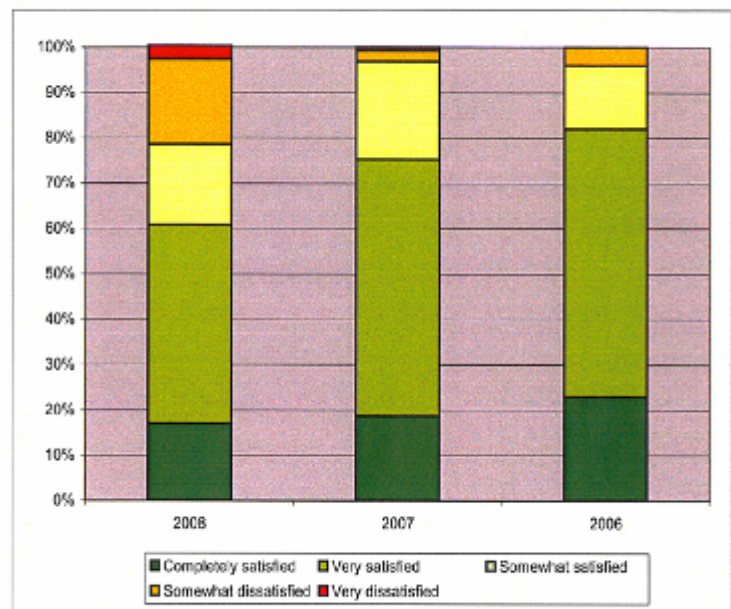
Percentage of 1st Year Matching Residents Who Completed an LVHN Clerkship



Resident Work and Learning

Environment: The Graduate Medical Education Committee (GMEC) is an advocate for resident satisfaction. The purpose of our resident satisfaction survey process is to assess and improve the learning environment for our residents. In addition to residency programs receiving data on their learning environment, this survey helps GMEC comply with ACGME Institutional and Common Program Requirements. 122 residents and fellows from eight GME programs participated in the survey including: Cardiology, Dental Medicine, Emergency Medicine, Family Medicine, General Surgery, Internal Medicine, Obstetrics/Gynecology, and Transitional Year. Below are

Overall Satisfaction Residency Programs



key observations and findings regarding overall resident satisfaction.

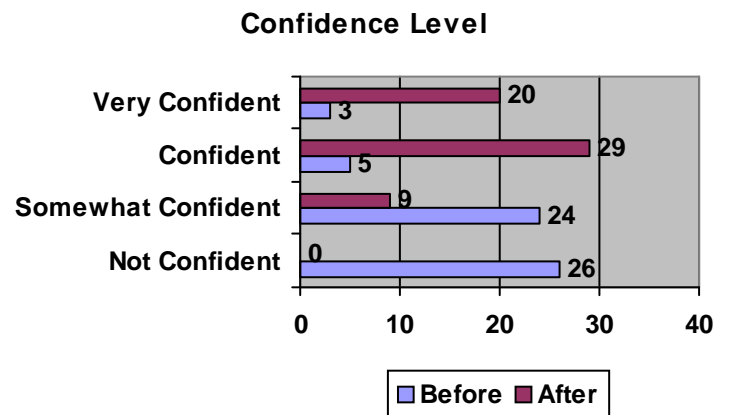
Comparison Summary:	AY 07	AY 08	AY 09
Participation Rate	76%	71%	64%
Overall Satisfaction Mean	3.98	3.90	3.54
Desire to Work at LVHN after Residency	4.24	3.69	3.33

Bottom 5 Mean Scores:

- My co-residents always have a positive attitude when performing their duties.
- LVHN has developed work/life policies that address my needs.
- My faculty regularly participant in journal clubs.
- My pay is fair.
- My opinions are sought before decisions are made.

Resident Education in Patient Safety and Quality - Central Lines Simulation Course: The purpose of this course is to prevent catheter-related bloodstream infections and complications by educating residents on insertion techniques, bedside collaboration and the five components of the Institute for Healthcare Improvement (IHI) Central Lines bundle. The course includes a half day simulation portion during which participants perform central line insertion on all three anatomical sites with mannequins, use sterile technique, use ultrasound for target vessel verification, perform the time out verification, and receive a checklist based competency evaluation.

A total of 284 residents, fellows, physician assistants and nurse practitioners have gone through the course since 2006. In the 2009 course, the 60 participants included residents, CRNAs, NPs, PA students and critical care nurse interns. A pre and post knowledge test was completed by 47 residents. There was a 19 point increase from pre to post knowledge test.



	Pre Test N=47		Post Test N=47	
Min	10	45.45%	13	59.09%
Max	19	86.36%	22	100%
Median	15	68.18%	20	90.91%
Mode	15	68.18%	20	90.91%
Average	15.04	68.38%	19.19	87.23%

Patient Hand-Off Communication: According to an Institute of Medicine report, communication failure between caregivers is the root cause for 60% of reported sentinel events. In response to this report and in alignment with ACGME Outcomes Project, Phase 3, the Division of Education designed, developed and implemented an e-learning module. The e-learning solution was designed to instruct and evaluate all first year residents on the knowledge and application of Patient Hand-Off Communication Standards. Before starting their orientation, 70 first year residents were asked to complete an e-learning module on Patient Hand-Off Communication Standards. The module included pre/post assessments and four video/audio interactive course lessons that included assessment and instruction on: a) Rational for Standard Communication, b) Hand-Off Communication, c) Explanation of SBAR Methodology, and d) Review of Scenarios. Evaluation was conducted before and after the course and at a six-month interval. Post-course scores showed improvement in residents' knowledge of Patient Hand-off Communications Standards. The curriculum team is reviewing course design to improve effectiveness, evaluation and methods for assessment of resident knowledge and competency.

[There was a] low ratio of learners to faculty, [providing time for] faculty tips. The training was delivered by physicians who had personal experience in what they were teaching us. They were very helpful and provided real-life feedback

Resident Performance on Core Quality Measures: Since 2004, The Joint Commission and Centers for Medicare and Medicaid Services have worked together to align core quality measures. Core measures track a variety of evidence-based, scientifically-researched standards of care which have been shown to result in improved clinical outcomes for patients. In FY08, 128 residents in four programs had contact with patients where core measures were applicable. To illustrate how residents performed in each core measure, the graph below is provided. The Quality/Patient Safety dept provides feedback to program directors on a quarterly basis.

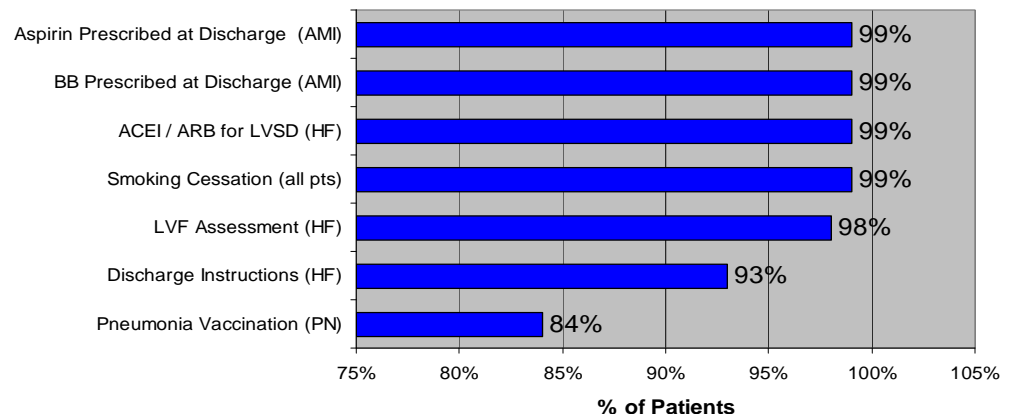
Other Resident Education in Patient Safety: All residents are required to complete the *Annual Core Curriculum* on the Learning Content Management System.

Resident Duty Hours: GMEC and each residency program have written policies governing resident duty hours that foster education and the safe care of patients. These policies are based on requirements mandated by each programs' ACGME resident review committee. The Duty Hour Policy for LVHN provides residents with a sound academic and clinical education that is carefully planned and balanced with

concerns for patient safety and resident well-being. Duty hour assignments recognize that faculty and residents have responsibility for the safety and welfare of patients.

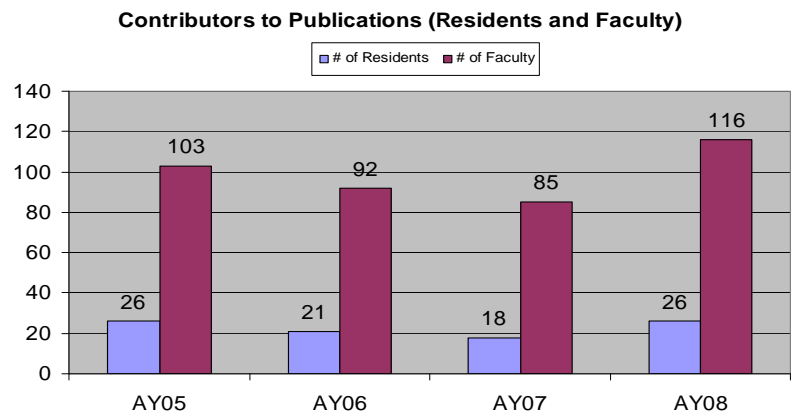
LVHN residency programs track duty hours through an electronic residency

FY08 Resident Performance on Core Measures

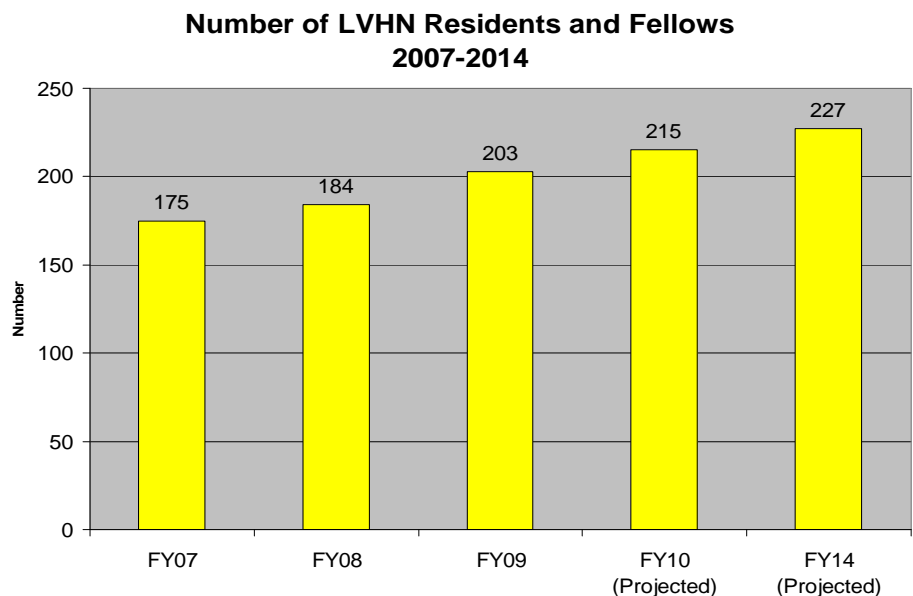


management system. Duty hour compliance reports are generated, analyzed and presented at GMEC on a quarterly basis. These reports identify problematic rotations. When violations in duty hours occur, program directors are required to report back to GMEC explaining details of the violation(s) and the plan to ensure that the violation does not repeat.

Graduate Medical Education Scholarly Activities: GMEC also promotes and advocates for an environment that promotes scholarly activity. The responsibility for establishing and maintaining an environment of inquiry and scholarship rests with the faculty, per ACGME Common Program Requirements. The chart illustrates the number of resident and faculty publications and presentations from academic years 2005-2008. Publications included peer-reviewed journals and book chapters. Publications with both resident and faculty authors were counted once in each category. Presentations include posters and oral.



Graduate Medical Education Growth: New and expanding GME programs are starting and some existing programs are expanding. In 2005, as part of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, the Centers for Medicare and Medicaid Services awarded LVHN 41 newly funded GME positions. These newly funded GME positions allowed LVHN to plan for programmatic growth that aligned to organizational strategy. Below is a projection of the number of residents and fellows who will be training at LVHN and the programs. Over the next four years, several clinical departments will add more residents and fellows or start new programs. Below is a summary of the residency and/or fellowship programs that are planning to expand or start a program.

