**Interactive Research Report**

**Directions**: The following research report contains descriptions of the various components that comprise most reports. The purpose of this interactive report is to help you learn where to find specific information. Roll your mouse over the sections to reveal the descriptions. The definitions may also be found in the Week 2 lesson.

**Publication***: Clinical Simulation in Nursing*, [Volume 6](http://www.nursingsimulation.org/issues?Vol=6), [Issue 2](http://www.nursingsimulation.org/issues/contents?issue_key=S1876-1399(10)X0002-0), Pages e45-e52 (March 2010), published online 20 November 2009.

**Title**: Evaluation of a Multidisciplinary, Simulation-based Hospital Residency Program

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**Abstract**

A community hospital and a university recently collaborated to implement a pilot residency program for multiple disciplines utilizing patient simulation. This evaluation describes the experiences of new graduate RNs and doctors of pharmacy with the simulation-based residency program and makes recommendations for improving the program. The results were overwhelmingly supportive of the program and, more specifically, the use of simulation as an orientation technique.

**Keywords**: [simulation](http://www.nursingsimulation.org/search/quick?search_area=journal&search_text1=simulation&restrictName.ecsn=ecsn), [nurse residency](http://www.nursingsimulation.org/search/quick?search_area=journal&search_text1=nurse%20residency&restrictName.ecsn=ecsn), [learner-centered approach](http://www.nursingsimulation.org/search/quick?search_area=journal&search_text1=learner-centered%20approach&restrictName.ecsn=ecsn), [interdisciplinary](http://www.nursingsimulation.org/search/quick?search_area=journal&search_text1=interdisciplinary&restrictName.ecsn=ecsn), [hospital orientation](http://www.nursingsimulation.org/search/quick?search_area=journal&search_text1=hospital%20orientation&restrictName.ecsn=ecsn)

**Key Points**

* There is a well-defined academic-practice gap in nursing that is being addressed with simulation in nursing schools, but few hospital-based residency programs have employed simulation as a tool to fill this gap.
* This program evaluation was unique in that it was implemented by a small community hospital with limited resources and may, therefore, be applicable to a wider audience than previously published reports.
* The evaluation concluded that simulation is helpful in developing participants' clinical practice and helped them gain valuable skills in resource utilization, policy and procedure awareness, and a sense of camaraderie among co-workers.

A multitude of factors are leading to a hospital environment in which new graduate nurses with increasingly less practical experience are caring for increasingly ill patients ([Santucci, 2004](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext" \l "bib17" \o ")). A lack of hands-on clinical opportunities in nursing education, the nursing shortage, and an increased focus on patient safety are major factors that affect student nurses' abilities to obtain relevant clinical experience and develop higher levels of thinking.

Nursing is a practice discipline; however, the majority of nursing education occurs in a classroom as students listen to lecture by expert faculty. According to [Beecroft, Devenis, Guzek, Kunzman, and Taylor (2004)](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext" \l "bib4" \o "), curriculum experts believe that 50% or more of current content-focused curricula may be irrelevant to practice. Content-focused learning serves merely as a building block for higher levels of learning and knowledge such as application, analysis, and synthesis ([Airasian et al., 2001](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext" \l "bib2" \o ")). In nursing education there is a gap between desired learning and demonstrated learning which frequently results in diminished patient care and inefficient or unsafe nursing practice ([Billings & Kowalski, 2006](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext" \l "bib7" \o ")). Nursing educators have attempted to fill this gap by augmenting content-focused learning with time spent in the clinical practice lab and with clinical site experiences with live patients ([Childs & Sepples, 2006](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext" \l "bib9" \o ")). More recently clinical simulation is being explored as a way to fill this gap as well.

