



UC Simulation

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Issue 4

Director

Cameron Ricks, MD

Medical Education Simulation Center



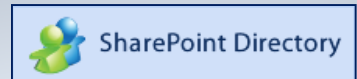
Last year was a great year, the center staff accomplished some great things. We represented the UC Health brand and School of Medicine in Lyon France as I was invited to speak about research in medical simulation. Our director of Operations was named to the Society for Simulation in Healthcare (SSH) Accreditation Committee and was chosen to be an accreditation site reviewer. The center was also

The Medical Education Simulation Center's popularity continues to be demonstrated by the enthusiastic and positive data generated from feedback. We consistently score above the 95th percentile and are considered a favorable educational experience by all learner groups

named a Karl Storz Center of Excellence.

Through our internal business modeling we managed to increase revenue by 95% over what was projected and increased productivity through adding medical student simulation courses and inter-professional team based training at UCIMC. Amidst all of this we decreased our expenses by almost \$100,000.

Dr. Suzanne Strom, Associate Director, Medical Education Simulation Center, has taken on Graduate Medical Education duties and as of 1 July has stepped down as the Associate Director. She still continues to be a faculty instructor for the SOM. We wish her well in her endeavors.



The Simulation Center has recently added a SharePoint page to keep faculty and staff informed of news and events that affects the simulation center. This will also be a repository of simulation articles and other things related.



Like Us on Facebook





UC Irvine Medical Education Simulation Center

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We originally started this newsletter as a way to showcase what the Medical Education Simulation Center is doing; however, **we want to include all medical simulation that is occurring at UCI Health.** I encourage you to submit announcements and articles to make this a UCI Simulation product and not just the Medical Education Simulation Center product.

UCI Medical Center, Building 50, Simulation Based Team Training (SBTT)

Listed are the upcoming inter-professional code training dates presented by the Medical Education Simulation Center.

September 30, 1pm-4pm • October 20, 1pm-4pm

Director of Operations--

Keith A. Beaulieu, Medical Education Simulation Center

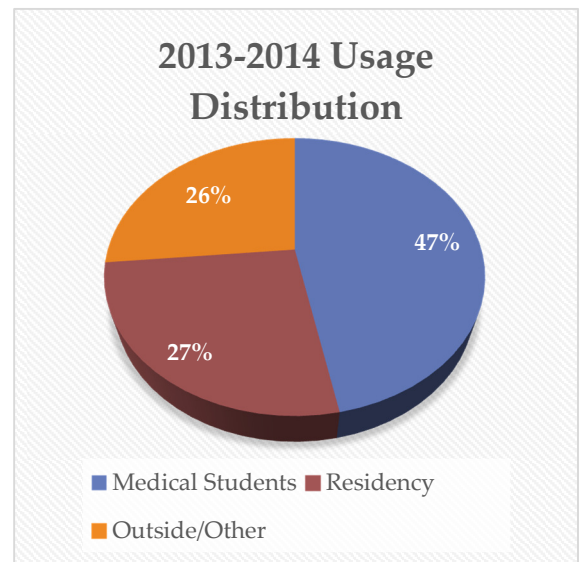


We are two months into the academic year and we are just getting started with the simulation sessions that correspond to the basic science courses (e.g. Microbiology, Biochemistry, Neuroscience, etc...). Over the summer, we opened our doors to the Pre-Med Camp, UC Extension, and Summer Surgery program with much success.

End of Academic Year Statistics

We had a very productive year overall. In terms of metrics, we had:

- **6,800 learners.**
- **10,790 learner contact hours**
- **72.167%** center occupancy (industry standard is 57%)



- **99% average on simulation specialist effort of work**

With the introduction of the Inter-professional Team Critical Incident (ITCI) Course, the estimated medical student usage distribution will jump to 60% by years end.

The full annual report is available on our SharePoint site in the statistical information tab.

Budget and Manning



The budget has been approved through the Dean's office and SOM. We are committed on providing a level of service comparable to what we have in years past. We are in continuing discussion with SOM and the Dean's office concerning the simulation center budget going forward and the services it provides. These discussions will be important strategically as Dr. Ricks and I prepare for next year's budget and the overall future sustainability of the center.