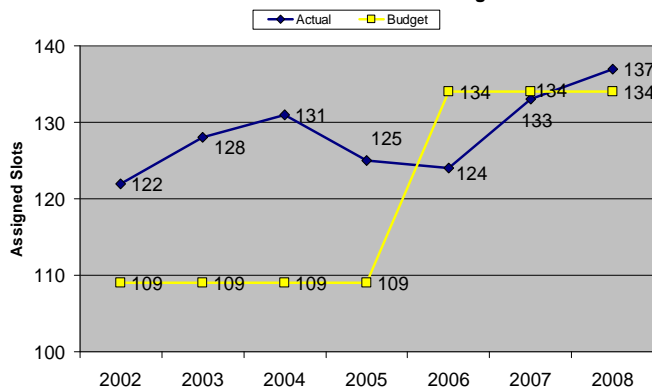


	FY08 (# of residents/fellows)	FY14 (# of residents/fellows)
Cardiology Fellowship	4	12
Colon/Rectal Surgery	2	2
Dental Medicine	7	7
Emergency Medicine*	43	56
Emergency Medicine Services Fellowship	1	1
Family Medicine*	20	21
General Surgery	23	28
Geriatrics Fellowship	0	3
Internal Medicine	52	52
Neurology (<i>site visit completed 10/30/08</i>)	0	6
OB/GYN	16	20
Palliative Care Fellowship	0	3
Pediatrics (exploring)	---	---
Plastic Surgery	3	3
Psychiatry (exploring)	---	---
Surgical Critical Care Fellowship	1	1
Transitional Year	12	12
TOTALS	184	227

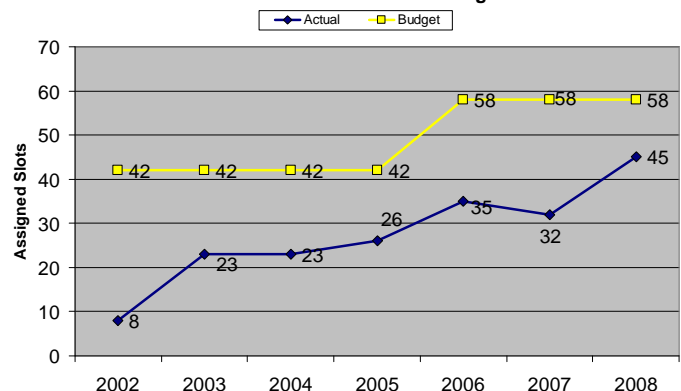
* Dually Accredited programs (allopathic and osteopathic)

GME Finance: Under the LVH-CC/17th Medicare number, indirect medical education GME reimbursements were capped at 109 resident FTE's (not equivalent to the number of resident/fellow bodies). Under the LVH-M Medicare number, indirect medical education GME reimbursements were capped at approximately 41 resident FTE's (not equivalent to the number of resident/fellow bodies). The GME Finance group (sub-group of GMEC) monitors FTE budget vs. actual counts and advises GMEC and Senior Management on plans that maximize GME reimbursements while improving resident education and clinical needs.

LVH-CC/17: Medicare Resident FTE's - Budget vs Actual



LVH-M: Medicare Resident FTE's - Budget vs Actual



Performance Improvements:

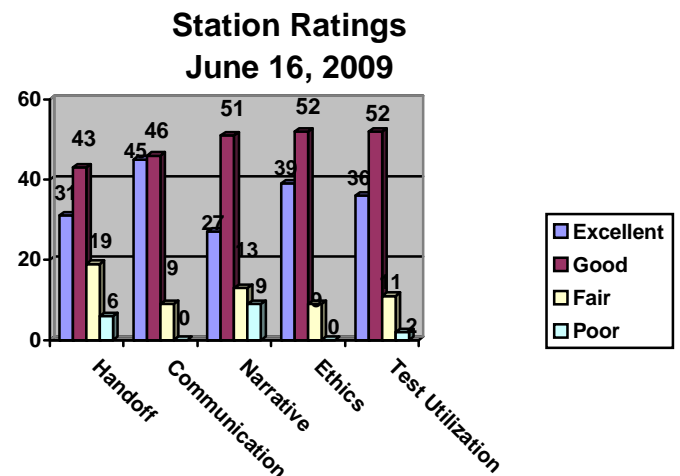
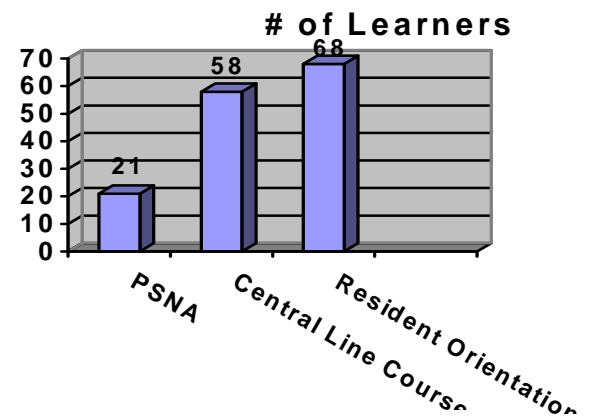
Improved Resident Orientation for Communications Standards, Professionalism, Ethics and Teams: A New Resident Baseline Assessment was introduced to the residents starting in June 2009. The orientation consisted of large group, small group and individual sessions. A total of 68 residents in 7 programs (Dental, EM, FM, Surgery, IM, OB/GYN, and Transitional) were assessed in 5 stations. Colleagues from Emergency Medicine, Ethics, Family Medicine, Hospitalist Program, Obstetrics/Gynecology, Pathology, and the Interdisciplinary Simulation Center helped with the development, coordination and evaluation of the stations. The 5 stations and 2 workshops included were:

- Station 1: SBAR – Residents were asked to call an attending to hand off the patient.
- Station 2: Residents were asked to communicate with a family member of the patient in station 1 (played by a standardized performer).
- Station 3: Narrative – Residents were asked to write about when they witnessed medical professionalism at its best or less than its best.
- Station 4: Ethics – Residents were given “Ethics in 9 minutes or less” paper case and questions.
- Station 5: Test Utilization – Residents were given a quiz to assess test utilization.
- Workshop 1: Working in Teams workshop
- Workshop 2: Evidence Based Medicine Workshop – Residents were given the Fresno Test of Evidence Based Medicine pre test at the start of the workshop.

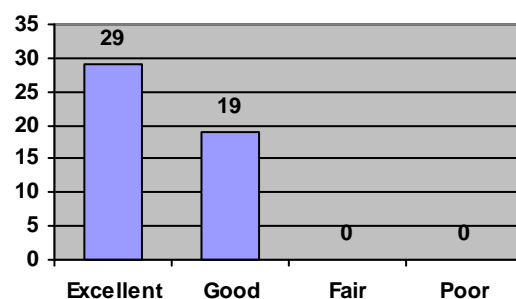
At the end of the orientation residents were asked to provide feedback. The overall experience was rated by 48 participants as good or excellent.

- Good (19) = 39.58
- Excellent (29) = 60.42%

Achieving Higher Levels of Resident Assessment using Standardized Patient

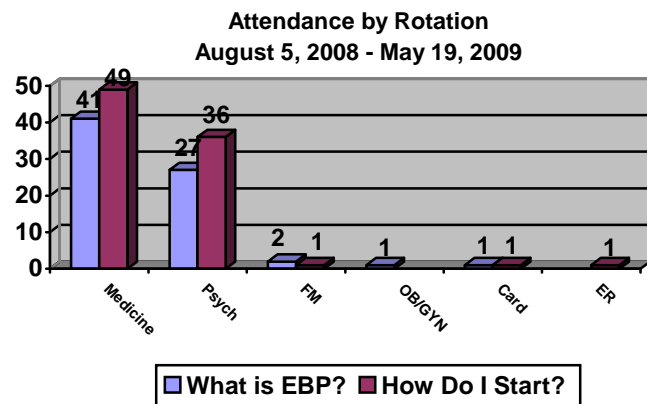
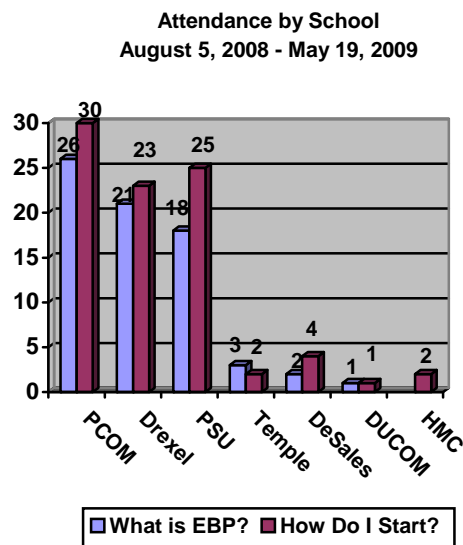


Overall Experience
June 16, 2009



Program: In April 2009 the LVHN Standardized Patient (SP) Program held its initial orientation with 2 standardized performers. The Mission of the SP Program is to deliver high-quality SP programming to train and assess healthcare learners at various stages in their education and training. The Standardized Performers have worked with OB simulations, PSNA Workshops, Central Line Course, Support Partner training and New Resident Orientation.

Improving Medical Student's Evidence-Based Practice: Medical Students and PAs were invited to attend *What is Evidence-Based Practice, and Why Do I Need to Know* and *How Do I Start to Research Answers to Clinical Questions* workshops held the 1st and 3rd Tuesdays of each month. A total of 72 participants attended *What is Evidence-Based Practice* and 88 participants attended *How Do I Start to Research Answers to Clinical Questions*.



Medical students and PAs were given the Fresno Test of Evidence Based Medicine assessment at orientation and following each workshop. A total of 21 students completed the pre and both post tests. A number of factors were identified as limitations and changes to the program will be implemented. The limitations included:

- Students do not always have enough time to complete the assessment
- Not all students are required to attend
- Students do not receive direct feedback

Creating Inter-Professional Faculty Development Program for Improved Teaching and Learning: With generous support from the Dorothy Rider Pool Health Care Trust, the Division of Education sponsors and coordinates workshops for all clinical educators (i.e. physicians, nurses, physician assistants, etc). This workshop series called, *The Teaching Leader Series*, has been designed to assess and build LVHN's capacity and capabilities for teaching and outcomes-based education. The following workshops were designed and delivered in 2009. Below is a sample summary of workshop outcomes.

- | | |
|----------------------------------|--|
| ▪ Giving Feedback | ▪ Difficult Feedback/Bad News |
| ▪ Interactive Team Communication | ▪ Small Group Facilitation |
| ▪ Adult Learning | ▪ Using Technology to Enhance Learning |
| ▪ Feedback and Microskills | ▪ Narrative Medicine |

■ Ethics: Peer and Patient Care

■ System-Based Practices and Healthcare

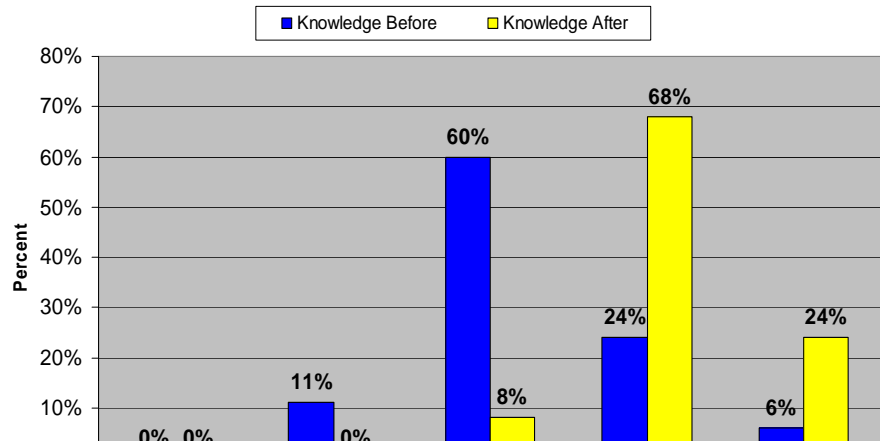
At the conclusion of each workshop, participants were asked to complete a self-retrospective evaluation rating their level of knowledge prior to and at the conclusion of the workshop on the topic that was presented.

Overall, participants rated increases in knowledge.

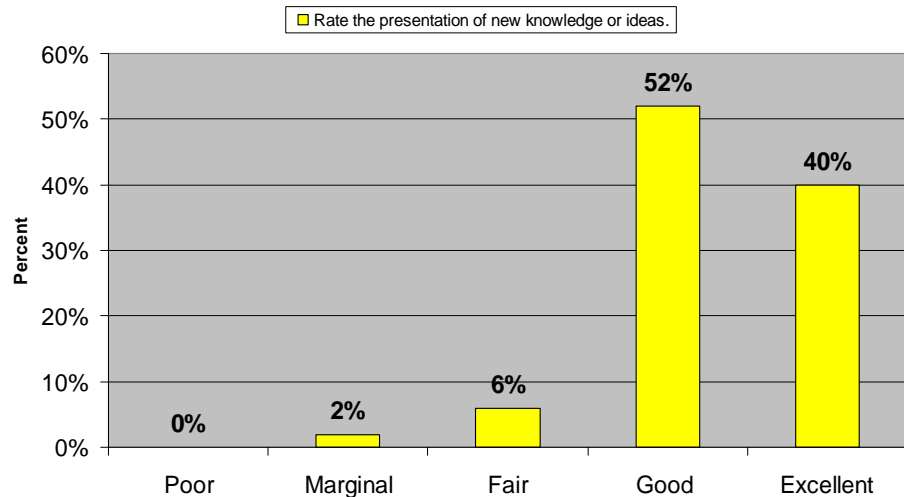
Workshop topics on *Giving Feedback (Oct)* and *Small Group Teaching / Facilitation (Nov)* generated the highest increases in self-retrospective knowledge gains. Part of the self-retrospective evaluation participants rated each workshop in terms of “Presentation of New Knowledge or Ideas”. Workshop topics on *Giving Feedback (Oct)* and *Interactive Team Communication (Dec)* provided faculty with the most in terms of new knowledge and ideas. Of the 286 workshop attendees...