**Need for a New Program**

The responsibility for producing a nurse with honed critical thinking skills frequently falls to the hospital where the new graduate nurse is first employed. This makes a hospital-based residency program to help facilitate the transition of newly graduated RNs into skilled and safe practicing RNs of paramount importance. The use of new graduate RN residency programs is well documented, and these programs are widely employed ([Santucci, 2004](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext#bib17)). In the summer of 2007, Yakima Valley Memorial Hospital (YVMH), like many small community hospitals, did not have a formal residency program. The new-hire residency plan paired a newly graduated RN with an experienced preceptor, who guided the new RN through his or her initial few weeks to months of nursing experience. This practice produced many RNs who flourished. However, a vast array of preceptor teaching styles, varying preceptor involvement, and the lack of a formal, standardized curriculum led to wide variability in the new graduates' perceptions of the RN role and in new graduates' bedside practices. This inconsistency in role and practice of new RNs prompted the creation of a collaborative, simulation-based RN residency program dually prepared by Washington State University (WSU) and YVMH. Two lab preceptors who held joint appointments at both institutions oversaw the development and implementation of the program. The Advanced Clinical Education and Simulation (ACES) course was piloted from June 2007 to August 2007.

There is much interest in the use of simulation in RN residency programs but a dearth of published information in this area. The ACES program was unique in that it was implemented by a small community hospital with limited staffing; therefore, it may be applicable to a wider audience than previously published reports from large teaching hospitals. ACES was also unique in that there was no published data on a collaborative, simulation-based residency effort between a smaller hospital, like YVMH, and a large university, like WSU. Finally, it was imperative that the ACES program be thoroughly evaluated and improved as initial findings and evaluations prompted YVMH to make the program an entry requirement for all newly hired hospital nurses.

**Theoretical Framework**

The ACES curriculum employed a learning model called learner-centered education. Psychologist Carl Rogers used a humanistic perspective theory and applied it to learner-centered education ([McEwen & Wills, 2002](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext" \l "bib14" \o ")). Rogers believed that teaching should be learner centered and that teachers should function only to facilitate independent learning, which is entirely controlled by the learner. When teachers provide problems that are meaningful and real to the learner, intrinsic motivation is stimulated to solve the problem. Higher order learning (application, analysis, and synthesis) is best stimulated with such an intrinsic, self-directed learning model ([Airasian et al., 2001](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext#bib2)). Indeed, [Rauen (2004)](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext" \l "bib16" \o ") supported the use of the humanistic perspective as a template for simulation-based education, suggesting that adults learn best when they participate and are actively involved in learning. [Billings and Kowalski (2005)](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext" \l "bib6" \o ") also alluded to such a theoretical framework when they encouraged nursing educators to move away from memorization of teacher-directed learning and toward student-centered, self-guided critical analysis, synthesis, and evaluation.

The ACES curriculum was based on a learner-centered, self-directed educational model. This program evaluation has been undertaken with this same approach: No one knows better how to improve the learning model than the learner.

The ACES course took place at the WSU campus in Yakima, Washington. A large conference room was utilized for the policy and procedure review; students were placed in discussion groups of four to five learners. Simulations took place in the WSU practice lab. There were four separate “patient rooms,” some of which were divided by curtains, others by solid walls. Each room was set up to mimic a patient room at YVMH. Rooms had a patient bed, a simulator, and the necessary nursing intervention supplies for each specific scenario. Two Vital-Sim® simulators and two static manikins were used. One of the Vital-Sim simulators had cardiac monitoring capability but no heart sounds. The other Vital-Sim had no monitoring capability but provided a wide array of heart, lung, and even bowel sounds. Static manikins were used for task training and clinical skill acquisition. In addition to the didactic and simulation portions of the ACES course, students continued to practice nursing during their residency on the floor of YVMH of the unit to which they had been hired.

Using Rogers's learner-centered approach to education, this program evaluation focused on students' perceptions of the ACES curriculum, which was student centered. The simulation-based curriculum was meant to provide real application problems that produced opportunities for a participant to analyze, apply, and synthesize previously gleaned content-focused knowledge. The purpose of this retrospective pilot program evaluation was to explore and understand students' experiences within this simulation-based curriculum and suggest curriculum changes that would be meaningful to future students using Rogers's theoretical framework. To evaluate the program, two basic questions were used: What are new graduate RNs' experiences with a simulation-based residency program, and how could these experiences be used to improve the simulation-based residency program?

