



Graduate Medical Education 2010 Annual Report

Submitted from Division of Education
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Introduction

Throughout 2010, the Graduate Medical Education community at Lehigh Valley Health Network has continued to develop and implement policies and learning strategies that achieve accreditation requirements and that prepare our resident physicians to serve the Lehigh Valley community and beyond. The Graduate Medical Education Committee (GMEC) and the Division of Education have provided the institutional oversight required to achieve these ends.

GMEC Mission – to offer graduate medical education programs in which physicians in training develop personal, clinical, and professional competence under the guidance and supervision of the faculty and staff.

GMEC Vision –to develop the strategies and mechanisms needed to ensure that LVHN’s graduate medical education programs have adequate educational, financial, and human resources to demonstrate measurable improvements in learning and patient outcomes.

GMEC Strategy – GMEC’s strategy is based on organizational objectives and the Accreditation Council for Graduate Medical Education (ACGME)’s definition of “institutional competency”, which includes an organization’s ability to:

- Gather and analyze data from the educational and clinical environments.
- Ensure resident education in patient safety and quality of care.
- Lead program and academic innovations.
- Predict and trend performance.
- Develop, align and implement policies and procedures that impact graduate medical education programs.
- Create conditions that promote collaboration and knowledge sharing and transfer.

We are pleased to provide the following 2010 Graduate Medical Education Report highlighting evidence of ongoing strengths, opportunities and the larger trends affecting Lehigh Valley Health Network’s Graduate Medical Education programs.

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Overview: Academic Years 2008-10

As a member of the 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. Below is an overview of GME-related descriptive statistics, trends and recent highlights.

I	<u>Demographics</u>	<u>AY08</u>	<u>AY09</u>	<u>AY10</u>	<u>Recent Highlights</u>
1	# residents/fellows	199	202	206	Expansion in Cardiology, EM, and Surgery
2	# visiting residents	70	75	83	Additional visiting residents to burn service
3	# total accredited residency programs	17	18	18	AY09 - Approved ACGME Cardiology Fellowship
4	# allopathic (ACGME) accredited programs	11	12	12	AY09 - Approved ACGME Cardiology Fellowship
5	# osteopathic (AOA) accredited programs	4	4	4	Includes FM, EM, IM internship and EMS fellowship
6	# dually (ACGME/AOA) accredited programs	2	3	3	AY09 - Approved ACGME EM residency
7	# re-accredited programs	3	2	1	AY10 – FM AOA warded 5yr re-accreditation
8	# new program(s) applied for	1	1	2	AY10 – Palliative Care Fellowship & Pediatric Resid.
9	# of graduates	76	78	77	Avg 12% graduates retained in primary care last 3 yrs
II	<u>Recruitment</u>				
1	# U.S. medical school applicants	1066	1176	1462	Increases due to reputation and increase in graduates
2	# applicant interviews conducted	534	566	631	Attractions: reputation, technology, location, and peers
3	# match positions available	73	74	77	100% match; no scramble
4	% from allopathic accredited medical schools	53%	51%	45%	AY09 - First match from University of South Florida
5	% from osteopathic medical schools	34%	35%	39%	50% osteopathic match from PCOM (3 yr avg)
6	% from international medical schools	13%	14%	16%	Diverse mix of international medical schools
7	% from Pennsylvania medical schools	60%	50%	37%	Majority from Philadelphia medical school market
8	% who completed at least 1 LVHN clerkship	44%	42%	23%	One metric to assess clerkship student experience
III	<u>Program Development</u>				
1	# internal reviews conducted	2	5	3	Institution, FM, IM, OB/GYN, and C/R
2	# progress reports reviewed and approved	3	4	4	Reviewed by GMEC 6-months post internal review
3	Resident satisfaction survey				
4	Participation rate	71%	64%	72%	Switch to electronic survey
5	Overall satisfaction (1=poor, 5=excellent)	4.01	3.95	4.14	Residents stated the need for higher quality feedback
6	GME policies reviewed and updated	10	17	5	Updated disciplinary action and grievance procedures
7	# residents contributing to publications	26	29	51	Poster abstracts in previous years support publications
8	# residents contributing to poster presentations	59	51	38	Re-assessing support levels
9	% senior residents participating in QI	n/a	63%	97%	Programs have patient safety/ QI projects in curriculum
IV	<u>GME Finance (per LVHN finance dept)</u>				
1	Additional resident FTE's reimbursed	12.96	3.48	19.45	Growth plan and standardization in reporting
2	Additional GME reimbursement revenue	\$641k	\$603k	\$2.9m	Result of a 3-year rolling average at LVHM
3	Unused GME Medicare FTE's at LVHM	12.88	19.73	13.66	Action plan to use FTE's in progress
V	<u>Faculty Development (DOE provided)</u>				
1	# faculty development workshops offered	n/a	14	30	New interprofessional <i>Teaching Leader Series</i>
2	# faculty attended	n/a	319	389	50% nurses, 25% physicians, and 25% other
3	# resident as teacher workshops offered	n/a	n/a	5	Topics on adult learning, feedback and teamwork
4	# residents attended	n/a	n/a	46	Mostly residents from FM and OB/GYN programs