- 50% nurses
- 25% physicians
- 25% pharmacists, nurse practitioners, physician assistants, administration

The Teaching Leader Series - Fall 08 Summary



The Teaching Leader Series - Fall 08 Summary



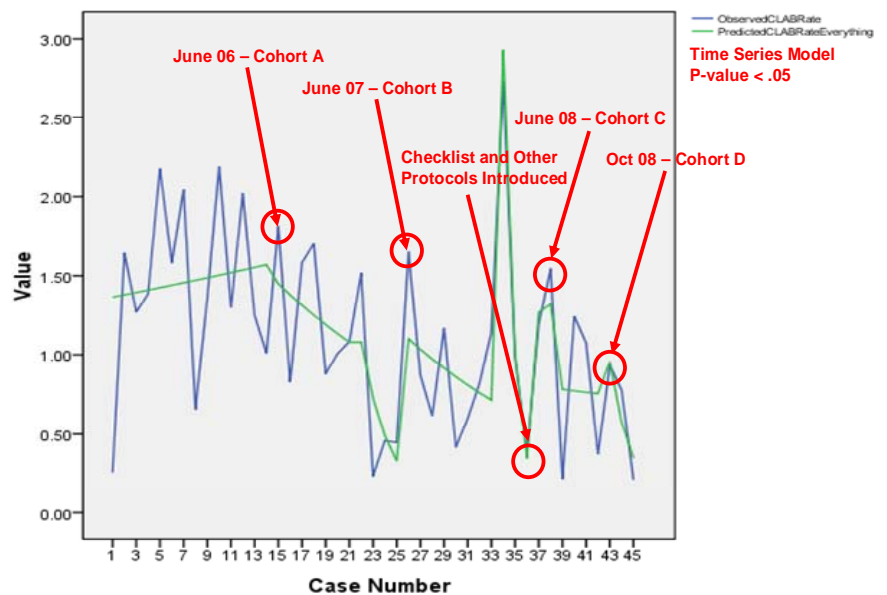
Participant Comments:

- “Very useful, practical, applicable concepts to incorporate.”
- “Helps in teaching patients as well as other practitioners. It was a good reflection in the adult learning experience and provided some new ideas to take with me.”
- “Very useful; will apply these skills as I coach and mentor others.”
- “The feedback provided from the microskills workshop was extremely beneficial.
- “Excellent. I will incorporate this into teachings for my clinical instructors and staff involved in team meetings currently. Reinforce concepts to staff as well.”
- “It helps to understand what is needed in small group roles.”
- “Help with clearer guidelines for teaching small groups.”
- Very useful techniques and ways to foster interdisciplinary teaching rounds.”
- “Case scenario provided information gathering sessions – they were helpful to me.”

Reducing Central Lines Related Infections and Improved Patient Safety through Central Lines Simulation and Education Program: The study objective was to evaluate the impact of central lines simulation and education training program on learner and patient outcomes. *Note: This is not the complete findings report from the study.* The study design utilized: a) Time series method to determine the impact of training, policies and protocols on the hospital's central line-associated infections rate since April 2005 and b) Focus groups to validate the accuracy of data collected on the bedside procedural checklist, to understand perceived value of the course, and to understand perceptions of bedside collaboration.

Time series analysis suggests that the introduction of the central lines course and checklist, along with other changes in hospital policies and practices have significantly reduced the hospital's central line-associated infection (CLAB) rate since April 2005 when controlling for changes in acuity levels (Figure 2). Time Series model suggests that *Checklist Introduction (April 2008 = month/case number 37)* event coincided with a large and instantaneous drop in the hospital's monthly CLAB rate followed by a slowing of the downward trend in CLAB rate. Time Series model suggests that the *Medicare Announcement Known (January 2008 = month 34)* event is also significant but in the other direction. Medicare's new ruling became more widely known at Lehigh Valley Health Network in January 2008, the same month when the hospital's infection rate spiked abnormally high.

Figure 2: LVHN Central Lines Acquired Bloodstream Infection Rate April 2005 – December 2008



The study produced evidence suggesting that central lines simulation training that involves nursing contributes to: a) better resident adherence with patient safety protocols, specifically the IHI Central Lines Bundle and approaching significantly better adherence to these protocols and b) lower complication and infection rates than if the course did not exist.

Cost/Benefit Estimates - As shown in the table below, an annualized savings of \$701,560 can be associated with the central lines simulation training program because the time series model containing all program variables is statistically significant.

Estimated Level 4 Cost/Benefit Analysis Results Associated with Central Lines Simulation Training Program		
	April 05 – March 06	February 08 – January 09

Program Costs:		
Course reviews and improvement planning	---	17,000
Course training and teaching time	---	27,000
Course materials and maintenance	---	10,000
Simulation facilities (220 sq ft per room)	---	15,840
Bedside collaboration/checklist documentation	---	28,600
Evaluation and reporting from registry database	---	10,000
Total Program Costs	---	\$108,440
Program Benefits (Associated)		
Number of CLAB's	78	48
CLAB rate	1.5	0.79
Annualized costs using CDC's \$25,000 per CLAB	\$1,950,000	\$1,200,000
Annualized costs using IHI's \$29,000 per CLAB	\$2,262,000	\$1,392,000
Average annualized costs of CLAB's	\$2,106,000	\$1,296,000
Annualized Value of Improvements (in terms of savings)	---	<u>\$701,560</u>
Calculation: \$2,106,000 minus \$1,296,000 minus \$108,440 = \$701,560		

Opportunities:

Expanding Inter-Professional Faculty Development: Utilize new medical school affiliation with USF Health to increase interprofessional training of medical students, residents and faculty. Expand curriculum and instruction, and assessment and evaluation of faculty development program. Also, make use of local resources from surrounding colleges and universities to be guest presenters part of the Faculty Development program broadening the offering to our faculty.

Leverage Lessons Learned: Translate methods and models used in the Central Lines Simulation Impact Study to other strategic quality and patient safety problems and initiatives such as evaluating the impact of SPPI projects, patient hand-off communication and sepsis alert.

Standardized Patients: Increase the use of standardize patient program in residency programs.

GMEC Reorganization: Reorganization of Graduation Medical Education Committee and associated committees to more efficiently and effectively address institutional and programmatic accreditation standards and needs.

Trends:

Duty Hours: Resident duty hours have been considered a National Patient Safety Issue. In 2007 the Institute of Medicine (IOM) formed the "Committee on Optimizing GME Trainee (Resident) Schedules to Improve Patient Safety". The committee's task was to develop strategies to enable optimization of work schedules to improve safety in the healthcare work environment. Below is a summary of the committee's recommendations. If these recommendations became accreditation requirements, they could impact overall residency programmatic costs. Source: IOM website.

Comparison of IOM Committee Adjustments to Current ACGME Duty Hour Limits

	2003 ACGME Duty Hour Limits	2008 IOM Recommendations
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Maximum hours of work/week	80 hours, averaged over 4 weeks	No change
Maximum shift length	30 hrs (admitting patients up to 24 hrs then 6 additional hrs for educational activities)	30 hrs (admitting patients for up to 16 hours, plus 5 hrs protected sleep period with remaining hrs for educational activities) 16 hrs with no protected sleep period.
Maximum in-hospital on-call frequency	Every third night, on average	Every third night, no averaging
Minimum time off between scheduled shifts	10 hrs after shift length	10 hrs after day shift 12 hrs after night shift 14 hrs after any extended duty period of 30 hrs and not return until 6am of next day
Maximum frequency of in-hospital night shifts	Not addressed	4 night max; 48 hrs of after 3 or 4 nights of consecutive duty
Mandatory time off duty	4 days off per month 1 day off/week, avg. over 4 weeks	5 days off/month 1 day off/week, no averaging One 48-hour period off/month
Moonlighting	Internal moonlighting is counted against 80-hr weekly limit	Internal and external moonlighting counted against 80-hr weekly limit All other duty hour limited apply to moonlighting
Limit on hours for exceptions	88 hrs for select programs with sound educational rationale	No change
Emergency room limits	12 hr shift limit, an equivalent period of time off between shifts	No change

Rapid Workforce Growth Segments: Citing growing evidence of a national physician shortage, in 2006, the AAMC (Association of American Medical Colleges) recommended that enrollment in U.S. medical schools be increased 30 percent by 2015. This expansion may impact LVHN in several ways. First, our medical school affiliates may advocate for more clerkship rotations at LVHN. The number of LVHN clerkship rotations has grown incrementally over the last several years. This trend may accelerate as medical schools' enrollments increase. It is important to mention that medical school enrollments have been fairly flat for more than 25 years. Second, assuming our clinical departments have the capacity to absorb more students, GME operations (such as student housing facilities, administrative resources and faculty development) will need to expand. It is important to note that capacity is also related to specific service line growth. Third, more medical students in the U.S. Healthcare system may translate into GME program growth as more students seek residency training. However, more residency applicants will translate into a more selective recruitment model and higher quality residents.

Physician Assistant (PA) and Nurse Practitioner (NP) Workforce Growth: The number of PA's and NP's with privileges at LVHN has increased by 85% over the last three years according to internal personnel data. Yet this workforce segment has little to no formal education or development program. At the national level according to the Physician Assistant Education Association, employment opportunities and roles for PA's are rapidly expanding, formal postgraduate training is assuming a greater importance, and the mean number of months of health care experience continues to decline. PA's and NP's are likely to assume an expanding role in medical care in the future. This assumption is based in part on the view that the physician workforce will not be able to meet the anticipated future demand for medical care services. At

LVHN, a proposal to start an accredited PA Hospitalist Fellowship program has been submitted. Also the number of PA's and NP's attending the June 2008 DOE's Central Line Simulation Course tripled.

Faculty/Clinical Educators: The number of educators at LVHN is estimated to range between 500-900 clinicians. A clinical educator is defined as a physician or nurse who has either an academic appointment with one of our school affiliates, has been identified as a preceptor/mentor, and/or has a formal education role in the institution. With generous support from the Leonard Pool Trust, a network-wide faculty development model is being developed. The purpose of faculty development will be to assess, even out and enhance teaching performance while also disseminating academic innovations, learnings and knowledge.

Goals:

Service: Faculty Development

- Complete TLS program evaluation plan as stated in CE application
- Draft plan for a mastery teaching certificate.
- Pilot a mastery teaching certificate course.

Quality: Institutional Accreditation

- Utilize an A3 framework to oversee the redesign of GMEC and its subcommittees to more efficiently address membership needs and requirements
- Assign responsibilities and timelines for achieving GME action plan items.
- Design and implement GME balanced-scorecard or submit CMS slot redistribution application.

People: MED team development

- Finalize MED improvement action plan
- Implement action plan
- Resurvey staff

Cost: GME Finance

- Standardize rotation language, definitions and process for submitting rotation fte time electronically
- Meet with program coordinators and finance folks
- Develop and implement gap analysis plan

Growth: Establish USF regional medical campus

- Conduct front-end analysis to establish student affairs office and other regional medical campus services
- Incorporate A3 framework to facilitate at least one component of the USF/LVHN RMC.
- Project management support

Youth Education Programs

Youth Education Programs are a part of the Medical Education Development section of the Division of Education. Our Youth Programs have served over 2,000 students since 2005. The targeted audience for our work is primarily high school and undergraduate students. Each youth program shares the common goal of increasing the exposure of young people to potential careers in health care.

Services:

- Research Scholar Program
- Emerging Health Professionals
- Health Care Career Discovery
- Job Shadowing and Observations
- Bridging the Gaps
- Healthy Youth Peer Education

We measure the success of our programs using indicators from their popularity, participant satisfaction, assessing our return on investment in terms of recruitment. Of the 1,115 past participants tracked & sampled:

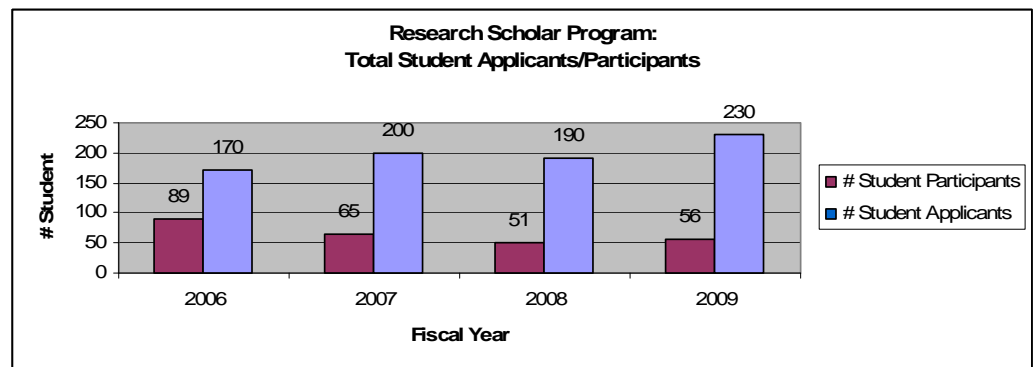
- >90 have contributed to the community as LVHN volunteers
- 13 have completed clinical/allied health student rotations here
- 20 have returned to LVHN as residents
- >35 have been hired at LVHN

These outcomes have been achieved at a total cost of less than \$200 per student. Below is a summary of each youth program's demographics and outcomes.

- 25 work-study student experiences
- 56 Research Scholar Participants (out of 230 applicants)
- 35 Emerging Health Professional Participants (out of 56 applicants)
- 370 Health Care Career Discovery Participants
- 300 Job Shadowing Participants

Accomplishments:

Research Scholar Program: This program offers educational research opportunities for undergraduates in a variety of clinical and non-clinical settings, while also providing valuable assistance to LVHN departments. The program includes fall, spring, and summer sessions. Mentors for the program are individuals from all levels of the hospital network seeking assistance with critical research and other projects. Mentors are individuals interested in stimulating the development of the next generation of professionals. Mentors include physicians, nurses, researchers, senior administrators, mid-level managers, coordinators, etc. The departments they represent span a wide range of network services, including: surgery, medicine, emergency medicine, pediatrics, family medicine, psychiatry, obstetrics gynecology, finance, human resources, education, and marketing/public affairs.



