SYNOPSIS OF SIMULATION SITE VISITS

In response to the identified need to address the critical nursing shortage in our state, the Florida Center for Nursing (Center) sought funding to conduct a two-year project examining the use of simulation technology in the education of new and current Florida nurses. The underlying assumptions are that simulation technology 1) can supplant the clinical capacity bottleneck restricting expansion of nurse education programs and 2) is a tool to be implemented in improving the retention of Florida's current nurse workforce. Year One of the project has focused on information gathering and analysis. Year Two will be dedicated to formulating recommendations, identifying actions, and influencing policy to achieve the adopted goal/s.

To enhance understanding of existing simulation centers and programs, members of the Project Team and the Advisory Panel visited four national simulation programs and six simulation centers located within Florida. Observations were made and information gathered from contacts at each site to identify practices, issues, and trends that merit further development or ought to be avoided as recommendations are considered for implementation in our state. The simulation site visit schedule is provided in Appendix A. Summary reports for the national programs and the state centers are located in Appendices B and C respectively. The state centers visited represented those based in academic settings, located in hospitals, and joint-use facilities. Two of the four national programs represented statewide coalitions which are discussed separately.

SIMULATION CENTERS

Current Uses

The academic-based simulation centers were primarily used for entry level registered nurse (RN) students in clinical courses including pediatrics, obstetrics, and medical-surgical nursing. When present, graduate nurse programs used the sites and completed some scenarios jointly with the RN students. Most centers were designed to represent hospital environments and two provided simulated home care settings. When centers were used by community service groups the most common were emergency medical technicians and fire fighters.

Centers in the hospital settings were most often used to teach basic and advanced life support, supplement new graduate and new employee orientation, address issues of patient safety and risk management, as well as train staff on new equipment and procedures. Categories of staff using the centers included nursing, physician, and first responders.

Most centers identified the need to market simulation to a broader audience and more diverse health professional groups. Many had or planned to develop multi-disciplinary scenarios. Use of purchased scenarios was common though seen as limited in application to individual curricula. Many centers found the effort to modify purchased scenarios undesirable and opted to create their own.

The use of simulation to facilitate the transition of new graduate nurses from school to work, and of experienced nurses from one area of practice to another, was in place or planned to be implemented by all centers. The challenges faced in the increasingly complex health industry and to address an aging nurse workforce provide prime opportunities.

Center Staff

Centers overseen by nursing schools or departments tended to be staffed by nurse faculty while those that were independent tended to be staffed by technicians or those with an allied health background. Most used student assistants or technical support staff members that were not formally trained in care and maintenance of the equipment. While in some cases nurse faculty staffed the center and ran the scenarios, in others nurse faculty were clinical and knowledge resources to a technician running the center and equipment.

Funding

Centers based within a hospital were funded within the greater operating budget, often within the quality management or education department. Those based in academic settings tended to rely on student fees, grants, donations, and faculty workload to maintain their operations. Very few have a fee structure in place to cover costs or generate income. All are concerned about sustainability given the high expense of equipment purchase and maintenance.

Desired State Resources / Needs

There was unanimous interest in the establishment of a state level network, coalition, or users group. Center staff members are interested in sharing information and ideas as well as learning from others. There is an identified need for a resource library, scenario sharing system, and access to advanced training for those operating the simulation equipment. All participants were interested in developing research alliances as the need for outcome evaluation is great and could contribute to development of sustainability plans.

There is also a need for technical support. Most centers are dependent on simulation industry representatives for technical support which is very expensive and frequently requires that mannequins be shipped to the manufacturer resulting in loss of use for extended periods. Finally, many center staff raised the need for standardized practices and policies which could be accomplished through a statewide coalition conferring with national groups and industry.

Clinical Time / Space Offset

When asked if the use of simulation in pre-licensure nursing education resulted in the ability to expand capacity, the majority response was negative. In select cases where the majority of simulation use was focused on a single clinical course such as obstetrics, there was an ability to schedule more students to the in-patient clinical site. However, when only a smaller portion of the clinical component of a medical-surgical course is met through simulation, it is not realistic to assign a second clinical group to the hospital unit. The consensus is that more needs to be done to meet this desired outcome including improved coordination of student groups from multiple schools in a single health care setting.

Miscellaneous

Though not a part of the planned interview, thus not asked on each site visit, the use of standardized patients was often discussed. Most often faculty and staff served in this capacity as a cost-savings measure. There was general agreement on the value of standardized patients to provide students a complete experience not met with virtual or mannequin simulation.

With minimal exception, there was an absence of interest in sharing equipment or using a regional laboratory setting. Most opposed to the idea cited the need for close geographic proximity and control over the care and maintenance of equipment as overriding issues. There was interest in sharing technical resources (people) and scenarios, but not equipment. Hospital settings were the most likely to 'travel' with the equipment taking the mannequins to the staff all days and hours of the week.