**Literature Review**

The literature clearly identifies an academe–practice gap, especially in new RN grads. According to [Del Bueno (2005)](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext" \l "bib10" \o "), between 65% and 76% of nurses with less than 1 year of employment as an RN do not meet expectations for entry-level clinical judgment. Most current nursing school curricula are content-focused, and testing is done with multiple choice exams in order to prepare students for the National Council Licensure Examination. However, as Del Bueno pointed out, “Patients do not present the nurse with a written description of their clinical symptoms and a choice of written potential solutions” (p. 281). So how have nursing schools adjusted (and how should hospital-based RN residency programs adjust) to teach and evaluate students' application and critical thinking? Simulation provides a potential solution.

Although there is a growing body of literature that identifies the use of simulation in academia, there is a paucity of studies that review the use of simulation in hospital-based nurse residency programs. Only three studies were found in a search of the Cumulative Index to Nursing and Allied Health Literature; all were published in 2007. [Ackermann, Kenny, and Walker (2007)](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext#bib1) described program implementation of an RN residency that utilized a few simulations at a large medical center. Ackermann et al. provided minimal discussion of the experiences of the resident RNs and only brief qualitative program evaluation. Data from this study supported the use of simulation as an invaluable, lifelike educational tool that helped ease residents' fears and support their critical thinking in a safe environment. [Kelly, Shepherd, Skene, and White (2007)](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext#bib13) demonstrated the use of patient simulation (using VitalSim) as an effective academic tool to produce more confident and better prepared newly graduated practitioners. Kelly et al. chose a rigorous, quantitative approach to program evaluation. These researchers used a randomized, experimental design in a newly graduated nursing student population enrolled in a 12-month RN residency program. Although the sample was small (N = 74), the findings are quite compelling. Data showed that students provided with a self-directed learning approach and simulation outscored those without simulation on postintervention testing; this finding supports the use of simulation as an effective tool in nursing academia ([Kelly et al., 2007](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext#bib13)).

[Beyea, Slattery, and von Reyn (2007)](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext#bib5) provided a descriptive approach in illustrating the design, implementation, and evaluation of an RN residency program very similar to the ACES program used at YVMH. The program described was also hospital based but was 12 weeks long, 4 weeks longer than the ACES program. Beyea et al.’s program was funded by a large federal grant and was performed at a major academic medical center. Although Beyea et al. considered resident RNs' confidence, competence, and readiness for practice; they did not base their evaluation on a specific theoretical framework.

**Method**

*Design*

This nonexperimental, retrospective program evaluation describes the experiences of the participants in the ACES program. On completion of the ACES course, the participants completed both qualitative and quantitative evaluations. Institutional approval was received from both WSU and YVMH allowing for program evaluation. The evaluations were completely anonymous and were collected from the participants by an unrelated third party in an effort to minimize reactivity.

*Sample*

Sample participants were all newly hired RNs or pharmacists at YVMH who participated in at least 5 weeks of the 8-week ACES program. Three of the initial participants were previously employed as RNs but had not worked at YVMH. RN licensure was not necessary for inclusion as many not-yet-licensed new grads and non-RNs participated. ACES attendance fluctuated from 28 to 45 during the 8-week program. Attrition of 4 participants occurred when they sought employment elsewhere. One of the participants who had previously worked as an RN was excused from the course. Of the 45 attendants, only 30 completed at least five simulation sessions and were, thus, asked to evaluate the course. Twenty-eight of these returned the evaluation forms, for a response rate of 93%.

The sample contained men and women, multiple ethnicities, and residents holding either associates or bachelors degrees in nursing, as well as 5 doctors of pharmacy residents. Specific demographic stratification data were not collected and thus were not available for program evaluation purposes. Residents from every hospital nursing unit participated. Two of the participants had worked as nurses for more than 10 years in an outpatient setting, but the remaining 26 had graduated from schools of nursing or pharmacy within the preceding 6 months.

*Measurement and Instrumentation*

Two separate author-developed instruments were utilized to obtain both quantitative and qualitative data from ACES participants: the ACES Evaluation Form (AEF) and the ACES Evaluation Form (Likert Scale) (AEF-LS; see Appendixes A and B). The AEF is a two-page, 12-item, short-answer essay questionnaire. The Flesch-Kincaid grade level of readability of this tool is 5.8. The AEF-LS is a 21-item, Likert-type scale evaluation with a section for brief comments below each question. The Flesch-Kincaid grade level of readability of this tool is 7.1.