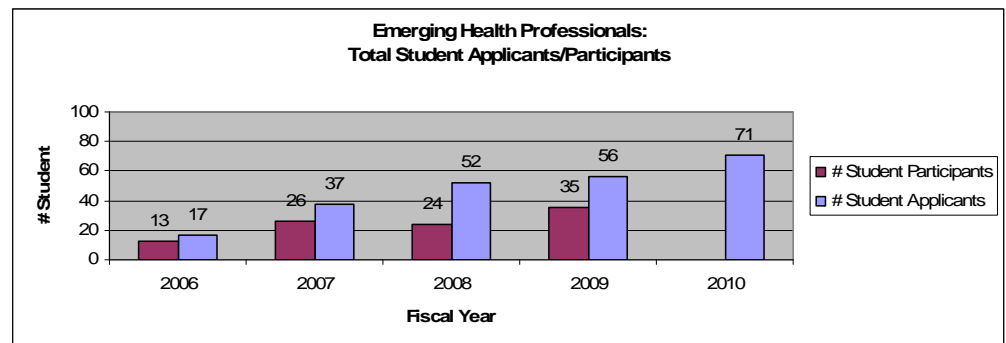
The universities most represented in this year's summer program include: Lehigh University, Muhlenberg College, Lafayette College, University of Pittsburgh. Of student evaluations from this year's summer program:

- 40% of respondents intend to publish and/or do a presentation involving their projects.
- 100% would recommend this program to others.
- 94% agree that, based on their experience in this program, they would want to work at LVHN.

In addition to students participating as Research Scholars, in FY09 the DOE facilitated approximately 25 work-study student experiences.

Emerging Health Professionals: Offered by the partnership of LVHN, Lehigh Career & Technical Institute, and Penn State Lehigh Valley, this dual-enrollment program combines college-level science courses, honors health curricula, and observation in a health care setting. The program is designed for high school seniors interested in any area of health care and allows them to explore careers while also preparing them for post-secondary education. The program serves all nine Lehigh County school districts. This year's program served more students than ever and the districts most well represented in this year's program include: Whitehall-Coplay, Northwestern Lehigh, Northern Lehigh, and Southern Lehigh.

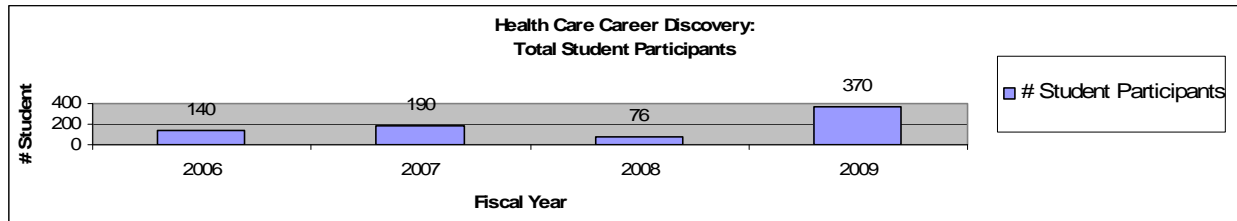
Over 70 students submitted applications for the 2009-2010 programs, a 27% increase in applications from last year. The 2009-2010 program will expand to a third section to accommodate all qualified students who have committed to participate.



Of a sample of student evaluations analyzed from the 2008-2009 school year:

- 100% of participants would recommend the EHP program to other students considering careers in health care.
- 4.72 on a scale from 1-5, when asked to evaluate the statement *"I have a better understanding of the healthcare field based on the health careers promoted in this program."*
- 4.64 *"I am more prepared for college now than I would have been if I did not take this course."*
- 4.6 *"I feel that I am more prepared for college than other students in my grade who are not taking this course."*

Health Care Career Discovery: In FY09, we offered over 370 middle and high school students, college students, parents, and community members, the opportunity to engage in interactive classroom learning and observation in a health care setting. During the school year, the Division of Education coordinated a full schedule of seventeen evening presentations, as well as special presentations offered during the school day to select school groups. We also coordinate shadowing for participants interested in learning about careers in health care first-hand through supervised observation. This year, the districts most well represented in the program include: Allentown, Parkland, and Emmaus.



Of a sample of student evaluations analyzed from the 2008-2009 school year:

- 4.5 Participants rated the program for the question: “What is your overall rating of the HCCD Program at LVHN?”
- 99% of students would recommend the program to others.

Shadowing/Observations: Linked with the Career Discovery program, short-term shadowing and observation opportunities match approximately 300 students per year with LVHN staff willing to share a first-hand look at careers in clinical or non-clinical areas.

Bridging the Gaps Community Health Internship Program: The DOE organized a work group to explore strategic need, feasibility, and options for the program and is working with De Sales University and *Bridging the Gaps* network representatives for a pilot session. Four health professions students are participating in this summer’s pilot program, contributing vital service at two community sites. In keeping with the program mission, the students are working in interdisciplinary pairs and will address the health needs of the underserved in our community.

Healthy Youth Peer Education (HYPE): Beginning in summer 2008, the DOE is involved in the administration and vision-planning for the Healthy Youth Peer Education program (HYPE). This year HYPE sustained a strong group of 13 high school aged youth. During the year, the HYPE youth continued to build their leadership and advocacy skills while developing a strategic program model for helping middle school youth to become better leaders. During the intensive five week summer program, the HYPE program partnered with The Boys and Girls Club of Allentown and The Caring Place Youth Development Center as peer leaders for middle school youth that attended the youth centers. The peer leadership program served a combined 36 middle school youth over five weeks, with the program being held twice a week for 2 ½ hours. The expected outcome for the peer leadership program was to combine peer mentoring and skill building to help young people become healthier, more engaged citizens. This summer, the HYPE teens also researched, filmed, and produced a documentary representing Allentown through their own eyes. This short documentary offers a window into young people’s perspectives on their community, its problems, and what everyone’s role is in shaping its possibilities.

Performance Improvements:

Expanding Health Care Career Discovery for High School Students: This year we expanded to all three LVH sites to better accommodate student participation. Pool Trust funding enabled us to partner with the Allentown School District to provide six buses for transportation for students who otherwise might not have been able to participate in programming.

Deepening the Experience for our Research Scholars: With the goal of increasing both the academic and cohort-building aspects of the program we integrated a “meet the author” session with Dr. John Castaldo. Each scholar was provided a copy of “The Man with the Iron Tattoo” at orientation and read the text in preparation for discussing it with Dr. Castaldo. Another scholar meeting centered on scholars as teachers as each student shared a “case” within a round-table format. We initiated one-on-one meetings with 90% of past/current mentors with the goal of improving the student/mentor evaluation/feedback loop. We initiated a Research Scholar alumni Facebook page to facilitate the continued engagement of program alumni with opportunities at LVHN. In conjunction with the summer program’s culminating poster presentation event, we invited alumni to join current students in developing their professional skills in workshops facilitated by Pennsylvania Workforce Investment Board *CareerLink*.

DOE Emerging Health Professionals a Model Program: We provided on-site consultation to State College High School, providing background information on our program model and facilitating discussion among stakeholders developing a program for that region. We invited EHP alumni to return and celebrate with this year’s graduating students, further strengthening the social and professional networks students have the opportunity to initiate during the program. The Morning Call printed in both paper and online versions an article authored by the DOE’s EHP coordinator and LCTI’s EHP instructor which spotlighted the program and particularly the community services performed by participants. Due largely to “word-of-mouth” advertising and exceptionally positive feedback from all stakeholders, we are planning for our largest EHP class yet, which for the first time will include home school students and students from the Roberto Clemente Charter School.

Building a Learning Community with Youth Education Newsletter: In August 2008, we released our third issue of the “Horizons” youth education e-newsletter and sent to 1,086 past youth participants. This e-newsletter serves to update students on opportunities within the network, as well as to provide yet another source of valuable career-oriented information. We use this e-newsletter as a tool for maintaining contact with students as they begin their college and professional careers.

Increasing Diversity: The Youth Education Coordinator completed a Master’s degree in Global and International Education and as her thesis presented recommendations for increasing diversity in education programs at LVHN. This work is being further pursued by a scholar who is investigating youth initiatives nationwide aimed at increasing diverse student participation that can be used to as models for the USF/LVHN regional medical campus affiliation

Opportunities:

Improving Metrics: As part of the overall DOE initiative around improving our metrics and analytics, we are working to incorporate DOE standard evaluation questions into youth programs.

Project Management: As part of the overall DOE initiative establishing a standard methodology and process for project management, we are working to align the process for youth project requests in order to incorporate into the larger DOE process for project prioritization.

Building Greater Awareness with Eligible Students: Through our relationship with the Pennsylvania Workforce Investment Board, we will examine the *Career Cruising* web-based program, sponsored by Career Link, and/or other tools to streamline the shadowing process and increased service offerings to students

Library Services

Library Services offers comprehensive information services to meet the needs of the hospital's inpatient and outpatient programs, its educational and research activities, administration, and healthcare consumers.

- 11,035 number of patrons served
- 159,068 number of online transactions
- \$0.99 avg cost per online transaction
- 643 Number of 1on1-assists for computer users
- 65 avg number of patrons accessing the library during weekends
- 15,000 number of off-hours access to library resources during the year
- 4,000 number of online Journals available in the digital library
- 221 participants in 42 evidence based training classes (Information Literacy Classes)
- 500 participants in 36 digital library demos
- 246 MEDLINE, CINAHL or other bibliographic searches performed
- 900 number of consumers who use our library public computers

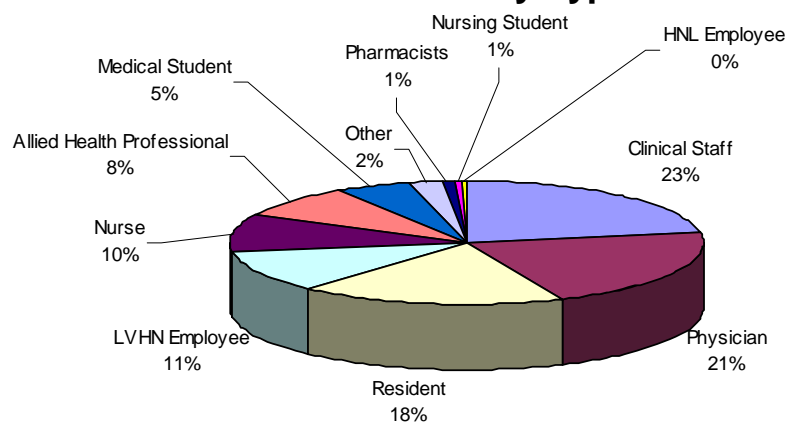
Services

- Literature Searches
- Information Literacy Instruction
- Online Research and Evidence Based Databases
- Interlibrary Loans
- Literature Alerts to Patrons
- Electronic Book and Journal Access
- Patient, Family and Consumer Education Resources

Accomplishments:

Digital Library: The digital library is available 24/7 and is easily accessible by using the "Fast Find" feature of the LVHN intranet. Some of the resources are full-text books and journals while others are point of care resources used for clinical decision making. The following breakdown shows usage of these resources by patron type.

Service Utilization by Type of User



Library Move: The library moved into newly renovated space the week of December 8, 2008. The new library design represents the open space concept. It has open spacious work areas for collaborative learning, and has comfortable and varied seating options for formal and informal computer use. Ten new laptop computers provide additional resources for access to digital library resources and eLearning when all hardwired workstations are occupied.

Body Family Medical Library: On June 29, 2009 LVHN celebrated the dedication of this new library and recognized the generosity of John and Judy Body and the naming of the library as The Body Family Medical Library. *“The Body Family Medical Library was established, thereby creating a lasting legacy to the community through support of medical education at Lehigh Valley Health Network. John and Judy Body’s dedication and generosity stand as an inspiration to all.”*

Pool Research Scholar Project: *Comparison of costs of access to electronic journals;* the project consisted of comparing a “pay per view” and electronic individual subscription packages pricing structures. Specifically we examined if we have the best structure to our subscriptions and if their utilization is optimal for the price/value. While 4 of the packages were less expensive using pay-per-view, the other 8 were significantly more expensive when using pay per view. Our current method of purchasing article content through packages and subscriptions is the most effective. According to the analysis:

- \$24.46 Estimated pay-per-view article price (average)
- \$5.67 Estimated current article price of individual subscription or package (average)
- \$18.79 Savings per article
- \$1,237,742 Total estimated pay-per-view cost
- \$358,746 Total estimated current cost
- \$878,995 Overall savings using the current method

These costs are estimated because we cannot obtain a price for all journals that are pay-per-view; for example EBSCO offers 2,000 journals. Data reflects only those with highest usage.

LVHN Archive Virtual Museum: A virtual exhibit was created called *Creation of Lehigh Valley Hospital*. A total of 100 people visited the virtual museum to view the collection during April, national library month.

Swine Flu Reading List: In quick response to the pandemic, our librarians created a reading list for practitioners on this very timely topic. April through June 6,802 people linked to these information resources.

Cultural Awareness Initiative: Library Services is represented on the LVHN subcommittee devoted to the development of a cultural material repository to improve awareness and accessibility to culturally appropriate materials. Our librarians have researched programs designed to create a repository for educational materials. Initial contacts with vendors and arrangements for webinar demonstrations of the software have been completed. In addition, we have investigated and collated e-resources into a cultural competency resource guide.

