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Governor



Governor's Healthcare Workforce Initiative
State of Oregon
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Proposal for the Demonstration Project Funds

A coordinating group comprised of statewide coalitions of healthcare institutions and educational programs seeks funding to develop or expand the simulation capacity in all regions of the state for multi-sector, multidisciplinary and interdisciplinary use for healthcare workforce development, including pre- and post-service, career ladder, and re-entry/refresher programs. We wish to ensure that the simulation capacity is integrated into healthcare curricula, utilized by well-prepared and networked faculty, available over the state's broad-band Internet network, accessible 24/7, and affordable for all education and service groups in the state.

Request

- \$300,000 from the Department of Labor for purchase of 7 "Sim Man" simulators as recommended by a coordinating group established by the Governor's Healthcare Initiative Coordinator.

Additional *matching* funds are being requested from the State's Employer Workforce Training Fund for the following uses:

- \$200,000 To purchase and distribute 5 "Sim Man" simulators as recommended by the coordinating group;
- \$250,000 Working with all stakeholder groups, to provide training of trainers and curriculum sharing around the state in the 12 locations to which simulators are provided.

Background

The state is facing a critical shortage of healthcare workers and many challenges to overcoming the shortage. This shortage threatens our ability to attract and retain companies and, therefore, our economic recovery. Numerous efforts by hospitals, health organizations, universities, community colleges, and workforce training programs are underway to address the shortages, but the state lacks a coordinated response to integrate the disparate efforts.

History of Healthcare Workforce Initiative

In August 2003 the Governor initiated his Healthcare Workforce Initiative and appointed a Coordinator to work with the Governor's Office of Education and

Workforce Policy to direct and begin implementation of a coordinated statewide response to healthcare workforce issues. The Coordinator was asked to assess current workforce education efforts in healthcare, prioritize and implement recommendations from the legislative and prior governor's task forces, and assist with the development of policy for the Governor's Healthcare Initiative.

The Coordinator consulted widely with healthcare providers, labor, education and training groups around the state. In addition, she formed an alliance of healthcare education and provider organizations to serve as an advisory and oversight committee to assist her. The group is proposing an implementation plan for the Initiative that addresses strategies the Governor, the Legislature, the Federal delegation, and the Oregon Workforce Investment Board can adopt to dramatically increase the quantity and quality of healthcare workers in the state.

Proposal

As an initial step, the group proposes that the state seek funding to assist collaborations around the state to address the shortage of clinical facilities and faculty, utilizing simulation and telecommunications for distributed education around the state. The network of networks would develop shared curricula and simulation scenarios, provide for the trainer of trainers around the state, and equip each region with simulation and telecommunications capacity that is affordable and available to all sectors and healthcare disciplines in the region on a 24 hour, 7 days per week basis.

The full implementation plan includes additional strategies for action by the Governor, the Legislature, the Federal delegation, and the Oregon Workforce Investment Board. These include:

- Increasing the health system's simulation capacity, using simulation mannequins and virtual reality software, in all regions of the state for multi-sector, multidisciplinary use for healthcare workforce development, including both pre- and post-service, reentry and refresher, and career ladder programs;
- Ensuring that the existing telecommunications capacity around the state is operational, accessible, and affordable for use 24/7 by all healthcare and education organizations around the state;
- Increasing the number of healthcare faculty;
- Encouraging regulatory flexibility and shared use of facilities and equipment;

- Ensuring the articulation of health pre-requisite courses among public and private colleges and universities.

All actions will be taken in collaboration with existing groups and organizations working to increase the healthcare workforce capacity. "Multi-sector" is intended to include community colleges, universities, high schools, and healthcare organizations.

Some of these goals will be achieved through legislative and advocacy efforts. Others, such as this proposal to increase the simulation capacity in the state, will require private, state and federal funding sources. This project proposal is an initial step and will be followed by a larger proposal to the federal government.

The Success of Simulation as a Learning Tool

Simulation is an educational methodology designed to provide learning exercises that closely mimic real life practical situations. It has been widely used in aviation and in the military as a training tool. Simulation was introduced into healthcare 15 years ago but was very expensive both for equipment, at over \$150,000 per simulator, and for specially trained personnel to run simulation, The market place has now seen a substantial drop in the price (now ranging from \$28,000-\$40,000 per simulator) of simulation equipment.

It is important to note that simulation is more than a high tech (high fidelity) mannequin. It also includes low tech but high fidelity standardized patients or actors that portray patients, skill/task trainers (e.g., IV insertion practice arms), virtual reality trainers, computer-based simulators with real time and real underlying physiology, and lower fidelity mannequins that are less expensive for less complex training situations. Simulation allows schools and health systems to provide training that is not reliably available or not safe for beginning practitioners. This technology will allow health care programs to expand capacity safely and efficiently through predictable, reproducible experience-based learning.