Face validity was provided by a review panel of the YVMH Educational Resource Committee, which consisted of expert hospital educators from many departments and the entire Educational Services Department staff. In an attempt to gain a richer understanding of the participants' experiences with the ACES program, both quantitative and qualitative data were examined.

Numerical data from the AEF-LS instrument were entered by the first researcher into the Statistical Package for the Social Sciences (SPSS) Version 15.0 data analysis tool. The qualitative responses from both instruments were divided into sections for each item of the questionnaires. The participants' responses were then manually entered into word processing software. These data were then coded into major themes.

**Results, Discussion, and Recommendations**

Participants overwhelmingly felt that this course, and specifically the use of simulation, helped them to be better prepared for independent practice within the hospital. They felt that improved organization of the logistical aspects of the course would further facilitate their learning. Finally, participants stated that the course helped them gain valuable skills in hospital resource utilization, policy and procedure awareness, and a sense of camaraderie among coworkers. See [Table 1](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext" \l "tbl1), [Table 2](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext" \l "tbl2) for the detailed results of the AEF-LS and the AEF, respectively.

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| --- | --- |
| Table 1. Advanced Clinical Education and Simulation (ACES) Evaluation Form: Likert-type Scale Results | |
| ACES Evaluation Form: Likert-type Scale Question and Representative Responses (in italics)  (Likert: 5 = Consistently, 4 = Frequently, 3 = Infrequently, 2 = Rarely, 1 = Never) | Mean  (N = 28) |
| 1. The course was organized in a manner that facilitated my learning (1).  “Somewhat unorganized at times. Progressively got better with our input.” | 4.3 |
| 2. This course encouraged the development of my critical thinking skills (6).  “Simulations were multi-dimensional and forced you to prioritize and use good judgment.” | 4.6 |
| 3. This course helped me develop my “hands-on” nursing skills (7).  “Extremely good scenarios that will help when floating to other units.” | 4.2 |
| 4. This course . . . promoted my understanding of my role as a nurse at YVMH (13).  “This course was a positive experience throughout and touched on matters that I had a lot of questions—policy and procedures, especially.” | 4.5 |
| 5. I found the simulations to accurately reflect situations that could occur with patients for whom I care (14).  “The simulations open(ed) my eyes to some of the areas where I can improve”; “It would be nice if occasionally groups were broken up into their units to learn unit-specific skills with scenarios.” | 4.1 |
| 6. The simulations were good learning experiences (15).  “I felt like we did a lot wrong in the simulations and then had to correct as we debriefed.”; “Really helped with critical thinking and pathways.” | 4.4 |
| 7. The debriefing time helped me to understand the strengths and weaknesses in my performance during the simulation (16).  “Debriefing was the most helpful and informative, but I would like to know what I should have done, not just what I did wrong.” | 4.1 |
| 8. The simulations fostered my critical thinking skills (17).  “Hampered only by non-living patients.” | 4.5 |
| 9. The simulations fostered my communication skills (18).  “I learned where I can improve in becoming a better communicator.” | 4.1 |
| 10. The simulations fostered my prioritizations skills (19).  “Not during the simulations. During debriefing I was able to prioritize better.” | 4.4 |
| 11. The simulations fostered my development of core “hands-on” nursing skills (20).  “Definitely helped with things I have not yet encountered.” | 4.4 |
| 12. The policy/procedure review was informative (21).  “Very much thought this was good, AND boring. But still good!” | 4.6 |
| YVMH, Yakima Valley Memorial Hospital. Note: Selected questions from the ACES Evaluation Form (Likert Scale) form are listed, along with an actual response (in italics) that was representative of the group's responses. The bold number at the end of the question denotes the corresponding question number on the actual AEF-LS form (appendix B). Also included in the column on the right is the mean score, from 1 to 5, on the Likert-type scale. | |