Resource Utilization and Costs: The following usage represents most heavily used library resources and services over the last year:

	Usage (Hits)	Cost (Subscriptions)	Cost/Use
Consults, Clinics, Journals (MD, Nursing)	24,847	107,052.37	4.31
Dynamed	19,754	7,126.00	0.36
EBSCO	85,507	29,169.00	0.34
UptoDate	108,603	62,759.00	0.58
OVID	59,604	176,076.00	2.95
NEJM	9,743	3,850.00	0.40
AMA + Archives	5,336	6,776.00	1.27

AccessSurgery	5,909	12,705.00	2.15
Pepid	254,489	28,000.00	0.11
Prescriber's Letter	5,946	7,293.75	1.23

Publications and Presentations:

Paper Presentation: *Planning for the Integration of the Digital Library, Clinical Decision Support and Evidence at the Point of Care (EPOC)*: Linda Matula Schwartz, Information Specialist, Lehigh Valley Hospital and Health Network, Allentown, Pennsylvania; and Barbara Iobst, MLS, AHIP, Director of Library Services, Lehigh Valley Hospital and Health Network, Allentown, Pennsylvania. One Hundred and Seventh Annual Meeting of the Medical Library Association, Philadelphia, Pennsylvania, May 18-23, 2007.

Poster Session: *Magnet Again! Librarian's Role in Collaboration to Maintain Magnet Status: Demonstrating the Commitment to Supporting Evidence Based Practice (EBP)*: Barbara Iobst, MLS, AHIP, Director of Library Services, Lehigh Valley Hospital and Health Network, Allentown, Pennsylvania; and Linda Matula Schwartz, Information Specialist, Lehigh Valley Hospital and Health Network, Allentown, Pennsylvania. One Hundred and Seventh Annual Meeting of the Medical Library Association, Philadelphia, Pennsylvania, May 18-23, 2007.

Schwartz, L. and Iobst, B. (2008). *Magnet Again! Librarian's role in research collaboration to maintain Magnet status*. Journal of Hospital Librarianship 28(1):72-79.

Schwartz, L. and Iobst, B. (2008, Summer). *Planning for the integration of the digital library, clinical decision support, and evidence at the point of care*. Medical Reference Services Quarterly 27(2), 146-157.

Barbara Iobst was a panelist at a conference at Hershey Medical Center on April 2, 2009 entitled, "Transformational changes in health sciences libraries: space, collections, and roles."

Linda Schwartz was a presenter at the Pennsylvania Library Association Lehigh Valley Chapter Annual Spring Conference entitled "Libraries Make it Work: You Can Count on Us," held in East Stroudsburg on May 21, 2009. Her presentation was entitled: *Countdown to Counting: Front End Analysis*. The Kirkpatrick Phillips model of building an evaluation plan for a library was reviewed. As libraries transition to ever more electronic resources, remote users, and, often, decreased physical space, old measures of collections and clients-in-the-door may not provide adequate assessments of what the library provides.

Performance Improvements:

Accessibility of Digital Library Improved with Find Fast List: Access to the Digital Library Webpage was greatly enhanced by a link that was created in the Find Fast List on the LVHN Intranet home page.

Customer Satisfaction through Convenient Access: BLS/ACLS/PALS books are a necessary component for employees and physicians obtaining recertification in CPR. It is not always convenient for these people to come to one of the libraries to sign out the book prior to their class. The person can now request a book using an online form and the book will be sent to them prior to their class using the interdepartmental mail system. Upon successfully completing the test at EMI, they can place the book they signed out in a box at EMI and it will be sent to the library.

This eliminates the need for them to come back to the library and offers a safe and secure method for them to return the book. This has resulted in fewer books lost, an increase in customer satisfaction, and less time away from the nursing unit to come to the library and sign out a book.

Consumer Computer Usage at the CC Campus: The new computers available to the public were increased from two to seven. Due to the convenient location and high visibility the number of consumers using computers has increased from approximately 600 to 900. It is anticipated that this number will continue to increase annually.

Automating LVHN Archives Data Base: Approximately 500 new items were digitized and added to the online archives data base during FY09 this has decreased the man hours sorting through boxes looking for items for hospital events.

Building Library Services Metrics: A new MS access database was created to track the amount of time required to render library services and administrative tasks required to support those services. We plan to begin using this for FY10. Library staff has been trained and completed a 1 month pilot of phase 1 which entailed collecting a subset of statistics. The Data Analyst in the Division of Education assisted us with the creation and customization of this database. Elimination of the use of Refracker, which is a commercial program for the same purpose, saved the library \$14,000 annually.

Opportunities:

Leverage Electronic Resources: Particularly those at point of care, identifying groups of users that would benefit and provide educational opportunities for them to learn when to use appropriately and how to use them.

Investigate New Electronic Resources: Analyze the strengths and weaknesses of potential resources and the cost compared to our current digital library holdings.

Provide CE for Digital Library Use: Determine which existing electronic resources provide free or lost cost CE and what the requirements are for participating. Integrate this into our overall CE Program.

Electronic Resource Management: Investigate electronic resource management programs and their cost. Vendors now exist that can obtain your usage for all your electronic products regardless of which aggregator is supplying them and provide monthly usage, cost per use data, and other information. We have never had time to do this. We only can do it month by month per aggregator, not alphabetically across aggregators.

Trends:

Knowledge Translation at the Point of Care: Healthcare providers, patients and care givers need ready access to comprehensive evidence based information to help improve outcomes, reduce costs, and shorten length of stay. Seamlessly integrating information resources such as *First Consult/Procedures Consult*, *Dynamed*, *the Cochrane Library*, *Essential Evidence Plus*, *BMJ Clinical Evidence* and *Natural Standard Complimentary and Alternative Medicine* at the point of care can allow for knowledge transfer without disrupting the care provider workflow. Places such as Vanderbilt and Intermountain Healthcare, (and Geisinger) are partnering with the above

vendors to help enhance patient care by accelerating the adoption of electronic health records and encouraging the use of evidence based medicine and other forms of best practice.

Knowledge Translation...study of the organization, retrieval, appraisal, and uptake of knowledge from research: Simple publication of information – no matter how important – isn’t enough. It has to be adopted and used to make an impact. Getting quality information to the point of care – to the point of need – is vital. Donald A. Lindberg, MD, Director of the National Library of Medicine speaking at the National Library of Medicine Biomedical Informatics course in June 2008 reviewed NLM’s goals for 2006-2016 as delineated in the report, “Charting a Course for the 21st Century.” These goals include the vital role of libraries “to facilitate information transfer” via “advanced electronic representations of biomedical knowledge in conjunction with electronic health records.” Increasingly, as biomedical research is transformed into interactive, multimedia publications, the granularity of these digital publications will allow them adjust to user learning styles and preferences. New interfaces are under development that will “understand a specific user’s information need and deliver a concise and appropriate response that is readily understood by that user.” Projects are occurring at VA, Kaiser, Mayo, Intermountain, and Group Health.

Emerging Roles and Repurposing Library Staff: In the past, librarians were seen as primarily guardians of knowledge. Users came to the library to avail themselves of the services and use a quiet place to study. Today, many library services are accessible via online digital library services, making library spaces repurposed into group study and collaborative learning areas. Librarians are changing their identities and perceptions to meet users’ needs in the changing environment. They serve as direct liaisons to committees such as performance improvement and clinical decision support, are embedded in departments conducting research, and teach information literacy classes to ensure clinicians understand how to use point of care resources.

Goals:

People: Improve library services to the network

- Work with the Patient, Family and Consumer Education Manager to determine how Library Information Techs can assist the community who visit the CC library and provide education for them on literacy levels and patient education concepts.
- Work with Director of Community Health program Development to provide education to library staff to understand community demographics and disparities of care and identify appropriate useful information resources.
- Apply MLA Standards for hospital libraries and national network of Libraries of Medicine planning guidelines to design a new organizational structure for library services

Service: Enhance library services for select groups of patrons

- Identify stakeholders; meet with them and Patient, Family and Consumer Education Manager to generate ideas for resources and for the use of the consumer health room.
- Meets with chairs, with unit and program directors, and clinical departments to evaluate current services and determine what services they might need and create a plan to promote existing library resources.
- Implement the plan and analyze the outcomes.

Quality: Contribute toward patient quality improvement/safety outcomes and reduce waste

- Select a work flow process and flow chart it.

- Apply lean methodology using one work flow process. Create and implement a plan for the selected process and outcome.
- Develop subject guides specifications (links to library information resources) to topics that support patient safety, like central lines course which also contribute to LOS.

Cost: Implement consistent and reliable measures to quantify library functions.

- Measure the use of specific costly resources. Have stakeholders evaluate costly library resources and create list of their recommendations for less costly substitutes or for elimination.
- Create clearly defined set of measurements that feed into the library scorecard.
- Investigate resources and determine if they align with future needs of the USF affiliation, particularly those that pertain to the Health Care Leadership Track.

Growth: Expand availability and accessibility of library resources

- Take library website to phase 2: As Library Director lead the redesign of the website.
- Determine library needs for USF, and medical center home.
- Promote evidence based literature searching for physicians, residents, and others through the development of elearning module(s) for the information mastery course.

Patient, Family and Consumer Education

The Patient, Family and Consumer Education section is dedicated to addressing specific outcomes concerning acute and chronic health care management, health status, quality of life, knowledge, and the ability of individuals to function and manage their symptoms across a lifespan continuum. Through the implementation of research, education, technology, print media, and partnerships with health care teams and advocacy groups, patients, families and consumers will become empowered to assume more responsibility in the management and maintenance of their health.

- 85.9 Patient Satisfaction (Press Ganey Inpatient Survey; Goal ≥ 87.5)
 - 85.1 Instructions given about how to care for yourself at home
 - 85.1 Teaching and instructions you received for self care, medications and treatment during hospital stay
 - 92.2 Instructions nurses gave about caring for yourself at home
- 62,989 Total number of materials request
- 3.9 Avg number of days to fill and distribute materials requests (goal ≤ 5 days)

Accomplishments:

Implementation of Krames On-line: In an effort to standardize patient education resources throughout the network, the DOE Patient, Family and Consumer Education section and Information Services collaborated to upgrade the on-line internet site featuring Krames educational products. This upgrade included medication health information sheets and over 300 videos showcasing acute and chronic conditions, procedures commonly ordered for the outpatient and patient safety topics. In addition to this link being available to the consumer on www.lvh.org, the link is also available on the Patient Education Homepage. Outpatient clinics and LVPG practices now have access to these resources. The benefits of using this on-line program throughout the network has decreased in expenses related to purchasing educational material for LVPG practices; all content can be printed at point of care; videos can be previewed by patients and their caregivers before or after their appointment; also, if time constraints prevent access to resources during patient visits, the email function contained within Krames On-line can be utilized for busy practices and clinics. By using the patient's email address, specific content can be forwarded to the patient prior to their visit or their procedures

Krames on Demand Education: In an effort to improve outcomes in patient and family education documentation, 18 hands-on instructor led classroom sessions were made available to multi-disciplines within the inpatient setting training over 160 clinicians. Baseline data in January of 2009 revealed real deficits in performance and key indicators were addressed. A total of 11 elements were agreed upon and curriculum based on learning needs of clinical staff was developed. Clinical staff from all disciplines were trained on how to navigate the system, how to conduct a learning needs assessment, and how to develop and educational plan that would provide patients and families with the information they needed to be safe after their discharge. An emphasis was placed on the educational assessment record found on KRAMES.

Implementation of Krames on Demand in Behavioral Health: Collaborated with Nursing Informatics and Behavioral Health (BH) to move forward with Krames On-Demand for the mental health population. BH was the only remaining inpatient unit that did not go live with the

software. All other units under Patient Care Services went live in June, 2008. Patient Education collaborated with Patient Care Specialist to set up and delivery educational sessions for BH staff. In addition Patient Education built specialty folders in KRAMES to assist staff with finding and utilizing frequently used educational content for their specific population; assisted PCS group in BH with Go Live; and provided feedback to PCS group concerning the method and frequency of evaluating key indicators for ongoing evaluation of the medical record in order to verify compliance with Krames On-Demand once it was implemented.

Build Specialty Folders in Krames to Speed Clinician Use: Met with 21 clinical areas and developed specialty folders in Krames in an effort to improve efficiency for patient care areas using this software. Specialty groups wanted key pieces of educational information used the most frequently on their clinical units in one place. Building major and sub folders allowed for an efficient means of gathering individual health sheets for patients and their caregivers.

Patient and Family Education Newsletter: Quarterly newsletter written for health care providers related to patient, family and consumer education topics. It includes a section that will be used to communicate new educational resources, deleted resources, and updates to Krames On Demand and Krames On Line. It features topics such as health literacy, copyright laws, reviewing content for cultural appropriateness, language and reading levels, transparency in health communication, and the art of health care education.

Performance Improvements:

Improved Quality, Reduced Cost for our Closed Circuit Television using The Patient Channel: The Patient Channel is currently the satellite broadcast being utilized by the network for patient and family education. The video content includes topics addressing various chronic diseases and illnesses as well as health promotion and prevention programs. Every video title is entered into Krames On-Demand allowing clinical staff to document video education for their patients on the medical record.

Centralized Resource for our Clinicians on the Patient Education Home Page: Provides one stop shopping for network health care providers. The Patient Education Web page contains links to the following documents, information and educational tools needed to educate patients and families. Resources available for our clinicians include an archive of the Patient and Family Education Newsletter, video preview of content provided by The Patient Channel, Web based tutorial on how to find quality health care education on the Internet, Patient education articles and best practice standards by leading experts in the field of patient education, Links to LVHN educational resources.

Improving Cross Cultural Care: Developing and implementing educational resources for patients and families that address cross cultural care by connecting health care providers with information that addresses the socio-cultural differences between patients and providers with the intent to influence communication and clinical decision making. In addition, researching educational material for comprehension and contextual experiences as it relates to specific cultures, including mental illness, gay and lesbians and individuals with physical limitations. It is the belief of this department that when differences are appreciated, explored and understood that patient satisfaction will be improved, adherence to established strategies in patient self-management will be increased, and improved health outcomes will be achieved.