A recent preliminary assessment of current capacity and future need was completed by The Oregon Center for Nursing (OCN). The report focused on Nursing Technology and was designed to assess simulation and distance technology in the 24 nursing programs in the region. This report was an important first step in determining the need for simulation equipment technology in nursing programs. Deborah Burton PhD, RN and Loretta Krautshaid RN, MS reported in this assessment report that three sites have access to SimMan®, a high fidelity, real-time interactive human patient simulator made by Laerdal Medical Corporation®. They also described that fifteen of the 24 programs indicate that human patient simulators are essential "...for preparing students with the required technical, interpersonal,

psychomotor and interdisciplinary teamwork skills..." necessary to successfully perform in today's complex health care environments. In addition, eleven of the 24 programs were reported to have limited access to live-patient clinical situations necessary for the education of nursing students.

The preliminary report describes the capital expenses needed for expanding simulation capacity in nursing. However, simulation also requires expert trainers who can link simulation experiences with training goals and who can develop realistic situations. The study does not address allied health, medical students or graduate medical education nor does it include the investment in training faculty in its use.

Oregon is fortunate to have access to considerable in-state cutting-edge simulation expertise. The goal in Oregon is to develop a comprehensive network of simulation expertise and programs that are accessible and affordable. The plan will vigorously maintain regional diversity and needs. This level of collaboration will be a national first and will serve as a national model.

Collaboration

The Oregon Consortium for Nursing Education (OCNE) has already proven that this degree of consensus is both possible and feasible. The OCNE, a coalition of community college and private and public university schools of nursing, has been formed in response to the critical nursing shortage. Through a redesigned, more efficient nursing education system, the OCNE will be able to significantly increase enrollment without a corresponding increase in cost.

Initial investment in curriculum development, faculty training and simulation labs is essential. OCNE has been successful in securing grant funds to support curriculum development and some faculty development.

The goals of increasing enrollment and improved training for health professionals will not be met without substantial investment in simulation.

A statewide OCNE simulation committee was formed in May 2003 and is charged with coordinating the establishment of a statewide network of nursing simulation education programs and facilities. OCNE simulation committee members are currently collaborating with the Governor's Initiative to assure a coordinated approach to the expansion of simulation and the development of faculty. The member programs of the OCNE recognize the importance of simulation in the majority of healthcare disciplines. The simulation sub committee has offered to expand plans for education, assessment, and business planning and faculty development to include health systems and allied health programs statewide as federal or grant funds are available to do so.

The Governor's Initiative represents a wide range of parties interested in the expansion of simulation. They include the Oregon Center for Nursing, the Oregon Consortium for Nursing Education, the Oregon Health Careers Center, and the Community College Healthcare Action Plan. Participation has also been extended to the Oregon Association of Hospitals and Health Systems, Area Health Education Councils, and the Northwest Health Foundation to assure a broader representation in the statewide planning process.

Dr Michael Seropian, a practicing anesthesiologist and faculty member for the OHSU Schools of Medicine and Nursing, has over ten years of experience in simulation education development and training. He has developed two simulation facilities and is the Chair of the Oregon Consortium for Nursing Education Simulation sub-committee. He is the Director of the OHSU Simulation and Clinical Learning Center, and reports that countless inquiries have been received by the OHSU Simulation Center, requesting consultation on simulation program development. These requests have been from health systems, community colleges, professional and specialty organizations in nursing medicine and allied health fields in the Northwest and across the nation. It is clear to Dr. Seropian that this technology is in high demand, and that the success of its appropriate expansion is dependent upon funding that facilitates the design of a systematic statewide deployment plan. Most health systems and educational institutions rightfully view this methodology as a as one of the primary tools to facilitate expanded capacity to teach, experiences that anchor skills that need to be demonstrated, and the optimal use of scarce faculty resources.

The success of expanding access and capacity for simulation in educational programs and health care systems is dependent on many factors: (1) assessment of capacity, need and readiness for simulation; (2) expertise to guide the development of simulation programs, education and training about when and how to use simulation; (3) expertise to operate simulators as well as to integrate simulation into curricula; (4) exploration and coordination of partnerships among community educational and healthcare systems. This coordination can be accomplished through guided shared community visioning and mutual business planning efforts.

Logistics and Scalability

The logistics of this project are ambitious and yet quite doable. The intent is to include most, if not all, healthcare venues in the state. The project hinges on the concept that simulation programs can develop in parallel by using a common development timeline and process. This strategy is unique to Oregon. Each program will be assessed for readiness and their stage of simulation education development. This will aid in placing programs on their respective timelines. Programs will have access to the necessary expertise to develop faculty, train simulation specialists, purchase necessary equipment, and construct flexible simulation facilities.