|  |  |  |
| --- | --- | --- |
| Table 2. AEF Results: Select Questions From the Advanced Clinical Education and Simulation Short Answer Evaluation Form (AEF) and the Top Two Themes Coded via Qualitative Summarization | | |
| AEF Question | Coded Response 1 | Coded Response 2 |
| 1. Describe the way you learn best. | “Hands on” or active learning | Demo first |
| 2. What was your favorite part of this course? Why? | Simulation | Community |
| 3. What was your least favorite part of this course? Why? | Policy review | Logistics/organization |
| 4. What portion of the course contributed most to your learning? | Simulation | Hands-on |
| 5. What suggestions do you have to enhance the course? | Organization/logistics | Simulation details |
| 6. Do you feel that this course covered topics/skills that you have not covered with your preceptor? | Yes, helpful | Yes, not helpful |
| 7. Do you feel that this course has made you a better nurse? | Yes | No |
| 8. List 3 benefits you have gained as a result of participating in this course | Community | Resource awareness |
| 9. How many “patients” died while you were the primary nurse caring for them? Why did they die? | None | One or more, shut down |
| 10. If you could change the format/structure of the course, how would you do so? | Logistics/organization | Content |
| AEF, ACES Evaluation Form. | | |

Key points from the AEF-LS included the following: Participants felt that the course helped develop critical thinking skills, better defined the participants' roles as RNs at YVMH, and informed them of critical YVMH policies and procedures. Regarding the use of simulation, a majority of participants felt that the simulations accurately reflected potential patient care situations and felt that these simulations were good learning experiences. Simulation fostered communication skills, critical thinking, and prioritization skills—all qualities that YVMH was trying to improve in resident RNs. It is interesting to note that, when asked whether the overall ACES course helped develop “hands-on” skills, 43% responded with a 5 ( = consistently) on a 5-point Likert-type scale. When asked whether simulation helped with these same skills, 57% responded with a 5. Clearly simulation played a key role in developing this aspect of new graduates' care of patients, as previously supported in multiple other studies ([Ackermann et al., 2007](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext#bib1), [Beyea et al., 2007](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext#bib5), [Kelly et al., 2007](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext#bib13) [National League for Nursing, 2006).](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext" \l "bib15" \o ")

Participants recommended that the course be better organized and time managed to enhance their learning. The biggest recommendation for improvement came from participants' AEF-LS responses to a question asking whether debriefing time helped identify strengths and weaknesses; 25% of participants felt that this occurred infrequently, rarely, or never. This was of huge importance to participants' learning because experts believe that the debriefing period of simulation is when the majority of higher level learning occurs ([Arnold, Brost, & Torsher, 2008](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext" \l "bib3" \o ")). To address this issue, all future staff who teach in the ACES program will undergo a “train the trainer” course. Such a course will include debriefing training that stresses a uniform, depersonalized, student-driven approach to learning during debriefing. ACES instructors will take on the role of participants and complete a specific number of simulations and debriefings in the participant role before being asked to lead simulations and debriefings in a staff role.

Qualitative data supported the Likert-type scale responses in that logistics and organization were consistently listed as areas of the course needing improvement. Participants recommended that the course be shortened to 6 weeks and that class days be midweek rather than Monday. They further recommended that the simulation and debriefing sessions adhere to a strict schedule while ensuring adequate time for learning. It has been suggested by simulation experts that equal times be devoted to simulation and debriefing ([Arnold et al., 2008](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext#bib3)). Results also suggested that students learned best with an active approach to learning, but some preferred a demonstration-first style. Because of this result, a basic nursing skills review course will be part of the first day of the course in the future. This review will allow students to use the simulators to practice skills such as communication, assessment techniques, Foley catheterization, IV pump programming, and sterile technique at supervised skills stations before participating in active patient simulation case scenarios. This approach will allow participants to refresh their skill repertoire and become accustomed to the idiosyncrasies of the simulators.

On the AEF, 70% of participants revealed that they clearly felt that the ACES course covered helpful information that was not covered in their one-on-one time caring for live patients under the guidance of their preceptor ([Table 2](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext#tbl2), Question 6). Question 7 in [Table 2](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext#tbl2) was difficult to code: Fully 90% of participants felt they were better nurses after taking part in the ACES course, but for a wide variety of reasons. Participants felt that the following nursing skills were honed during ACES: resource awareness, a team approach to patient care, experience, and “hands on” skills.