Leverage HBI Tool to track Patient Education: By using HBI to track the utilization of resources accessed by the network from the LVHN Intranet Patient Education Material site we will be able to profile our clinician needs. In the past it was not possible to review who was using the information from the Intranet. Now through the reports obtained from HBI (July, 2008) the department is able to obtain this information. In addition this will be valuable addition to the end of the year preparation of the “Free Care Report”.

New Google Search Engine Making Finding Patient Materials Faster: The new search engine was applied to the LVHN Intranet. Customers can now put in key words that will only search for information found within Patient, Family and Consumer Education. This provides a more comprehensive search for educational resources, order forms, video content, etc.

Reducing Custom Authored Patient Education Resources and Long Term Cost of Ownership: Maximizing our license for the Krames products, this relationship has made the review and revision process of written resources more efficient by sourcing common clinical content. Updates are provided quarterly and systematically updated in our database. LVHN custom content is reviewed and if similar content is available on Krames the department deletes the LVHN resource from the database. In 2007 custom content was backed up in the review process by two years. Hard copy pieces in the patient education literature room were outdated and utilization reports revealed that certain pieces were not requested by network clinicians for over two years. Using this information allowed us to delete written resources from our library. Most of the pieces were written at an 11th grade reading level on average and were not suitable for distribution based on the department / network guidelines. To date we have deleted 20% of our written resources and have replaced this information with Krames educational content. This content is provided in both English and Spanish, a 6th to 8th grade reading level, ability to change font size for individuals with visual impairments, and the quality of content is current and subjected to an internal review process with medical content experts.

Opportunities:

Upgrade our CCTV System to serve the Diversity of our Patients: The current video player system supporting the Patient Education channels is failing. An upgrade to digital video equipment used to target specific programs on LVHN patient education channels will allow us to target content to LVHN patient needs. Available LVHN patient education channels will be “turned” on and specific content from The Patient Channel will be downloaded and then played on the closed circuit television stations. By providing more programming throughout the day we will provide more opportunities for enhancing patient education during inpatient stays.

Continue to Leverage the Krames Products: Work with Clinical Education Coordinators in LVPG to pilot the best way to use this resource in busy practices. By examining work flow process we can design an educational process that benefits patients, their families, and health care providers.

Cultural Competency Resource Database: Working with the PCE Cultural Competency Committee and outside vendors to create a network wide database repository related to health related educational resources, community based programs, support groups, culturally appropriate material, Title VI requirements, documents and forms.

CE Credit for Patient and Family Education Newsletter: Develop the newsletter to eventually include content that will allow staff to earn continuing education credits.

Trends:

Web 2.0 for Health Care Education: Web 2.0 tools are web-based and easily accessible. They are open to complete participation by the user. They improve participation with a larger audience and can be used as a marketing tool to attract more customers in utilizing the services provided by LVHN. These kinds of technologies provide social networking for the health care consumer and the provider. Examples include:

- *Podcasts* are available for medical and patient education
- *Wikis* are available for medical references.
- *Blogs* can be written by physicians and other medical experts and can be used as an educational tool.
- *YouTube* for Brand Management and Public Relations- The ability to brand your YouTube link. 72 million visitors click on to YouTube in a one month period. Prospective patients view content on YouTube and contact your organization to schedule appointments and seek out specific physicians (2008, Healthcare Intelligence Network). Already being implemented through Marketing and Public Relations. Presents a wonderful opportunity to collaborate on creating socializing tools for patients with chronic diseases.

Exciting Web 2.0 and Health Care Education examples to consider:

- **Within3** - <http://www.within3.com>: This site is a health technology company whose mission is to help organizations and health-science professionals forge stronger relationships to fight and prevent disease. Their goal is to assist organizations in creating powerful interdisciplinary, stand-alone or multi-center communities with the goal of moving forward research and improving patient outcomes.
- **TubeMogul** - <http://www.tubemogul.com>: This is a free service that provides a single point for deploying uploads to the top video sharing sites and data on who, what and how videos are being used.
- **Sharp, John**: Blog on e-Healthcare - <http://ehealth.johnwsharp.com>: Review blogs by John Sharp on news and emerging trends in e-healthcare.
- **MUSCHealth.com** – <http://www.muschealth.com>: A consumer focused web site featuring a video library, podcast library, health tools, clinical trial information, and health topic library.

Goals:

People: Establish key processes within the department to improve operational efficiency and performance

- Improve department work flow by designing and implementing an electronic archive folder for patient education resources.
- Provide team building strategies between the department and outpatient service lines in order to develop partnerships in evaluating and reviewing educational resources.
- Develop training guides and competency checklists for key stakeholders based on how to manage existing and new data placed on the server.
- Conduct educational sessions for LVHN end users in collaboration with the Cultural Repository Sub Committee, on how to access and navigate web based database for culturally appropriate patient education resources.

Service: Design an improved video programming resource for inpatient health care consumers.

Implement phase three of the CCTV upgrade.

- Collaborate with Media Services in the customization of disease specific video programming on LVHN patient education channels for all inpatient units.
- Collaborate with specific clinical units in designing and implementing level one evaluation for health care consumers utilizing video programming to meet their educational needs.

Quality: Develop documents and educational resources that address population level information and health literacy requirements.

- Establish key stakeholders to take part in the health literacy sub committee on documentation and written educational resources.
- Correlate language usage statistics and primary diagnosis information for the top three cultures requiring interpreter / translation services in the inpatient setting.
- Conduct formative, process, and outcome evaluations to design and assess documents and written educational resources as they relate to health literacy, language preference, and key chronic diseases.

Cost: Reduce expenses for written educational resources.

- Continue department inventory of outsourced educational material purchased and utilized in FY09.
- Conduct cost analysis and compare expenses for the same product from different vendors.
- Review content for replacement with subject matter experts.

Growth: Partner with outpatient and community services to bring quality educational programming and resources to the Chronic Care Center.

- Collaborate with the appointed stakeholders in designing the work flow process for the Chronic Care Center.
- Develop and review existing educational resources and other tools that will assist in establishing specific strategies that will improve the self management skills of individuals with chronic diseases.
- Participate in creating and conducting and conducting level one and two evaluations for patients and families receiving education to better manage their chronic illnesses.

Simulation Center

The Lehigh Valley Health Network Interdisciplinary Simulation Center located at the Division of Education strives to improve quality of care and patient safety through innovative educational techniques. The Simulation Center provides an environment for individuals and teams of all specialties and disciplines in teamwork, communication and clinical skills in a safe simulated clinical environment.

Services:

- High fidelity manikin human simulators
- Multidisciplinary team based training scenarios
- Curriculum and instructional design
- Standardized patient actors

- 1,670 number of participants
- 999 delivery hours
- 19 number of scenarios offered
- 4 number of curricula w/ simulation part of the design
- 69 number participants in central lines course

Accomplishments:

Ob/Gyn Crisis Delivery Programs: This program is being developed by the Ob/Gyn Department with consultation from the DOE simulation team as needed. They are successfully staging crisis deliveries for their residents that include nursing participation. The simulation team in collaboration with Ob/Gyn ran 2 maternal mock codes on the labor and delivery floor.

Pediatric Mock Code Program: A collaborative effort with Peds and EM that creates “in situ” or on location pediatric codes for all levels of physicians, nursing and staff. Approximately 25 codes were run throughout the network in 2007-2008.

Nursing Simulation Efforts: Simulation has been extensively incorporated into nurse training programs through Clinical Staff Development. Simulation when used with *The Experiential Learning Theories* increases engagement of participants and accommodates diverse learner types; auditory (conversation with patient), visual (monitor or lab report), and kinesthetic (require a procedure to be performed.)

- 4 number of nursing programs with simulation
- 1,444 number of participants across these programs
- 19 total number of scenarios offered
- 16 number of unique scenarios

Construction of the Simulation Center: The DOE simulation center was completed in July 2009. This center will be called “The Lehigh Valley Health Network Interdisciplinary Simulation Center.” The acronym “LVHNISC” sounds out to “LVH nice.” An opening ceremony is being planned for fall 2009. The center consists of:

- Three hospital (Kasych type) single patient rooms, two of which will have audio/visual (a/v) recording and playback capabilities.
- One large simulation suite with control room with a/v recording and playback.
- One debriefing room with a/v playback capability and four desktop computers.
- Office space for three simulation team members.
- Storage space for equipment.
- Changing area for standardized patients.

Personnel Growth: With the support of the Dorothy Rider Pool Healthcare Trust a new team within DOE was formed in 2008. A Simulation Research Assistant, Melissa Walsh, hired (1/08), and a Simulation Nurse Specialist, Deborah Arnold, hired (3/08). Currently a position is open for a Simulation Technician.

Research Efforts: The Department of Emergency Medicine in collaboration with CHHSE submitted a manuscript to the journal Simulation in Healthcare (under review): Competence and Comfort in Performance of the Lumbar Puncture Procedure. Authors: Steven M Conroy DO, William F Bond MD, Karen S Pheasant DO, Dara A Som MPH, Nicole Ceccacci DO.

Research Efforts: The pediatric mock code team submitted an abstract and the abstract was accepted as a Top 5 abstract for Research Day 2009. The abstract was entitled: Qualitative Analysis of Emergency Pediatric Resuscitations, Walsh, M., Arnold, D., Walker, L., Dietz, T., Bond, W., Lehigh Valley Health Network, Allentown, PA for Research Day 2009.

National Participation: In January of 2009, Dr Bond served as moderator for the expert panel “Preparing for Disaster: Using Simulation for Pre-Hospital and Hospital Disaster Training” (Panel Members: Godwin A, Kobayashi L, and Okuda Y.) and co-leader of Post Graduate Course Workshop “Advanced Scenario Design” (Co-led by Miller G.) both at the Annual Meeting Society for Simulation in Healthcare, Orlando, FL.

Building Local Support: In April of 2009, the simulation nurse specialist presented “Simulation in Hospital-Based Education” for DeSales University Faculty as well as other universities and hospitals in this area. In June of 2009, the simulation nurse specialist and simulation research assistant presented a simulation roundtable for faculty members at Cedar Crest College.

Central Lines Collaboration: The DOE simulation team coordinated the LVHN Central Line Course and hosted the course at the 1247 simulation center. This course is required of all incoming residents and includes collaborative nursing education.

Resident Assessment: The DOE simulation team coordinated the assessment phase of the 2009 New Resident Orientation which was held at the LVHNISC.

Cross Department Collaboration: The simulation team facilitated the transfer of the LP training from EM to IM through use of Sharepoint and shared faculty and mannequins. Thanks go to EM for sharing materials and faculty.

TeamSTEPPS Training: The simulation team facilitated LVHN signing up for TEAMSTEPPS train the trainer workshop. Ten LVHN personnel from DOE, OB, Surgery and Anesthesia attended July and August 2009. The simulation team is in early project development to spread teamwork training throughout LVHN.

Training Patient Care Specialists on Simulation: The simulation team developed and is facilitating an ongoing simulation education series for the Patient Care Specialists. The series includes “The Introduction to Simulation, The Introduction to High Fidelity Simulation and the Introduction to Debriefing”.

Nursing Simulation Committee: The simulation team has been involved in the hospital wide nursing simulation committee; assisting in the implementation of hospital wide simulation education.

Pediatric Mock Code: The simulation team has facilitated pediatric mock code training during the Pediatric/PICU education days.

Standardized Patient Program Development: Using existing DOE resources, we began a standardized patient (SP) actor program:

- Amy Smith, PhD, medical educator will train the SPs and provide faculty development in techniques using SPs.
- An orientation program for the SPs has been created.
- Two actors have been oriented to date.
- Standardized patients have been incorporated into the Professional Student Nurse Assistant / Student Nurse Extern workshop, the Support Partner workshop, and the OB Residents simulation training.
- Internal publicity on the pilot program availability of SPs has begun.

Performance Improvements:

Accommodating Adult Learners: One of the most important differences is that adults have accumulated knowledge and experience that can add to or hinder the learning experience. Adults frequently apply their knowledge in a practical fashion to learn effectively. Through experimenting with early simulation activities, we adjusted scenarios to reflect the level of experience the participant's bring with them from novice to expert.

Brining Simulation to the Units: Piloting in situ Simulations: Simulation is not necessarily limited to activities held within the Simulation Center. Taking simulation scenarios into the clinical unit, right where patient care is delivered, heightens the intensity of the immersive experience. As a result out findings have been reported back to hospital wide PI committees about impact, curriculum such as equipment and medication availability.

Trends:

Interdisciplinary Teamwork: Training activities that focus on communication and teamwork skills to promote patient safety including Rapid Response Team trainings, End of Life of Care, and Psychiatric focused simulations are rapidly growing.

Goals:

Service: The LVHN Interdisciplinary Simulation Center (LVHNISC) at the 1247 building was completed in July 2009. DOE staff is now learning to use the audiovisual recording system, and will begin faculty development to train others this fall. Efforts are ongoing to tackle information management so that we may better serve the needs of learners and faculty. In some cases, such as registration, efforts will be integrated with broader DOE plans.

Quality: Provide support to the pediatric mock code blue project.

- Based on a review of mock code videos, medication availability during codes was found to be a systems problem. Dr. Bond has reviewed the various sources of medications with

pharmacy and will work with pediatrics and EM to simplify the process and ensure availability of medications.

- The simulation team, in collaboration with pediatrics, has reviewed the old and new color coded cart contents, met with SDS, and assisted with stocking and labeling of the new carts. Rollout will occur pending cart stocking and approval of the appropriate committees.
- Run our second series of mock codes post new cart rollout.
- Contribute to qualitative manuscript on the process of using simulation for improving safety. Report back to quality/ safety bodies on pediatric care issues identified in multiple forums.