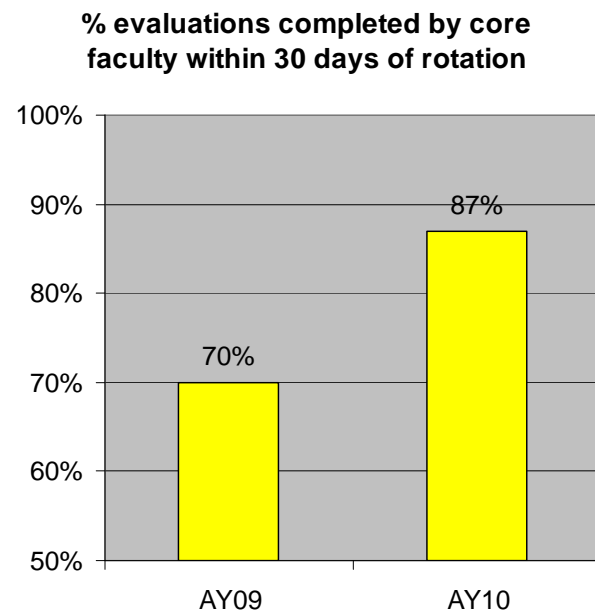
Improvements in Evaluation, Remediation and Administration

The Graduate Medical Education Committee (GMEC) is committed to offer graduate medical education programs in which physicians in training develop personal, clinical, and professional competence under the guidance and supervision of the faculty and staff. GMEC provides institutional oversight of LVHN's graduate medical education programs which is limited to ensuring resident supervision, evaluation, and policy development and implementation.

Resident Evaluation –GMEC has developed and implemented a policy to ensure timely feedback of residents. The goal is that all core faculty complete 75% of their evaluations assigned to them within 30 days of a resident's completion of a rotation. Guidelines for defining core faculty include the following:

- Program director identifies a faculty member as critical to providing feedback
- Core faculty is experienced in educational methods (like evaluation and in depth knowledge of competencies).
- Core faculty understands the department's goals, objectives, and curriculum.
- Core faculty is involved in evaluations on a routine basis.
- Core faculty is expected to complete evaluations online.
- Core faculty spend substantial amount of time working with residents.
- Core faculty does not have to be specified in the accreditation Program Information Form.

In AY09, 70% of core faculty achieved this goal. Program directors in collaboration with Division of Education's faculty development initiative improved this metric and overall timing of feedback to residents. In AY10, 87% of core faculty achieved this goal.



Remediation Guidelines and Resources – In AY10, GMEC standardized resident remediation guidelines so that programs have more tool, resources and processes to proactively support resident academic development and education-level remediation. By doing so, programs will be better equipped to support resident development.

GMEC Administrative Improvements – In AY10, based on an Institutional Internal Review, GMEC underwent an A3 process to: a) better align administrative duties to current and future accreditation standards and b) better respond to needs in the GME community and LVHN. As a result, GMEC was reduced in size (but met more frequently) and a subcommittee structure was formalized. The efficiency and effectiveness of this new structure is currently being evaluated. The GMEC - A3 is located on the Division of Education's intranet site.