Audio/Visual

Over the July 4th weekend we had the audio upgrade that went well. It took four long days of programming and testing but the system has been updated and capabilities have been increased. We now have more reliable RevoMics, added CobraNet bandwidth increasing our audio routing capacity by 48%, ability to do an overhead

page to all areas of the Simulation Center, and have the ability to record debriefing room 1.

Curriculum

Anyone in academia will attest that curricular reform and improvements are a perpetual thing. We are no different. The School of Medicine will



be looking to change the format of the medical school in the next year or two, and has also gone to Ilios for curriculum management. The Medical Education Simulation Center has complied with and is operational with Ilios. All of the "simulation-based" courses have learning objectives and Medical Subject Headings (MeSH) terms associated. As we run through the courses, the center will add additional learning materials to the sessions as applicable. The center is also in the process of changing the format that it uses for simulation courses, sessions, and scenarios to ensure a more comprehensive medical simulation curricula approach.

Simulation Instructor Training Course

October 2 & 3

March 23 & 24

Contact our office today 949-824-8835 or go to www.medsim.uci.edu for details

Hurry, space is limited!

We do offer the following courses:

- Basic Life Support (HeartCode BLS)
- Advanced Cardiac Life Support (HeartCode ACLS)
- Pediatric Life Support (HeartCode PALS)
- Curriculum Development Course
- Simulation Operations, Planning, and Management (SOPM) Course
- Simulation Programming Course
- Maintenance of Certification in Anesthesia (MOCA)
- Simulation Instructor Training course

Inter-Professional Team Critical Incident (ITCI) Training

On August 12 & 14, The Medical Education Simulation Center started the ITCI course as part of the Clinical Foundations curriculum for the 2nd year medical students. The first year medical students will start this course in November.

ITCI is a hybrid educational modality designed for BLS and ACLS education for first and second year medical students and third and fourth years nursing students. Educational modalities will primarily be based on simulation but will also include large didactic settings, and asynchronous learning to include online pre reading and videos that will precede the simulation sessions.

The simulation sessions will total 4 per year for both the first and second years of medical school and third and fourth years nursing and each session will last 2 hours. Every session is designed to incorporate the inter-professional team dynamics concept. The scenarios are designed to build on top of each other as the learner's progress through the curriculum.



MS1 and NS3 ITCI Schedule

November 18-20
February 2 & 4
April 28 & 30
May 18 & 20

MS2 and NS 4 ITCI Schedule

August 12 & 14
October 28 & 30
January 5 & 7
February 23 & 25

ROI and Sustainability in Healthcare Simulation

By: H. Michael Young

Healthcare Simulation (HSim) is in its adolescence. It is a time where questions are being asked. HSim is trying to find its identity. Only now are some of the toughest questions being formed, with little results in the way of answers. Don't misunderstand, HSim already has great depth to it, but it is growing faster than it can assimilate the values and techniques it needs to reach "adulthood." HSim is competitive, trying to make its impact on the world, with each of its members struggling to balance time with

objectives. Consequently, it is an exciting time to be involved in healthcare simulation.

An ongoing discussion in the simulation community is the meaning of "Return on Investment" or "ROI," and how does a simulation program achieve a return on its incredible investment? There is no question that the various simulation technologies available on the market are typically very expensive. Industry has responded to the need for these technologies by manufacturing marvels of innovation and design. Manikins are blinking, jerking, talking, urinating, coughing and so forth. They are amazing and *extremely* expensive. The expertise required for these technologies are coming from industry, academia and clinical practice. Maintaining a

simulation program requires qualified educators and staff (both clinical and technical) to implement the use of these technologies in the appropriate space provided. All of these factors represent a huge investment.

In a business, ROI is easy enough to calculate. The business spends a certain amount of money for a project or product/services, and then sells it resulting in profit. The monetary difference between the investment and the profit is the ROI. In healthcare simulation, the ultimate ROI is improved *patient safety and outcomes*. Can this be measured in dollars? The answer to the question will depend on the one who is doing the investing. For example, if it is a nursing education program nested in a university setting, the connection between simulation encounters and patient outcomes is not easily made, although there are some attempting to make this connection through additional research. In fact, universities and their various colleges and departments measure ROI in different ways, depending on the source and expectations of the investment.