People: The simulation team will continue to work diligently to provide opportunities for faculty development in the area of simulation. This will include participation in the Teaching Leader Series of seminars as well as other opportunities for the development of Clinical Staff Development and Patient Care Specialists nurse educators.

Finance: A simulation cost center was created and tracking mechanisms have been created to support equipment use and budgeting. Our goal is to develop financial tools that can show the cost of simulation training, cost avoidance of providing internal training, and when possible, links between simulation and process change and/or clinical outcomes.

Growth: The Perioperative safety course is nearly completed. This has involved the DOE team working collaboratively with DOS to:

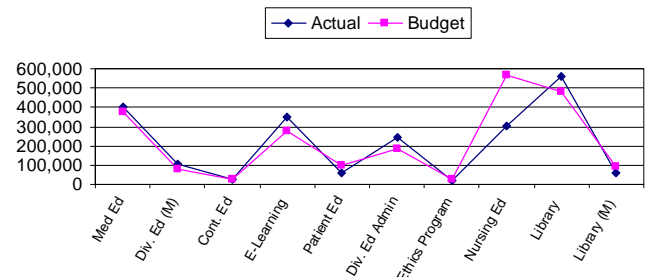
- Determine learning objectives
- Determine educational approach
- Power point with audience response system
- Video vignettes
- Create the educational content
- Choose and procure videos from outside sources
- Write scripts, shoot, edit, and review in house videos (six brief vignettes)
- Develop post course evaluation forms

Business Administration

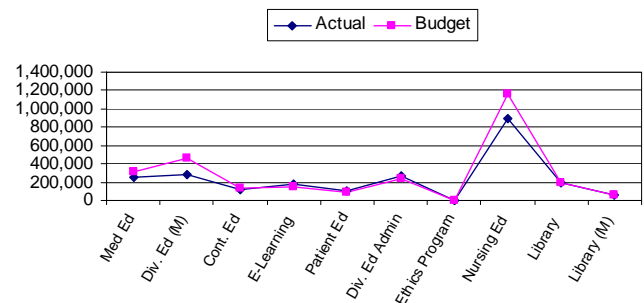
Business Administration includes the DOE business office and leadership concerned with the overall performance and management of business operations and the making and implementing of strategic decisions. We are focused on the process of organizing our people and resources efficiently so as to direct activities toward our common goals and objectives.

- 0.4% Division of Education's expense represented as a % of 2008 hospital total expenses (2009 not available)
- 1::1,249 Ratio of DOE Employees to the learner audience
- 56,839 Total number of learners served
- 11,035 Number of library transactions
- 203 Number of Residents
- 734 Number of medical students rotations
- 1,750 Number of nursing students rotations
- 47 Number of strategic academic affiliations
- 786 Number of youth programs participants
- \$73.32 Total cost of service per participant

FY09 Operating Expenses



FY09 Wages Budget



Accomplishments:

Budgets

\$14.2 million total operating **budget**

- \$2.77 DOE labor wages
- \$2.20 DOE operating (non-labor) expenses
- \$9.20 *pass-through accounts*

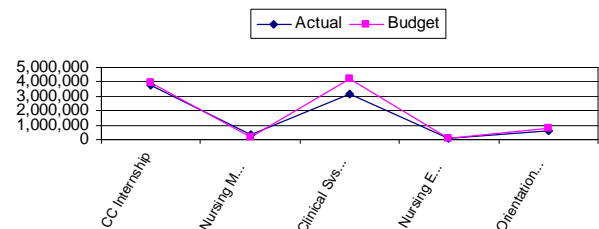
\$12.4 million **actual** operating expenses

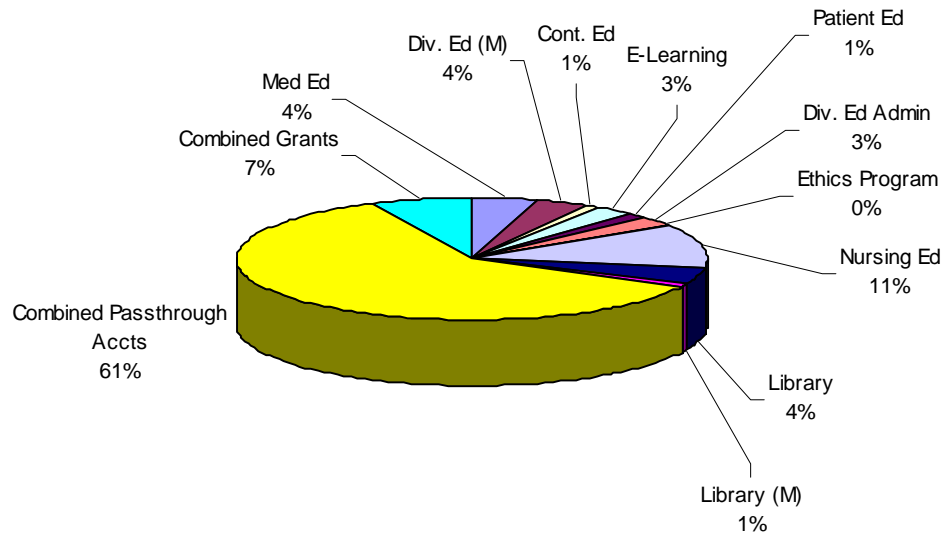
- \$2.34 DOE actual labor wages
- \$2.10 DOE actual operating (non-labor) expenses
- \$8.00 actual *pass-through accounts*

\$1.8 million variance below budget

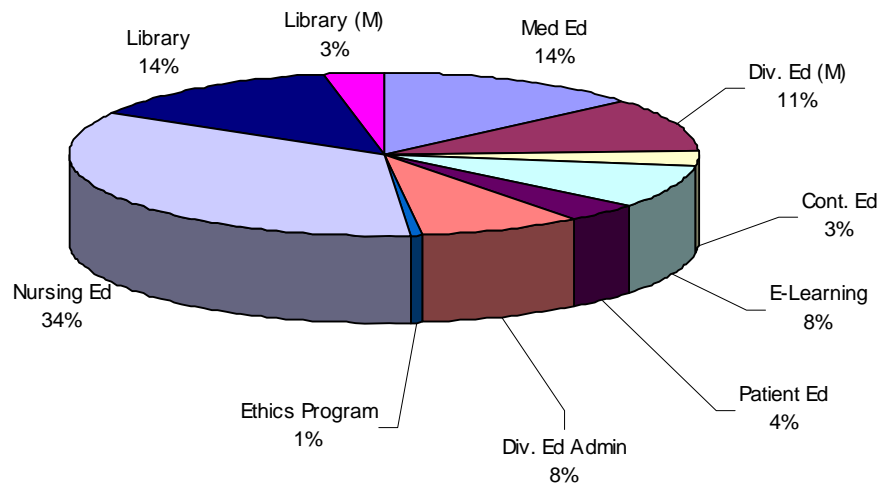
- \$0.43 below budget labor wages
- \$0.10 below budget operating expenses
- \$1.20 below budget pass-through accounts

FY09 Pass Through Accounts





Graph: Total annual budget (14.2 million) distributed as a percentage per DOE cost center.



Graph: Total annual budget (\$4.97 million) distributed per DOE cost center without pass-through accounts or grants showing.

FY 09 July 1 - June 31	Actual Wages	Budget Wages	All-Other Actual Expenses	All - Other Budget	Total Operating Expenses	Total Budget	Variance
Operating Accounts							
02-660 - Med Ed (GME)	246,498.00	305,741.00	403,677.00	376,677.00	650,175.00	682,418.00	(32,243.00)
21-964 - Div. Ed (GME)	284,307.00	456,489.00	104,382.00	78,397.00	388,689.00	534,886.00	(146,197.00)
02-675 - Cont. Education	114,787.00	127,920.00	26,221.00	25,842.00	141,008.00	153,762.00	(12,754.00)
02-619 - E-Learning	182,841.00	143,205.00	346,751.00	274,009.00	529,592.00	417,214.00	112,378.00
02-625 - Patient Education	99,318.00	88,451.00	58,268.00	97,420.00	157,586.00	185,871.00	(28,285.00)
02-123 - Div.Ed Administration	266,299.00	237,674.00	244,275.00	182,620.00	510,574.00	420,294.00	90,280.00
02-658 - Ethics Program	476.00	0.00	17,130.00	28,224.00	17,606.00	28,224.00	(10,618.00)
02-260 - Nursing Education	894,132.00	1,155,574.00	301,463.00	569,479.00	1,195,595.00	1,725,053.00	(529,458.00)
02-770 - Library Services	189,085.00	189,700.00	560,484.00	483,992.00	749,569.00	673,692.00	75,877.00
21-769 - Library Services	65,765.00	64,468.00	56,795.00	90,664.00	122,560.00	155,132.00	(32,572.00)
SubTotals	2,343,508.00	2,769,222.00	2,119,446.00	2,207,324.00	4,462,954.00	4,976,546.00	(513,592.00)
Pass-through Accounts							
02-264 - CC Internship	3,772,635.00	3,956,956.00	0.00	0.00	3,772,635.00	3,956,956.00	(184,321.00)
02-256 - Nurse Svcs Mandatory	352,146.00	183,631.00	0.00	0.00	352,146.00	183,631.00	168,515.00
02-254 - Clinical Svcs. Orientation	3,138,505.00	4,224,955.00	548.00	900.00	3,139,053.00	4,225,855.00	(1,086,802.00)
21-260 - Nursing Svc. Education	110,954.00	87,200.00	58.00	0.00	111,012.00	87,200.00	23,812.00
21-601 - Orientation Nursing	632,261.00	755,987.00	0.00	0.00	632,261.00	755,987.00	(123,726.00)
SubTotals	8,006,501.00	9,208,729.00	606.00	900.00	8,007,107.00	9,209,629.00	(1,202,522.00)
Total	10,350,009.00	11,977,951.00	2,120,052.00	2,208,224.00	12,470,061.00	14,186,175.00	(1,716,114.00)

Capital Projects

<i>Actual</i>	<i>Budget</i>	<i>Project</i>
181,000	200,000	LCMS/LMS Project Year 2 (Managed by Information Services)
76,444	75,830	CSD Classroom Teaching Equipment Upgrades
24,541	25,074	Central Lines Project Year 2

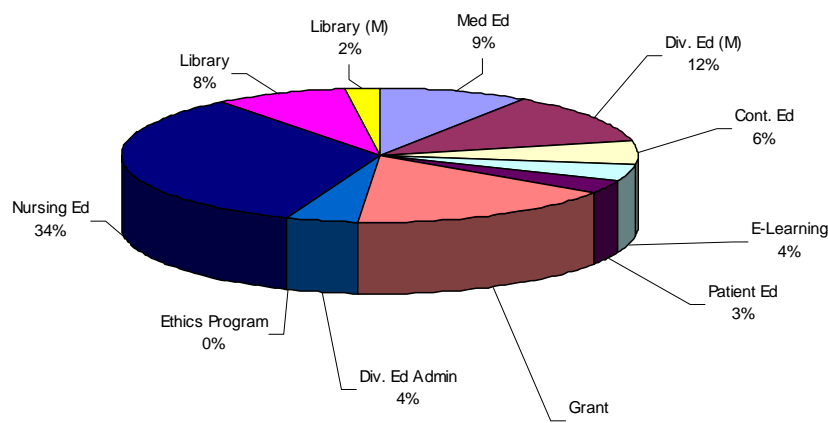
Scorecard

For DOE cost centers that are on Scorecard, all show to be either on or close to budget. The variance in 260 has resulted from the high number of hours associated with orientation classes in the past and the recent transition of resources to curriculum development projects and consulting with unit educators. In other words, we are shifting our focus from graduate nurse orientation and training, to the professional development of our registered nurses; however scorecard calculations do not accurately capture and reflect this. Please refer to the Performance Improvement section and see the project description for *Scorecard*.

	Unit of Service Driver	YTD Ratio Labor \$	Labor Hrs YTD Ratio	YTD FTE	Target Labor \$	Target Labor Hrs	Budget FTE
02-123 Admin	Adj Admis	2.38	0.07	2.67	5.62	0.13	4.75
02-260 CSD	100 Hrs Inst	676.82	20.36	16.56	588.92	20.36	16.80
02-619 eLearning	100 Adj Adm	224.84	6.21	2.65	251.28	7.27	2.70
02-625 Patient Educ	100 Adj Adm	139.35	4.21	2.39	188.21	6.92	3.25
02-660 MED / GME	Adj Admis	3.92	0.13	5.71	3.13	0.11	4.20
02-675 Con Educ	100 Adj Adm	172.73	6.97	3.66	213.24	8.88	4.10
02-770 Library Svcs	100 Adj Adm	199.48	7.58	4.75	209.92	9.30	4.75
21-769 Library Svcs	100 Adj Adm	71.60	2.55	1.25	71.59	2.68	1.25
21-964 MED / GME	Adj Admis	3.67	0.10	4.47	4.94	0.17	5.75
				44.11			47.55

Staffing

During the fiscal year Dr. William Bond was promoted from Medical Director of Educational Technology and Research to Chief of the Division of Education. (Graph: Distribution of labor as a percentage by cost center (includes grant funded positions).)



Employee Satisfaction

The 2009 Employee Satisfaction survey was completed by 36 of 44 employees in the DOE. The prior survey was 2007 which had 26 respondents.