New Accreditation Requirements

Although the Accreditation Council for Graduate Medical Education (ACGME) limits the work hours of residents, concerns about fatigue on patient safety persist. A 2008 Institute of Medicine (IOM) report recommended improved adherence to the 2003 ACGME limits, naps during extended shifts, a 16-hour limit for shifts without naps, and reduced workloads. In response, ACGME convened a task force to examine and propose changes to resident duty hour requirements. LVHN's Designated Institutional Official, Dr. Thomas Whalen, was a committee member on this national taskforce. Below is a summary of new accreditation requirements.

Type of Supervision	Definitions (effective 7/1/2011)
Direct	<ul style="list-style-type: none"> The supervising physician is physically present with the resident and patient.
Indirect	<ul style="list-style-type: none"> Direct supervision immediately available – The supervising physician is physically within the confines of the site of patient care, and immediately available to provide Direct Supervision.
	<ul style="list-style-type: none"> Direct supervision available – The supervising physician is not physically present within the confines of the site of patient care, is immediately available via phone, and is available to provide.
Oversight	<ul style="list-style-type: none"> The supervising physician is available to provide review of procedures/encounters with feedback provided after care is delivered.

Duty Hour Aspect	New Requirements (effective 7/1/2011)
Moonlighting	<ul style="list-style-type: none"> All moonlighting activities count toward 80 hour work week. 1st year residents are not permitted to moonlight.
Mandatory Time Free of Duty	<ul style="list-style-type: none"> One day free of duty every week (averaged over four weeks). At home call cannot be assigned on these free days.
Maximum Duty Period Length	<ul style="list-style-type: none"> Duty periods of 1st year residents must not exceed 16 hours in duration. Duty periods of 2nd year residents and above 24/4 hours for transitional care, with exceptions to continue care to a single patient. Strategic napping, particularly after 16 hours of continuous duty and between 10 p.m. and 8 a.m., is strongly encouraged
Minimum Time Off	<ul style="list-style-type: none"> 1st year residents should have 10 hours and must have eight hours free of duty between scheduled duty periods. Intermediate level residents (defined by RRC) should have 10 and must have eight hours free of duty between scheduled duty periods. Must have at least 14 hours free of duty after 24 hours of in-house duty.
Frequency of Night Float	<ul style="list-style-type: none"> Residents must not be scheduled for more than 6 consecutive nights of night float.
Maximum In-House on-Call	<ul style="list-style-type: none"> In house call no more than every 3rd night averaged over 4 week period. At home call not subject to every 3rd night or 24/6 limitation. 2nd year residents and higher – no more than every 3rd night over four weeks

Implications of new requirements

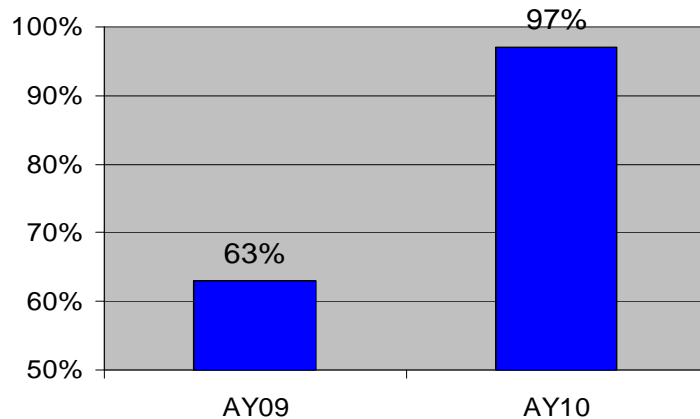
Based on several recent publications, implementing the new duty hour requirements will be costly, and their effectiveness is unknown. If highly effective, they could prevent patient harm at reduced or no cost from the societal perspective. However, net costs to teaching hospitals would remain high. Furthermore, it is unclear whether additional limitations of resident work hours are necessary or could accommodate the growing amount of information and skills that are required to become a competent physician.