Often during the simulations, if a resident RN made a critical error, the simulated patient would have a reciprocal response which led to cardiac and/or respiratory arrest. These simulated code situations were very enlightening (as detailed in data from Question 9 in [Table 2](http://www.nursingsimulation.org/article/S1876-1399(09)00527-1/fulltext#tbl2)). Participants stated that the reasons that their simulated patients died were individuals' “shutting down under stress” and/or demonstrating a “lack of knowledge.” However, participants noted that simulated patients did not die when a team approach to patient care was employed. All participants except for one said that the death of simulated patients was a learning experience; comments included, “You have no idea how paranoid I am about giving narcotics now . . . for the better” and “My [simulated] patient died because I was too slow or was not able to handle the situation appropriately. However, this is good because I learned from this experience.”

Qualitative data demonstrated that participants found simulation to be an excellent way to learn; nearly half of all the participants listed simulation as their favorite part of the course. An unexpected but exciting finding was that the participants enjoyed the sense of community that the course fostered. Meeting and interacting with other new graduates who worked on various units in the hospital was viewed as an encouraging and supportive activity; 30% of participants listed this sense of community as a key benefit of the ACES course. The other major benefit manifested in the AEF data was that upon completion of the ACES course, students felt they had a greater awareness of resources and felt more comfortable in utilizing them.

An overwhelming majority of participants' responses showed that simulation was the part of the ACES course that contributed the most to their learning. One commented that simulation “allowed [me] to make my own mistakes and learn from them.” Another said that in simulation, “I was put in a situation where I was NOT comfortable and had no idea what to do. As a result, I made many errors and I'm glad I did because I was able to learn from them.”

Given the evaluation data, YVMH's conclusion was that the ACES course is helpful in developing participants' clinical practice and that the ACES course should be required for anyone who needs help in this area. ACES participants clearly felt that the ACES course was beneficial and that simulation was the most valuable portion of the program. The participants made some excellent suggestions about how to improve the course, and these changes are being implemented. ACES has been adopted by YVMH as a requirement for all newly hired RNs, and the format has also been used as an educational tool for licensed practical nurses as the hospital is expanding the role of these nurses. In addition to newly hired personnel, future potential users at YVMH may include traveling health care workers, annual skills fair participants, persons deemed to require remediation, staff transferring to a different unit, and proactive employees who desire to practice rarely used but critical skills and thought processes. YVMH and other facilities could consider using such a simulation-based program for skills competency evaluations such as those required by the Joint Commission for Accreditation of Healthcare Organizations.

Limitations of this study lie in its relatively small sample size (N = 28) and the fact that one lone researcher performed the qualitative data analysis (Mr. Young performed the data analysis while Mrs. Burke coordinated the actual residency course and assisted with data collection). The study is based on a single pilot program from a single small community hospital. Unfortunately, we were not able to directly compare or contrast the ACES simulation-based residency to a traditional, nonsimulation approach to residency. Another limitation is that the anonymity of the data obscures some potentially important descriptive statistics, such as previous experience with simulation, number of nurses with associate's versus bachelor's degrees, previous nursing experience, age, gender, and primary language. Also limiting the study was the fact that our staff and facilitators had minimal experience with implementing simulations and supervising debriefings. However, the experience we gained from performing this ACES course will be invaluable for future facilitation.

Collaboration, such as that demonstrated by WSU and YVMH, fosters a sense of connectedness and community. This is realized not only between academia and service, but also among multidisciplinary participants, as well as between nursing students and nurses employed by hospitals. In carrying out the ACES course, the residents enjoyed the time “off the floor” in a more relaxed atmosphere, where they could better get to know the facilitators and one another. The facilitators, too, benefited from the additional time to evaluate and familiarize themselves with their new employees. This sense of camaraderie could help better prepare nursing students and increase the number of available nurses who want to work for a collaborating hospital, thus aiding in relief of the nursing shortage for hospitals that might employ a program such as ACES. A key factor in the collaboration between WSU and YVMH was the fact that the two developers of the ACES program had joint appointments at both institutions. Other institutions interested in producing a simulation-based nurse residency program should consider implementing such a staffing strategy to maximize staffing resources and foster communication between institutions.