For some, the return might be an adequate number of student/scenario/case encounters, and improved utilization of space (labs/rooms) and other resources. Profit is not necessarily the objective. Academia deals more with the question: "what value does this simulation program bring to the university, to the nursing department, to the faculty and staff that utilize it?" For some administrators, simulators and facilities (the investment) is a showcase to attract new students—thus many tours of prospective students. So the return of building a simulation space, filling it with high-end technologies could be increased enrollment into the university or program. So, the investment yields more students, which represent income from tuition and fees



collected from each student. The problem with using this as a metric for ROI is that a nursing department, for example, is not necessarily the direct beneficiary of increased students' tuition and fees, as these will likely be dispersed throughout the university and invested as determined by administration. Realistically, this might only be one way to measure ROI, so it would be simplistic to say that this would be the only metric(s).

In a hospital education setting, the ROI can indeed be correlated against data collected about patient outcomes, when specific skills, communication protocols, and such are practiced, and at some level connected to overall patient outcomes. For a hospital, this still converts to money saved, thus profit. So, for the administrator, the ROI is indeed measured by patient outcomes. Liability is reduced, and thus potential litigation is reduced, which reduces the cost of "doing business." A win-win solution.

In the simulation community, another word that is often confused with ROI is "sustainability." As suggested by its meaning, it refers to the ability of a simulation program to financially sustain itself through the maintenance of its simulators, space, equipment, and a budget that considers the cost of running a simulation program, including its faculty and staff. A program becomes *sustainable* when *its costs do not exceed its financial resources*. For some, sustainability is achieved through ROI, where the return is reinvested into the simulation program in order to cover its operating costs. However, sustainability is extremely difficult to achieve through ROI. It requires parties/participants willing to pay for the services and access to the facilities and equipment. Larger simulation

centers that are connected to multiple partners might realize a ROI of their own, where it is cheaper to contract for simulation facilities and experts than it is to build and maintain their own.

Many simulation programs have tried to get ROI through partnerships, but are simply in a region that doesn't have enough willing partners to invest outside their own program. There are more reasons for this, but readers of this post, may want to comment on their own experiences. The point is, *ROI* and *sustainability* **can** be the same thing, *but* in reality most programs do not see the return represented by income. Instead, the return is far less concrete. Many programs see that returns are measured in VoR, or *Value of Return*. What does the simulation program get out of their investment of hundreds of thousands, if not millions of dollars, if money isn't going to flow back into the program? Keep in mind, money does flow in an academic program every time a student enrolls because of a simulation program's quality. In a hospital program, the flow of money comes, as already states, through reduced costs and improved patient outcomes. However, ROI is based on assumptions about *what used to be* and *what could have been*. Statistics support their assumptions about the return on their investment.

Now some who may be reading this right now may be objecting to the whole concept of ROI as it applies to a fiscal return. This is understandable. Ultimately, improved patient care and outcomes should be the primary motivator. Whether a simulation program is within an academic institution, or in a hospital, everyone would like to claim this lofty goal. However, in a capitalistic society whose economy only flourishes through the exchange of products and services and ultimately, the exchange of currency, we all have a lot to learn from business. In academia, executives are crunching the numbers to ensure that the university as a whole is sustainable. They work to answer the question

"are we gaining more capital than it is costing us?" Otherwise, known as "return on investment." Hospital administrators employ the expertise of financial experts to determine if the hospital can remain solvent, or is *sustainable*. Again, sustainability can only be achieved through some kind of ROI somewhere in the organization.

Sustainability does not always have to be profitable in the traditional sense. There are other ways to achieve sustainability: grants/awards, participant fees, combining faculty/staff roles, and of course, a departmental budget, etc. In academia, developing and implementing a budget provided by the university system is probably the best way to manage the financial overhead of running a simulation center. Grants, gifts, and awards can help get a program going, or refresh simulators that are no longer meeting program objectives, but simulation center administrators would do well to become active in the budget approval process. What is the primary benefit of a simulation program to a university? Improved patient outcomes sounds nice, if not admirable, however, academic institution leadership want justification for the cost, which is a far easier case to make than ROI as a method of sustainability. If an increased budget is needed, justify it by showing how the program's current facilities and resources have been used. How many students are utilizing the program? Turn research skills into a rationale for greater investment from the parent institution. Consider metrics for your research and data gathering initiatives that highlight tangible, measurable outcomes that non-clinical administrators can understand.