Resident Training in Patient Safety and Quality Improvement

In AY10, 97% of senior residents participated in formal quality improvement and patient safety projects and quality assurance case studies. The increase from AY09 to AY10 is because programs have incorporated significantly more patient safety and quality improvement activities into residency curriculum.

In addition, programs have done so in order to better assess and evaluate residents' competencies for practice-based learning and systems-based practice. Furthermore, residents benefit from LVHN's focus on patient safety and quality improvement environment. These opportunities provide residents unique educational experiences to learn how patient safety and QI initiatives and committees can improve patient care and safety.

% residents participating in patient safety and QI



Lean and QI Initiatives

- SPPI Value Streams regarding patient flow, collaborative rounding, and admissions.
- Numerous quality improvement projects in ambulatory setting.
- Numerous quality assurance case reviews
- Internal Medicine - Exemplary Care and Learning Site (K5)
- Family Medicine – Preparing the Personal Physicians for Practice initiative

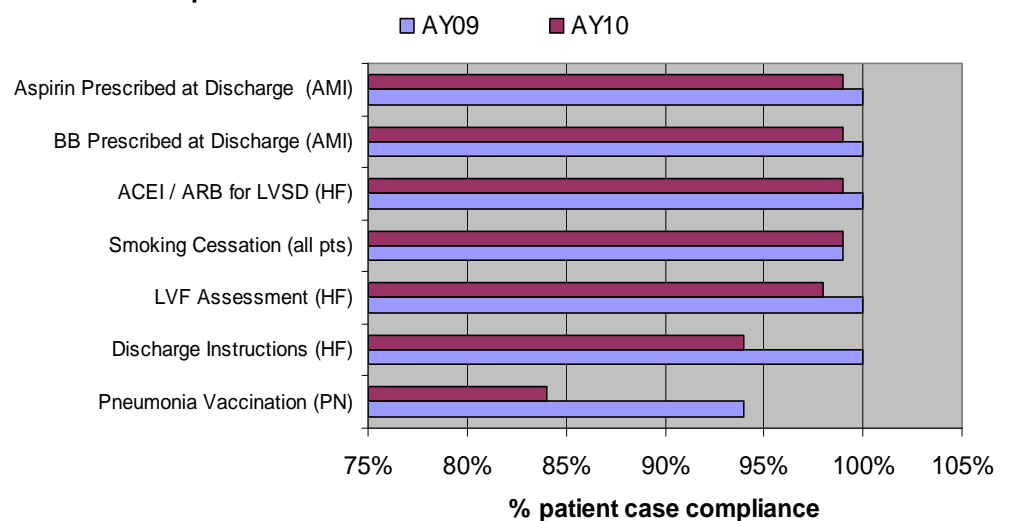
Patient Safety and QI Committees

- Clinical Case Review
- Code Blue
- Diabetes Quality Improvement Team
- Department-specific PI/QA committees
- Occurrence Analysis Committee
- Patient Safety Council
- Protocols and Observation Unit Committee
- Quality Improvement Team
- Surgical Quality Council

Resident Performance on Core Quality Measures

In AY10, 134 residents in four programs had contact with patients where core measures were applicable. As illustrated in graph to the right, residents sustained their performance in a majority of core measures.

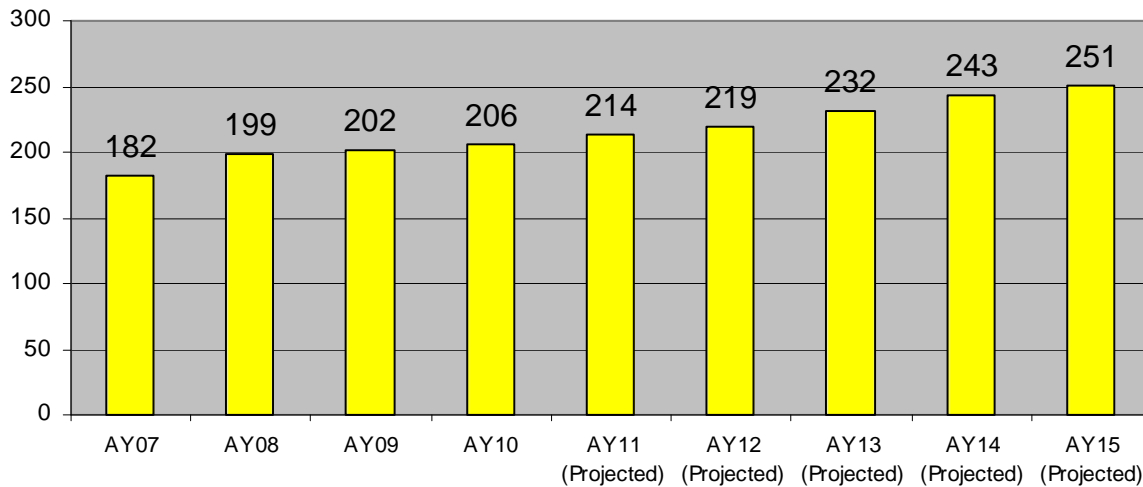
Comparison AY09-10: Resident Core Measures Performance