This plan recognizes that simply buying a simulation unit does not meet the requirements for an effective program. The state will see the growth and collaboration of simulation specialists from multiple disciplines across programs. These specialists will aid faculty in the integration of simulation in new and progressive curricula. Programs that are more developed, and who have developed expertise, will have the opportunity and expectation to aid programs in their earlier stages. This plan will remarkably establish a statewide network of shared simulation expertise, and give both urban and rural programs access to one of the most significant healthcare education advancements in decades.

Recently the Northwest Health Foundation (NWHF) has invited several simulation experts in Oregon to further refine statewide assessment data on capacity and future need to include allied health, health systems and medical students. This more comprehensive data will drive the decision-making process for statewide investments in the growth of simulation capacity. This is an important milestone and initial step. In addition, they are working with other grant makers to educate foundations and communities about the need for simulation. Many schools are seeking funding from a variety of grant makers for core and collateral investments of capital. OHSU has submitted a grant request to the Fund for the Improvement of Postsecondary Education to conduct expanded assessment, assist with business planning and to provide some of the essential faculty training necessary to utilize simulation.

The following is a summary of the need and advantages of expanding simulation.

Need

- Current clinical sites do not have the capacity necessary to continue the same model of education and at the same time as increasing enrollment.
- Increasingly high acuity of patient situations reduces the requirements for student access to learning with live patients.
- There is a growing regulatory emphasis on the health care systems to evaluate initial and ongoing competency of their practitioners; simulation provides another method to do so for complex and emergent situations.
- Clinical agencies are challenged to provide enough mentors in the practice setting to meet the needs for live-patient experience; simulation reduces this burden.
- Interest in simulation is on the rise in Oregon and the rest of the country.
- OHSU's Simulation Center has responded to over thirty-five requests for information, consultation and /or observational experiences in the last six months.
- Oregon Nursing Leadership Council has identified simulation as a way to expand capacity for nursing to ease the nursing shortage. In addition, there are critical shortages in other healthcare fields that simulation could benefit.

- The OCN conducted an assessment of Oregon schools of nursing that clearly describes an expanding requirement for simulation technologies.
- We know from experience in other industries that simulation works. Healthcare simulation builds on the experience of the aviation industry where pilots are required to practice in simulators before actually flying. The military complex has long recognized and used simulation for wartime training.
- Simulation in healthcare systems and education is increasing. Laerdal Medical Corporation has over 1500 high fidelity simulators worldwide. Market analysis projects an annual increase of 25% annually.
- In November 2003, in consultation with OHSU, the Community College of Denver's Nursing Program pilot request to use simulation in place of 128 of 789 required clinical hours was approved by their State Board of Nursing.

Advantages

- Partnering with allied health programs and health systems will result in more interdisciplinary team training that is more proximate to what occurs in practice settings.
- Elements of a successful statewide system for simulation include: faculty development, equipment assessment and acquisition, space planning, business planning, systems for sharing best practices and scenario development, curriculum development and community visioning and partnering.
- Statewide faculty development to build simulation expertise will occur more efficiently and effectively if coordinated statewide.
- As an example, the OHSU School of Nursing has doubled enrollment without doubling faculty by reducing live clinical experience and increasing clinical rounds and simulation experiences.
- Students using a simulator can see the consequences of their mistakes without hurting a patient. They can practice techniques in a variety of procedures and react to a variety of physiologic states.
- Students can develop confidence with simulator directed skills before moving on to a live patient situation.
- Simulation allows students to develop assessment, psychomotor, clinical decision-making, teamwork, and communication skills.
- Simulation laboratories provide a wide range of educational tools that build upon one another and culminate in the integrated high fidelity simulations.
- Simulation labs include models, task trainers, actors in role plays and simulated scenarios, high and low tech simulator mannequins, computer based simulators and video-based debriefings.
- Simulations allow practice situations that do not spontaneously arise in live-patient clinical settings, making training more predictable across settings statewide.
- Simulation assures that the needed competencies are met via simulation when they are neither met nor available with live-patients.
- Simulation provides students the opportunity to learn by experience in a more predictable, controlled way without risk to vulnerable patients.

- Simulation can be effectively included as clinical hours to meet regulatory requirements.

Simulation Sites

The coordinating group mentioned above listed all of the current simulation proposals/programs around the state (that we are aware of) and is working to coordinate/consolidate and maximize existing resources and best teaching practices.

- OHSU
- Easter Oregon University (with OHSU)
- Blue Mountain Community College
- Mt. Hood Community College
- Rogue Valley consortium
- Treasure Valley Community College
- Klamath Basin consortium
- Umpqua consortium (with SOU)
- Linfield College
- Central Oregon Community College/OSU Cascades/Central Oregon AHEC
- Clatsop consortium
- Southwestern Oregon Community College consortium
- Portland Community College
- Clackamas Community College
- Columbia Gorge Community College

Strong collaborations between all the state's community colleges and the state's department of Community Colleges and Workforce Development are a critical part of this project, in studying the needs, participating in this effort and helping to develop coordinated curriculum and training of trainers throughout the state.