	2007	2009
Overall Satisfaction	65% very satisfied	>75% very satisfied
Performance Indicators	10 items	2 items
High Importance but Low Performance		
Performance Indicators	15 items	32 items
High Importance and High Performance		
Top two ways to improve efficiency of department	Staffing Equipment	Staffing Equipment
Which departments could help us operate more efficiently	Human Resources Info Services	Info Services Human Resources
What is the best thing about working at LVHN	Coworkers	Coworkers
What would make this a better place to work	Benefits	Benefits
Customer Service	4.70	4.55
Community Orientation	4.63	4.71
Communications	3.78	4.07
Compensation and Benefits	3.78	3.93
Management	4.14	4.28
Productivity	3.09	4.04
Overall Job Satisfaction	3.73	3.94
Employee Retention	4.65	4.53
Employee Engagement	4.28	4.38

Recruitment

Recruiting qualified individuals remains our biggest challenge. The DOE positions require a unique mix of knowledge, skills and abilities; spanning clinical specialty, educational theory, instruction and curriculum, development and educational psychology, technology and leadership. This is further combined with a search for solid foundation in customer services, consultative practices, and solid project management skills. An analysis of qualified candidates who turn down interviews or decline offers points to non-competitive salary/benefits offers compared to those of industry. Combinations of these factors have led to unusually long recruitment cycles.

Community Service

Separate from and in addition to the DOE primary mission and goals, we formed a Community Services Committee with the simple purpose to directly benefit our local community. People become involved in community service for many reasons: for some, serving community is an altruistic act, for others its camaraderie with coworkers with a worthy cause behind it. The committee is made up of a core group of volunteers who rotate annually with the responsibility of organizing division wide monthly activities that directly contributed this past year to the Ecumenical Food Bank, Stack-the-Pack School Supplies, Cold Weather Clothing Drive, Center for Healthy Aging Holiday Tree, ASPCA, Salvation Army, Autism Walk, Jenn's House as well as others. 15 events were held gathering supplies, donated items, personal time and raising an additional \$1,000 for cash donations.

DOE in the News

Reported in the Morning Call *Valley Program Gives Seniors Peek into Health Care Profession* article highlighted our Youth Programs and success students are having as a result. Spring edition of *Motivos Bilingual Magazine* feature article *A summer Spent Volunteering Can Help you Decide* told the story of a student's experience in our Research Scholars Program. The 2009 Corporate Learning Factbook Healthcare Edition featured a case study on our use of technology to engage learners.

Performance Improvements:

Establishing Outcomes with Solid Metrics and Analytics Demonstrate Program Value: Over the last two years the DOE has been working on establishing a solid baseline understanding of our program capacity including indicators representing scope, volumes, costs and efficiencies. Specifically types of topics, content, number of programs, people, hours, costs... in other words all the things we can count. In the last year we completed a comprehensive Front-End Analysis to examine industry best practices and requirements for the standardized compilation and reporting of metrics and analytics which will measure the effectiveness and institutional benefits of educational programs offered by the Division. Through this analysis of the division's current practices, personnel, business processes, technologies, and performance support solutions, as well as obtaining support by our Human Resources, Quality and Patient Safety, and Organizational Development departments, a detailed project plan and Statement of Work were developed by our project team. This provides us a blueprint to support the development of a "common language" to measure our programs and the technology requirements needed to effectively centralize and automate the compilation and reporting process of capturing the basic indicators of learning programs; learner's reaction and planned action to a program (Kirkpatrick Level 1, specifically relevance, importance, usefulness, appropriateness, intent to use and motivational value); and the learning and confidence achieved by a program participant (Kirkpatrick Level 2, specifically skills, knowledge, capacity, competencies, and confidences).

Creating an Accurate Scorecard to Understand Resource Utilization: The current DOE scorecard uses "adjusted hospital admissions" as a base metric to assess our resource utilization. However, we have repeatedly identified that there is no relationship with our service volumes and this metric. There are potential inverse relationships that demonstrate an increase in DOE resource utilization developing and delivering learning solutions associated with the retraining and movement of clinicians as they are displaced from low volume units. A down turn in hospital admissions actually leads to more work in the DOE. To address this we have been working with Management Engineering to extract "adjusted number of learners" as a metric from the Information Services Security Data Base which represents approximately >90% of our population and establishing new ratios based on historical trend data. A model has been created. Next steps are to implement this change in Scorecard and Labor Budget Worksheet applications. This project is currently on hold due to Management Engineering limitations.

Developing Professional Staff Core Competencies: To assure every member within DOE had a solid foundation in our core competencies of Project Management, Customer Service, Curriculum & Instruction, Instructional Technology, Consultative Skills, and Feedback and Assessment, a Professional Development program was started aligned with these competency areas. We partnered with LCCC Center for Business and Industry. Each employee participating has at least one or more active projects they are using throughout classes to illustrate their building knowledge. Employees' managers are directly involved in monitoring progress on their

project(s) and offering feedback and reinforcement to build greater transfer of knowledge to the job. Early assessment and satisfaction data is very positive. The program will remain active through FY10 during which business results will be assessed.

eCommerce Proof of Concept Reduces Administrative Overhead: This process will be implemented by the 1st Quarter of 2010 through functionality part of the LMS (eLearning System) package. The purpose of this process change is to streamline the payment step for conference registration by allowing internal and external participants to register on-line and allow credit card payments as an option. This will enable concise tracking of participant's payments as well as immediate posting to the general ledger via the eLearning System. The Continuing Education team's conferences are the first phase of this implementation. Opportunities exist for the future utilization of this process for registering paid courses for the Simulation Learning Lab, and the subsequent ability to recognize revenue to specific cost centers.

Leveraging Professional Conference Attendance for Division Growth: We implemented a standard operating procedure for making conference attendance requests to assure alignment with department goals and a web based post conference summaries database that facilitates learnings from the conference are brought back to the department. Part of the standard operating procedure is to have attendees present conference findings and major highlights at team meetings as well as feed-forward into department planning and trend information.

Fostering Professional Reading and Collegial Discussion Groups: Approximately each month a reading assignment is made division wide. At the next months division meeting the article or book is presented and discussed including identifying specific action plans. Two reading groups were established; the DOE Leadership Team and the entire staff, with specific assignments relevant to each. This year's assignments and discussions included:

- *Silence Kills: The Seven Crucial Conversations for Healthcare.* VitalSmarts Industry Watch and American Association of Critical Care Nurses 2005.
- *Learning Technologies for Healthcare Education and Training.* Anya Wood, MDE, University Health Network and Gary Woodill, Ed.D, Brandon Hall Research 2008.
- *Organization Excellence Management at Caterpillar: Governance.* Bersin & Associates Research Report. Chris Howard. December 2007.
- *Mayo Clinic Model of Education.* Mayo Clinic College of Medicine.
- *The Future of HealthCare Report.* Deloitte 1005 Biennial Survey 10th Edition.
- *Blogs, Wikis and Social Networking, Oh My! Which Do I Choose for My Training?* Webinar.
- *Get Virtual! Second Life for Newbies.* Webinar.
- *Designing High Impact Assessments.* Webinar.
- *Usage and Value of Kirkpatrick's Four Levels Research.* The eLearning Guild Research. Joe Pulichino. August 2006.
- *Evaluating Training and Performance Interventions.* Literature Review. AJ Lemheney.
- *The Value of Learning; How Organizations Capture Value and ROI.* Patricia Pulliam Phillips and Jack J. Phillips. Pfeiffer 2007.
- *The Metrics and Analytics Front End Analysis and Statement of Work.* Knowledge Design Group. May 4, 2009.
- *The Chief Learning Officer.* Tamar Elkeles & Jack Phillips. Elsevier 2007.
- *Now Discover Your Strengths.* Marcus Buckingham & Donald Clifton. The Free Press 2001.
- *Happier.* Tal Ben-Shahar. McGraw Hill 2007.

- *Good To Great and the Social Sectors.* A Monograph to Accompany Good to Great. Jim Collins. Harper Business 2005.
- *Managing to Learn.* John Shook. The Lean Enterprise Institute. 2005.

Managing Kasych Meeting Room Scheduling: A formal process and protocols were put in place regarding room reservation requests streamlining an otherwise chaotic process while providing for customer satisfaction.

Automating I/S Request Process: A process has been put in place utilizing Sharepoint software for prioritizing requests by all employees of the Division of Education along with a liaison between I/S and Division of Education. Each Director is charged with initiating the request on behalf of their direct reports. Requests include relocation and upgrades of equipment, new equipment purchases and additional software requests. Requests can then be accurately tracked with I/S representatives including status and managing expectations.

Implementing New Bank of America (Visa) Card System: This process enables managers to immediately receive notification of purchases by employees and subsequently offers the ability to either approve or disapprove the transaction at that point. The system also provides various management reporting functions to track specific general ledger transactions as well as historical spending trends. The Division of Education typically has approximately 300 transactions a month. The manager can also dictate which General Ledger accounts should be appropriately charged.

Opportunities:

Metrics and Analytics: Now that a front-end analysis is complete and we have begun the implementation of Level-1 and Level-2 (Phillips - Kirkpatrick model) measurements the opportunity is to continue this to a next phase finding more sophisticated measures. Following the Phillips – Kirkpatrick model to Level-3, 4, and 5 or measures representing the learner’s ability to apply to the job, impact and consequences on business, and return on investment. We are responsible not only for design and delivery of high quality programs but showing that these programs have direct business impact and realize a value to the organization, our patients and our community. We need to have a clear measurable understanding of content and materials in the work environment (level-3) for the extent of use, task completion, and frequency of use, actions completed, success, barriers, and enablers; the consequences of the use of the content and materials expressed as business impact measure (level-4) examining productivity, revenue, quality, time, efficiency, customer satisfaction, and employee engagement; and a comparison of monetary benefits from the program to costs (level-5) for a clear benefit / cost ratio, ROI%, or payback period of select programs.

Governance: The DOE is positioned to offer far more strategic oversight with establishing the foundations of the future “one room school house” as well as the current networkification of core learning functions, methodologies and strategies. The need has grown for learning to be treated more strategically. Learning should be more closely linked to business objectives and integrated into an overall federated-model for higher performance across the institution. The DOE is striving to increase performance and reduce inefficiency, achieve economies of scale by streamline training and learning programs that are redundant, inconsistent, or have conflicting standards across the enterprise; these cost extra money and confuse learners. The DOE is experimenting with aligning operating groups; when operations are too complex, top corporate goals may be

dissipated or missed through ineffective or unaligned training. The DOE is attempting to resolve turf battles and conflicts among training groups that otherwise go unresolved and burn more money and time. Ultimately we are trying to improve the investment focus; investments in different and often incompatible infrastructures across the enterprise increase maintenance costs and undermine the ability to analyze and report on business impact of training and development investments.

A3 Learning: With both the above mentioned opportunities to expand on our measurements of outcomes and establish governance across learning functions, provides tremendous opportunity to apply the A3 methodology.

Goals:

People: Faculty development in teaching with simulation (also supports USF teaching needs)

- Develop curriculum for faculty development in simulation
- Biannual physician/ nurse course offerings
- Course feedback >4 on level one metrics

Leadership team development

- Section team meetings, go to the gemba and apply the 3 “F’s” (Focus, fix and follow up)
- A3 Learning w/ leadership team
- Division professional development program

As part of the Community Service Committee, plan, organize and execute community (charitable) events for fund-raising initiatives.

- Plan, collect funds and organize at least one community service event.
- Plan and support two additional events in collaboration with Community Health Studies and DOE.
- Plan and support at least 2 additional events.

Service: Improve the process of accrediting CME programs

- Turnaround time reduced to six months
- Improved call in process for registration
- online registration process for 10% of CME offerings

Facilitate Networkification of Division of Education

- Development of Institutional CE program that is centrally funded/ organized for Primary Care
- Formalize the LMS Governance group and charter
- Draft a Program wide Governance model and secure sponsorship

Support eCommerce feature for future use in CE and Simulation programs.

- Ensure that the proper flow of transactions is correct prior to implementation of live fund transfers.
- Utilize the CE platform to develop and plan for future revenue implementation for Simulation programs
- Create a business model to be utilized by Simulation Learning Lab for revenue realization

Quality: Quality and safety curriculum for all residents as part of larger all resident curricular offerings

- Curriculum plans for all resident curriculum
- launch of one online module or resident wide lecture series
- Curriculum plan document

Achieve National award recognition for Division of Education

- Apply for at least one national award programs in Training & Development industry
- Establish connection with institutional quality measures
- Apply for accreditation of simulation program

Cost: Support network quality improvement / cost reduction efforts, including SPPI efforts as appropriate

- Identify target for education (collaborate with T Ardire)
- Method and curriculum developed to assist in reaching target
- Tracking of cost reduction

Implement metrics and analytics

- Consolidate measurements forming the basis of our division report card
- Implement report card use within division on month basis with quarterly report out to senior mgt
- Design level-3 approach to continue metrics project into next phase

Report and substantiate the contribution to LVHN of the Division of Education through meaningful educational statistics.

- Implementation of metrics and analytics for Division of Education
- Work with teams to standardize the measurements across sections.
- Establish a dashboard for monthly combined statistics.

Growth: Development of the one room school house concept (ORSH)

- Conceptual plan
- Document basic architectural plans
- Funding proposal developed

Establish USF regional medical campus

- Facilitate Cross section support within DOE for USF implementation
- Align staffing to support student services and technologist support for distance learning
- Provide adequate project management support

Support the establishment of USF as primary affiliate for regional medical campus (financial/business information).

- Track and monitor all transactions flowing through the Division of Education that relate to USF
- Gain an increased understanding of the business model negotiated by both parties to successfully establish this relationship.
- Establish a separate cost center for isolating revenues/expenses moving forward.