Graduate Medical Education Growth

New and Expanding GME Programs - New GME programs are starting and some existing programs are expanding. 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.

AY 07-15: Number of Residents and Fellows



Below is a summary of the residency and/or fellowship programs that are planning to expand or start a program.

	AY10 (# of residents/fellows)	AY15 (# of residents/fellows)
Cardiology Fellowship	12	15
Colon/Rectal Surgery	2	2
Dental Medicine	7	7
Dermatology	---	6
Emergency Medicine*	54	56
Emergency Medicine Services Fellowship	0	0
Family Medicine*	21	21
General Surgery	23	28
Hematology Oncology Fellowship (<i>applying</i>)	---	2
Internal Medicine*	51	51
Neurology (<i>re-applying</i>)	---	6
OB/GYN	19	20
Palliative Care Fellowship (<i>withheld</i>)	---	2
Pediatrics (<i>applying</i>)	---	18
Plastic Surgery	3	3
Pulmonary Critical Care (<i>with Penn State</i>)	1	1
Surgical Critical Care Fellowship	1	1
Transitional Year	12	12
TOTALS	206	251

* Dually Accredited programs (allopathic and osteopathic)

GME Finance

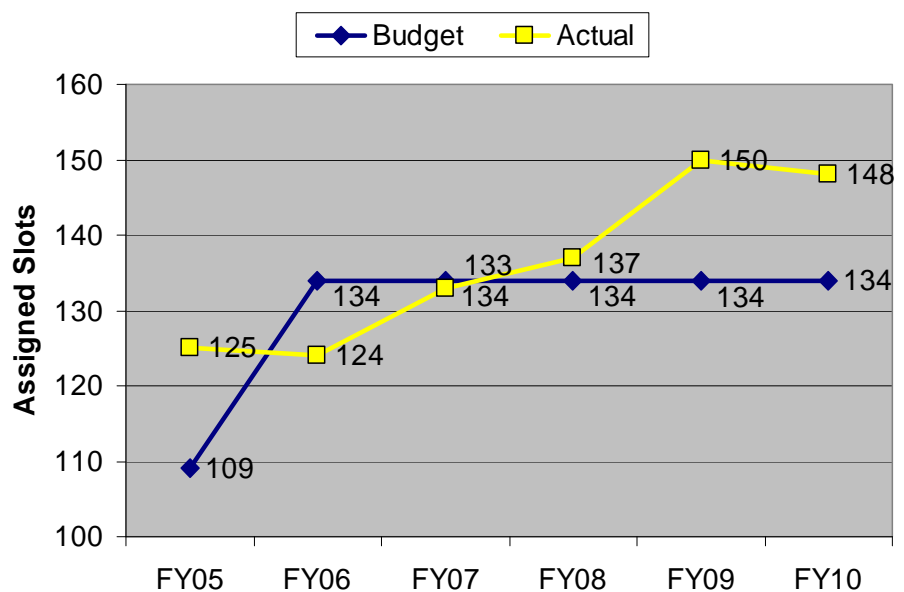
Since 1965, Medicare has been reimbursing teaching hospitals for their training of doctors. In 1996, based on individual teaching hospital's cost reports, Medicare capped graduate medical education reimbursements. Under the LVH-CC/17th Medicare number, indirect medical education GME reimbursements were 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).