Coordination and Oversight of Initiative and Funds

The coordinating group recommends the following underlying principles and framework for the management/coordination of a statewide system of simulation resources for healthcare education. The group considered such factors as:

- Characteristics and essential elements of a statewide system of simulation resources;
- Various funding interests and stakeholders;
- Differences in the nature of the local and statewide focus in development and implementation;
- Potential for involvement of SW Washington;
- Leverage and incentives for involvement of various parties; and
- Ways to build the system within a climate of partnership and trust.

The group developed the following principles for management/coordination: Strong consensus was reached that optimizing local control is an underlying principle of the system. Only those elements that are essential to accountability and quality for a coordinated system would be considered as requirements for local partners. Ideally, local partners would have mutual agreement on those elements, and any sense of state level control would be non-existent. However, the group agreed that some basic requirements would be needed to identify who are the local groups, especially related to resource decisions.

The group proposed the following characteristics of local groups for inclusion in the statewide network. It was agreed that "local" would be defined locally, i.e. the extent of geographic area covered, what participants would be included, etc. Each local group would identify an accountable entity (new or established) to assume responsibility for management/policy issues. A "user group" would be operationalized in each local area to provide for sharing, evaluation, and problem-solving input in establishment and maintenance of the simulation resource. A community-wide advisory group (including but not limited to users) is strongly encouraged. Attention would be given to the local vision/mission, e.g. fiscal matters (how will funding be obtained), collaboration/partnerships (who will be involved), faculty and faculty development (who will provide the teaching), and the desired local delivery model (a facility, "sim-man on wheels," etc).

A business plan, necessary policies and procedures, and minimum standards will be in place to show readiness of the local to effectively participate in simulation educational delivery. The local group would participate in the statewide system through some form of representation.

The following characteristics of the statewide network are proposed. The purpose of the statewide activity would be coordination, not control. The entity responsible for statewide coordination would be 1) advisory to the Governor's Office for policy direction, 2) advisory to the local groups for technical and organizational assistance, 3) responsible for quality monitoring, data collection and outcomes measurement, and 4) brokers for group price advantages in development and maintenance of the system.

The current coordinating group to the Governor's Healthcare Initiative, with expanded membership, would be asked to assume initial responsibility for contracting with an existing entity for the statewide responsibility. In the interest of avoiding creation of a new structure for the coordination purpose, the sub-group proposes issuing an RFP to explore the interest of existing public or private entities in taking on the coordination function.

Statewide Simulation Alliance Outcome Measures

The Governor's Healthcare Initiative Coordinator and the coordinating group will monitor and report on the use of the simulators and training funds to ensure that they increase the capacity for pre- and post-service training of healthcare workers and trainers around the state, utilizing the following outcome measures.

Increase the capacity of educational programs.

- Program enrollment numbers by college and university programs and quality of applicants;
- Ratio of instruction in clinical sites and number of hours of instruction in simulation laboratories.

Increase access to simulation-based education in academic, continuing education and in-service education programs.

- Number of programs utilizing simulation as an educational tool;
- Number of disciplines utilizing simulation;
- Number of hours of simulation based education.

Increase in expertise in simulation statewide.

- Number of simulation specialists initially trained;
- Number of advanced, independent simulation specialists capable of training other specialists;
- Number of simulations designed by program area, by discipline in education and in the workforce by region;
- Number of simulation specialist education sessions annually;
- Number of simulation specialist meetings annually;
- Survey of programs to determine steps taken to develop, maintain, improve simulation systems and programs.

Satisfaction with simulation as an educational tool to increase capacity and quality of educational programs.

- Simulation satisfaction survey of programs, faculty and learners, assessing confidence and skill acquisition.

Summary

It is our hope that this document is successful in demonstrating the need, advantages and approach to simulation education program development in Oregon. The state is fortunate to have existing expertise that is not only knowledgeable, but also willing to participate in this collaborative effort. The efforts of OHSU, the OCN, and the Governor's Healthcare initiative, the Oregon Health Career Center, the Community College Healthcare Action Plan and the OCNE have all shown tremendous leadership in innovation to meet healthcare demand, and in the pursuit of improved patient care and safety. Simulation education is an essential component of future healthcare education. Beyond

this, simulation will be the cornerstone for preparedness against potential health disasters that sadly currently face us. Oregon will be in the enviable position of having a network with the interdisciplinary capacity to meet this enormous challenge. The aim is to ultimately produce and maintain a better prepared, more confident and experienced healthcare provider.

Please support the request for training dollars to expand simulation technology in healthcare education programs and health care systems in a statewide coordinated effort.

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