STATEWIDE COALITIONS

Oregon Simulation Alliance

Funded through the Oregon Governor's Office the Oregon Simulation Alliance (OSA) is an interdisciplinary effort to promote simulation through collaboration and partnerships. The idea of the alliance arose out of the common nurse curriculum effort but is not limited to Oregon Consortium for Nursing Education (OCNE) members. Simulation technology is viewed as a potential asset that is expensive to acquire and maintain. From the original $2.1M in funding, thirty $50,000 grants were distributed to "partnerships" of academic and/or health industry representatives who submitted accepted business plans. Most grants purchased equipment with the intent of shared use. The only simulation equipment purchased and managed by the OSA is at the Oregon Health and Science University (OHSU) Simulation Center.

As funding was depleted, the OSA separated from the Governor's Alliance and was established as a 501c3 funded through grants and housed at the OHSU. OSA membership is comprised of OHSU, 8 partners of OCNE and 8 community partners including colleges and health industry settings. Primary participants in the OSA are hospital based staff educators and nursing and allied health faculty. Of the original 30 partnerships funded only 2 are believed to continue to be active. Others may continue to collaborate but not related to the originally funded business plan. Most have purchased their own simulation equipment and/or established a simulation center.

Some contacts expressed the perception that OSA is more directed to meeting the needs of OHSU and/or OCNE – a possible natural progression as the funding source changed. The only current active sharing of scenarios, etc takes place through the OCNE website and, thus, is limited to OCNE members.

California Simulation Alliance

The California Simulation Alliance (CSA) is a voice for simulation in nursing education, disseminates information to stakeholders, and facilitates state funding for simulation use and expansion. Its core focus is building education capacity. Developed as a doctoral nursing project, it is sustained through donations, consultation and training fees, and membership dues.

Initially designed to open shared use centers to provide clinical education and build California's education capacity. Focus has been on faculty development, scenario development, and research / evaluation efforts. To compliment these areas there were four committees established as part of the CSA structure: research; scholarly writing; scenario development; and technology.

There are six regional collaborations within the CSA in various stages of development. Three are funded and fairly well established and three are grassroots efforts. The model is intended to recognize the principles that apply across the state yet acknowledge differences in regional culture in a large state such as California. The viability of equipped and staffed, shared use simulation centers must be considered based on each region's existing resources, needs, and funding sources.

DISCUSSION AND RECOMMENDATIONS

In considering the information reported above, we must return to the genesis of this project. One of the underlying assumptions was – can simulation technology supplant the clinical capacity bottleneck? The results are inconclusive. Though, clinical learning can be improved with simulation and a percentage of clinical hours replaced, the magic mix has not been found that, in fact, results in increased numbers of student admissions. The other assumption – that simulation is a tool to be implemented in improving the retention of Florida's current nurse workforce. Anecdotally this assumption is supported. New nurse response to the inclusion of simulation in the orientation is positive. Additionally, student and nurse graduate comfort level with procedures is increased following simulated practice. However, older nurses are less likely to be receptive to the use of this new technology without evidence of its value. Therefore, the following recommendations are offered for consideration:

1. Establish a statewide, interdisciplinary coalition similar to that found in California.
A state level group could support the identified interests and needs of simulation center staff including:

- Serving as a resource library
- Creating a system for scenario sharing
- Identifying potential research partnerships
- Providing faculty and technical support training opportunities

Serving as or providing for a 'think tank' of idea generation and for development of standard practices, the alliance could aide in the identification of best practices to achieve desired outcomes for Florida. It is evident that, in general, there is not interest in sharing equipment. However, the need for sharing of human capital and knowledge resources could be facilitated by such a group. A state level resource could track activities within Florida and serve as a conduit for collaboration across the state. The identified need for standardized practices and policies could be met through the state coalition structure and in collaboration with national interest groups. A multidisciplinary coalition is recommended to improve knowledge sharing across professions and facilitate marketing simulation to a more diverse audience.

2. **Facilitate regional work groups to minimize replication of equipment and maximize resource use while recognizing the geographic and cultural needs of the local area.**

As is the case in California, Florida is a geographically diverse state with a large population base that is faced with both rural and urban challenges. Though competition may have its benefits, replication of services and equipment is costly. Specifically within the state education system fully outfitting a simulation center in each community or state college and university cannot demonstrate a positive return on investment. Discussion must be held at the local or regional level to identify a system that will meet the needs of academia and the health industry in a cost-effective, quality manner. Such a system may involve the sharing of specialized equipment. The regional groups could provide input to the state level alliance and serve as the source of scenario development for sharing and focused research efforts. A critical component to be developed is the sharing or provision of technical resources / support.

3. **Fund research to validate the use of simulation, develop new applications of simulation, and identify best practices for replication.**

The need for research is clear and universally accepted. What remains needed is funding. A research grant program could be managed by the statewide coalition. Such a program may oversee small grant distribution or facilitate the submission of grant applications from diverse teams of researchers. Areas needing further development for application of simulation include:

- New graduate transition to work
- Re-entry of non-working licensed nurses to the work environment
- Experienced nurse transition to a new clinical setting or type of health care delivery
- Necessary work environment accommodations for the aging nurse population