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 (25 at LVH-CC/17 and 16 at LVH-M).

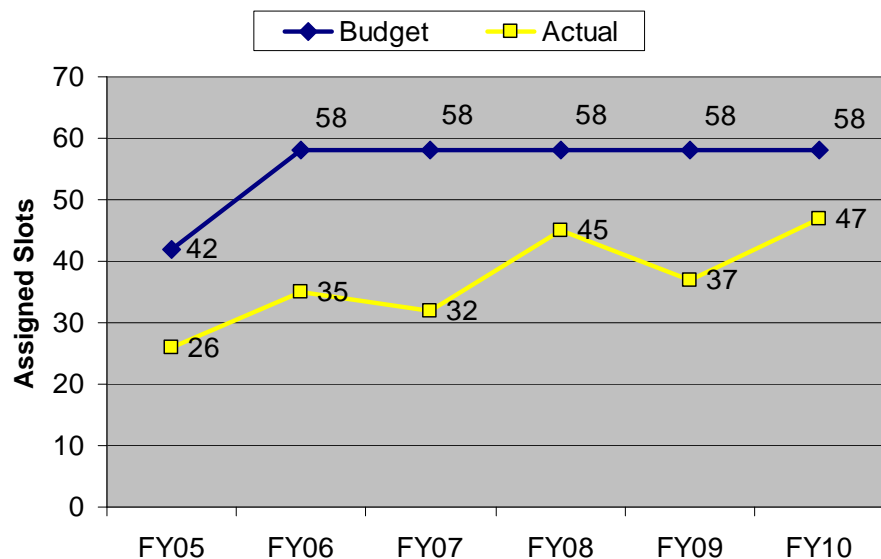
These newly funded GME positions increased pre-existing caps at both LVH-CC/17 and LVH-M sites. To illustrate changes in Medicare GME caps compared to actual resident FTE counts, the graphs are provided for LVH-CC/17th and LVH-M.

The GME Finance group (sub-group of GMEC) monitors FTE budget vs. actual counts to ensure that programs have sufficient financial support. In addition, GME finance group advises GMEC and Senior Management on plans that maximize GME reimbursements while improving resident education and clinical needs.

LVH: Medicare Resident FTE's - Budget vs Actual



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

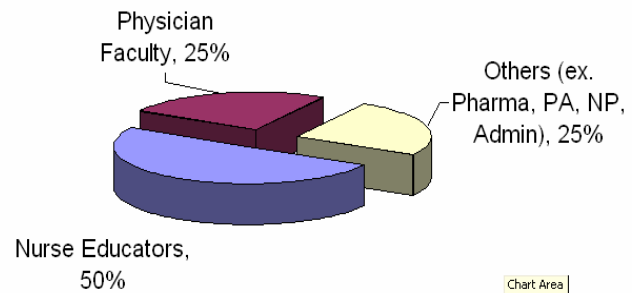


Faculty Development

With generous support from the Dorothy Rider Pool Health Care Trust, the Division of Education sponsors and delivers network-wide, *interprofessional* workshops for all clinical educators (i.e. physicians, nurses, physician assistants, etc). This workshop series called, *The Teaching Leader* has been designed to assess and build LVHN's capacity and capabilities for teaching and outcomes-based education.

Below are a few stats on the series from 2008-2010:

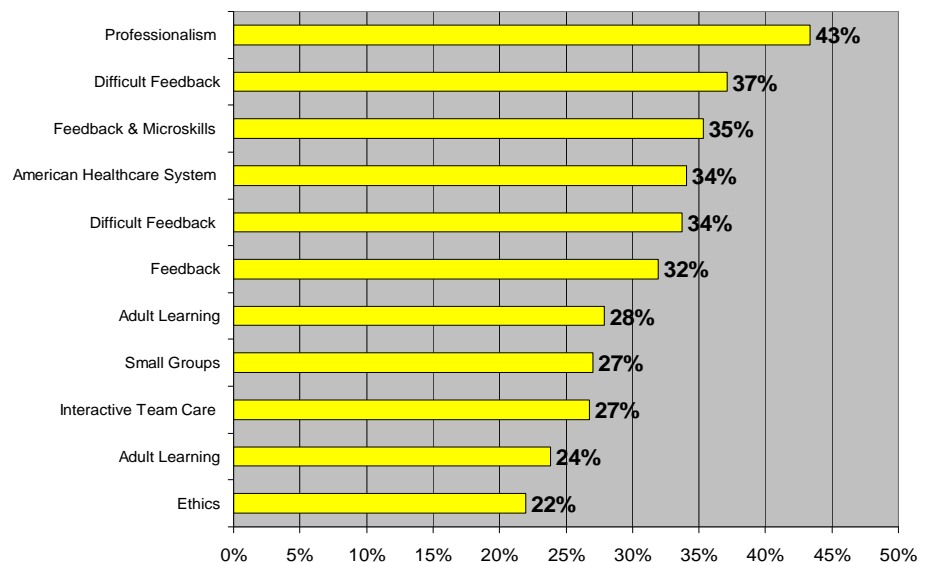
- 12 workshops delivered in AY09
- 30 workshops delivered in AY10
- 34 workshops scheduled in AY11.
- Overall participant breakdown:
 - 50% nurse educators
 - 25% physician faculty
 - 25% other educators
- Workshops delivered content on diverse topics such as:
 - Adult Learning and Teaching Strategies
 - Small Group Teaching/Facilitation
 - Narrative Medicine
 - Teaching Ethics and Professionalism
 - Feedback and Microskills
 - Interactive Team Communication
 - Difficult Feedback/Remediation
 - Using Technology to Enhance Learning



Gains in Teaching (specific content):

At the conclusion of each workshop, participants are 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. AY10, participants reported gains in their teaching specific content such as professionalism, learning styles, small group teaching methods, how to give feedback, and use of simulation.

AY10 - Reported % Gains in Teaching (specific content)



In addition to post-workshop evaluations, an interdisciplinary focus group was conducted. Focus group respondents reported that *The Teaching Leader Series* strengths' included:

- Small group interactions among learners very helpful
- Good selection of topics, session times and locations
- Teaching toolkit and other resources maintained on TLS sharepoint site
- TLS sessions are excellent interprofessional learning and networking opportunities

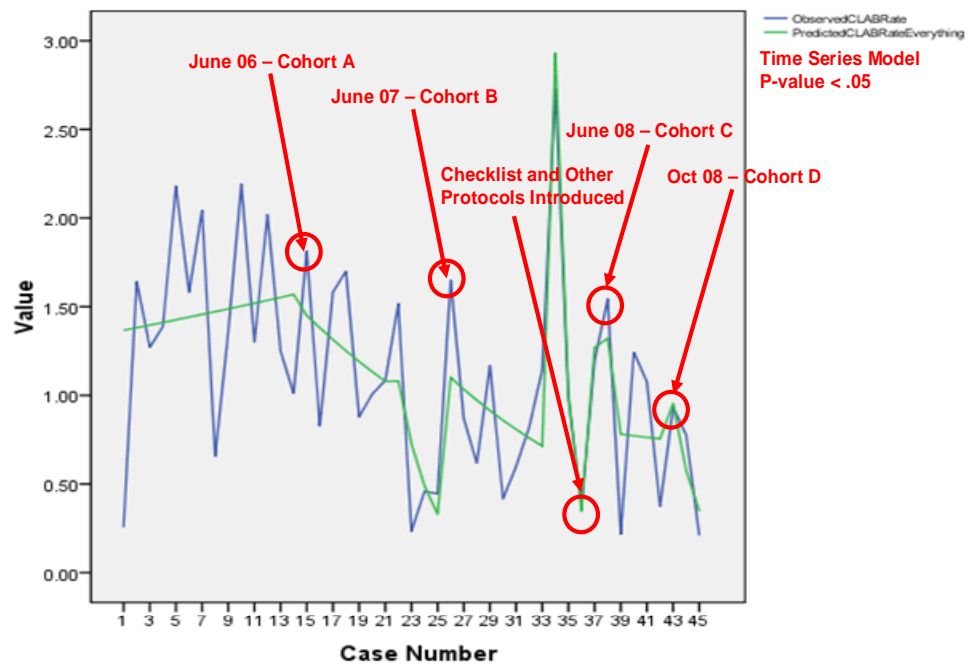
Medical Education Research

Impact Study of a Central Lines Simulation Training Program: The study objective was to evaluate the impact of central lines simulation and education training program on learner and patient outcomes. Two questions and their findings related to the study are included in this report. *Note: This is not the complete findings report from the study.*