- Number of students using facilities (enrollment in program) [quantitative research]
- Number of encounters (student/time/space) [quantitative research]

- Room usage statistics [mixed methods research]
- Faculty/staff hours (ET, [employee time]) to encounters and/or students/learners/participants (E, [encounters]) or an ET:E Ratio [quantitative research]
- Types of encounters: scenarios/cases/multiple participant sessions [mixed methods]
- Number of students who have enrolled in the program that have cited its simulation program as the incentive [qualitative research]
- Improved skills resulting from simulation participation (assessment/evaluation over time) [qualitative research]
- Reduction in student/learner/participant errors in clinical assignments [mixed methods]
- Improved access/participation to cases/scenarios not prevalent in hospital rounds compared to number of hospital slots for clinical rounds that have decreased over time. [mixed methods]
- Measure reputation of program with hospitals who recruit former students, level of satisfaction of recruits compared to recruits from other programs. [qualitative research]
- Improved employment opportunities of graduates. [mixed methods]
- Etc...

The kinds of things that can be measured (metrics) are many, and each can become the rationale for institutional budget decisions. A hospital-based simulation program has a much greater challenge, as ultimately it is improved services that reduce errors and thus cost. It is surprising how many hospitals are still dragging their feet from investing in new simulators/space and training for their educators and staff. The burden of making a case for the budget lies with

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Upcoming Events



September 1

LABOR DAY
Center Closed

September 2

MS 2 Microbiology Sim

September 4

MS 2 Microbiology Sim

September 3 – 25

Clinical Foundations 1

September 23

UC Simulation Committee Meeting
1pm - 3pm, Grunigan Medical Library (GML)
1st floor

September 30

Inter-professional Simulation Based Team
Training, Building 50, 1pm – 4pm

October 2 – 3

Simulation Instructor Training Course
Contact us for details and fees

October 7

MS 1 Biochemistry

October 9

MS 1 Biochemistry

October 20

Inter-professional Simulation Based Team
Training, Building 50, 1pm – 4pm

October 21

MS 2 Cardiovascular Physio

October 23

MS 2 Cardiovascular Physio

October 27

Maintenance of Certification in Anesthesia
(MOCA)

the program leadership. Justify investment by metrics that are important to the administration. The competition for funds in both academic and hospital-based programs are huge. Program leadership need to "take the bull by the horns" to ensure program effectiveness.

The subject of *ROI* and *sustainability* still requires more discussion as a whole. "If you have seen one simulation program, you have seen one simulation program." The old adage "if you have seen one, you have seen them all" simply doesn't apply. As stated, healthcare simulation is in its adolescence. There is rebellion (differing opinions) and there is a great struggle to find its own identity, regardless of the setting(s) in which it resides.

Personally, this writer hopes that it never reaches adulthood. With maturity, the *new* loses its value, and learning has devolved to principles and policies instead of what could be. Simulation should always be a foundation in which new questions and new answers can be tested, found, challenged and changed. Experts in this domain already know that there is still a lot more to know.

H. Michael Young is the Director of Healthcare Education & Business Development at Level 3 Healthcare
<http://www.hmichaelyoung.com>

We would like to welcome the Simulation Fellows for 2014-2015

Dr. Julie Sayegh, Emergency Medicine

Dr. Ann Beissel, Pediatric Anesthesiology.
Lyon, France

If your organization has a simulation related story you wish to share in this newsletter, please contact Keith Beaulieu, kbeaulie@uci.edu.

Did you Know?

- The Medical Education Simulation Center falls under Medical Education and is subject to campus sales and services and other miscellaneous fees to the tune of 27% of all generated income.
- Each simulation session takes a minimum of a half hour to set up and a half hour to clean up
- We have had organizations from the United States, Europe, Mideast, and Asia contact us regarding simulation training.

Donate to the Medical Education Simulation Center Education and Support Fund

Help us provide world class medical education that embodies

Discover • Teach • Heal

<https://ua-web.uadv.uci.edu/eGiving/>