At YVMH, the ACES program bridged the gap between academia and practice successfully by melding both faculty and resources to provide an innovative program to orient newly hired graduates. Future research should further stratify the sample to gain better understanding of participant responses. Future studies could also incorporate a demonstration-first model of education prior to simulation.

**Appendix A**

Advanced Clinical Education and Simulation Evaluation Form: Likert Scale (AEF-LS)

Please answer the questions below using the following scale. Circle the number that you feel best corresponds to your answer for each question. Your written comments are extremely helpful. Before beginning, please list the unit on which you work in the space above question number 1.

http://www.nursingsimulation.org/webfiles/images/transparent.gif1 = Never

http://www.nursingsimulation.org/webfiles/images/transparent.gif2 = Rarely

http://www.nursingsimulation.org/webfiles/images/transparent.gif3 = Infrequently

http://www.nursingsimulation.org/webfiles/images/transparent.gif4 = Frequently

http://www.nursingsimulation.org/webfiles/images/transparent.gif5 = Consistently

http://www.nursingsimulation.org/webfiles/images/transparent.gifNA = Not Applicable

EMPLOYEE UNIT\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. This course was organized in a manner that facilitated my learning

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

2. The instructors facilitated instructor-student interaction

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

3. The instructors demonstrated enthusiasm about the subject matter

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

4. Class time was used efficiently

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

5. The student responsibilities in the course were clearly presented

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http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

6. This course encouraged the development of my critical thinking skills

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

7. This course helped me develop my “hands-on” nursing skills

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

8. The instructors demonstrated an attitude of mutual respect in instructor-student interactions

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

9. The instructors demonstrated expertise in the subject matter of the course

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

10. The instructors were interested and responsive to my concerns, questions and feedback

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

11. The instructors served as role models of professional nursing

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http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

12. The instructors were accessible and approachable

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

13. This course was valuable in promoting my understanding of my role as a nurse at YVMH

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

14. I found the simulations to accurately reflect situations that could occur with patients for whom I care

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

15. The simulations were good learning experiences for me

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

16. The debriefing time helped me to understand the strengths and weaknesses in my performance during the simulation exercise

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

17. The simulations fostered my critical thinking skills

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

18. The simulations fostered my communication skills

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

19. The simulations fostered my prioritization skills

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

20. The simulations fostered my development of core “hands-on” nursing skills

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

21. The policy/procedure review was informative

http://www.nursingsimulation.org/webfiles/images/transparent.gif1http://www.nursingsimulation.org/webfiles/images/transparent.gif2http://www.nursingsimulation.org/webfiles/images/transparent.gif3http://www.nursingsimulation.org/webfiles/images/transparent.gif4http://www.nursingsimulation.org/webfiles/images/transparent.gif5http://www.nursingsimulation.org/webfiles/images/transparent.gifNA

http://www.nursingsimulation.org/webfiles/images/transparent.gifComments:

**Appendix B**

Advanced Clinical Education and Simulation Evaluation Form (AEF)

Please answer the following questions using constructive criticism and professionalism. Your comments are valuable in changing this course to best meet the needs of the resident RNs of the future. It is important that we learn the course's strengths and weaknesses for each individual person.

1. On what unit do you work?

2. Please describe the way that you feel you learn best.

3. What was your favorite part of this course, and why?

4. What was your least favorite part of this course, and why?

5. What portion of the course contributed the most to your learning? Why?

6. What suggestions do you have to enhance the overall quality of this course?

7. Do you feel that this course has covered topics/skills that you have not covered with your preceptor?

8. Do you feel that this course has made you a better nurse?

9. List 3 benefits that you feel you have gained as a result of participating in this course:

1.

2.

3.

10. How many “patients” died while you were the primary nurse caring for them? Why did they die?

11. If you could change the format/structure of the course, how would you do so?

12. Should you have any other comments, please list them below:

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Cite this article: Young, P., & Burke, J. (2010, March). Evaluation of a multidisciplinary, simulation-based hospital residency program. *Clinical Simulation in Nursing, VOL(6),* e45-e52. [doi:10.1016/j.ecns.2009.08.005](http://dx.doi.org/10.1016/j.ecns.2009.08.005)

PII: S1876-1399(09)00527-1

doi:10.1016/j.ecns.2009.08.005

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