Main Findings:

1. Time series analysis suggests that central lines simulation training and a performance support checklist during actual line placement is associated with the hospital's significant reduction in central line-associated infection (CLAB) rate since April 2005 (Figure 2) and is also associated with annualized savings of at least \$130,000, based on conservative estimates.

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



2. 71% of course taking residents were always 100% bundle compliant (i.e. new patient safety protocol) whereas only 55% of non-course taking residents were.
3. Focus groups with floors nurses and residents who took and did not take the course revealed the following themes:
 - a. Resident focus groups said they had a greater risk of breaking sterility when the nurse was not in the room because they were so focused on properly inserting the line.
 - b. Resident focus groups also said they tended to be more persistent in their number of attempts when no one else was in the room with them.
 - c. Conversely, when nurses were in the room, the procedure was frequently paused once the attempt limit was exceeded.
 - d. Nursing focus groups said that residents who take the course may be less likely to persist in their line attempts because of their interprofessional training.
4. Conclusion: This study produced evidence suggesting that the interprofessional nature of central lines simulation training for incoming residents contributes to: a) better resident adherence with patient safety protocols and b) reduces the risk of complications and infections than if the course did not exist because course design establishes expectations among residents and nurses to pause line insertion in the event of 2 unsuccessful attempts.

2011 Priority – ACGME Institutional Site Visit

Preparation

In 2006, ACGME granted LVHN with 5 years re-accreditation status (max possible at that time) with several accommodations. In 2009, “Institutional” internal review was conducted. Below is a summary of the issues identified and the progress made to date by GMEC.

Issues from Institutional Internal Review	Follow-up's	Status
1. GMEC approval of program changes prior to submission to the ACGME RRC.	Program changes a regular agenda item at GMEC	Complete
2. Improve GMEC/subcommittee effectiveness/efficiency.	Reorganization of GMEC and subcommittees via A3 process	Complete
3. ACGME Citation – Residents on call during evening hours do not have access to hot food.	Work with Soxedo and food vendor	Complete
4. Potential ACGME Citation - Ensure that communication mechanisms exist between GMEC and all program directors.	Construct and implement GME sharepoint site	Complete
5. Documentation in GMEC minutes that programs response to all proposed adverse actions.	Review and tabulate GMEC minutes for clear delineation of action plans and progress reports.	Complete
6. Faculty must evaluate and document evaluation of resident performance.	Present program compliance data quarterly at GMEC	Complete
7. Faculty evaluations of resident performance must be accessible for review by each resident.	Create and distribute instructional guidelines for residents to access evaluation summarizes.	Complete
8. Professional development of program coordinators.	Identify and offer professional development webinars/seminars.	Complete
9. Faculty have not been properly trained to deliver curriculum and assess resident performance.	Construct and communicate FY10 Faculty Development schedule (aka Teaching Leader Series)	Complete
10. Increase GME program directors involvement with USF discussions.	Regular dept-level updates; Include program directors in development of MS4 curriculum.	Complete

Areas for Improvement

Based on program re-accreditation letters, ACGME resident survey data, program internal reviews, GMEC’s annual review of effectiveness, 2011 priorities include the following:

Priority	Action Plan
1. Ensuring support for resident and faculty scholarly activities.	Task force charged by 3/1
2. Provide additional faculty training in assessment, evaluation, feedback, and use of learning technologies.	Review & expand faculty dev programming by 5/1
3. Collaborate with programs to improve any residency issues.	Complete DIO/DME meetings with residents by 6/1
4. Implement new ACGME accreditation standards.	Complete “readiness” assessment and action plan by 7/1