The Clinical Preceptorship Model: Is it Time for a Change in Approach

Susan R. James PhD, RN

Curry College Nursing Division

Submitted to Massachusetts Department of Higher Education

Allied Health Initiative

November 24, 2015
Background and Significance

Over the more than 40 years that the one-to-one preceptorship model has been part of the baccalaureate educational experience, the healthcare system has become a markedly more complex environment. Much of the care formerly provided in a hospital setting is now provided in a community setting, while nurses in the acute care setting care for patients who, only several years ago, would have been in a specialized intensive care unit. This brings into question whether the one-to-one preceptorship model in the acute care setting is the most effective model to facilitate the transition to the professional role for senior nursing students. The American Association of Colleges of Nursing cites goals for the final clinical immersion course for graduating seniors. These include: providing holistic, evidence-based, population- and patient-centered care that allows for differences in culture and developmental status across the lifespan; demonstrating beginning proficiency in psychomotor skills, clinical judgment, and accountability; acting as a manager and coordinator of safe and high quality care; participating in an interprofessional healthcare team; developing appropriate responses to unpredictable clinical events; and beginning to acquire a professional identity (AACN, 2008, pp. 33-35). Ensuring that baccalaureate graduates achieve these goals is traditionally accomplished by assigning each student to a preceptor in a one-to-one clinical experience as a senior year capstone.

The complexity of the healthcare environment challenges nurse educators to prepare graduating students to assume their professional role with confidence in their ability to provide safe and high quality care. Nursing programs have relied on the willingness of experienced and interested nurses to act as preceptors. The preceptorship model for the senior nursing practicum has assisted graduating seniors to gain confidence and competence in transitioning from student to the independent professional role. Finding practicing nurses who are willing and competent to mentor students, however, has become a challenge. In metropolitan areas with many nursing programs, competition for preceptors in acute care agencies is enormous. This is exacerbated by the expanding need for
experienced nurses to precept new hires, as more senior nurses enter retirement. In rural areas, where acute care agencies may be scarce, the one-to-one preceptorship model might be far more difficult to achieve. This competitive situation and the increasing complexity and demands of the healthcare system, highlight the need to re-evaluate the effectiveness of the preceptorship model at assisting senior students with achieving professional goals. Evidence-based literature on senior clinical experiences suggests that the preceptorship model is effective for students to achieve optimal transition to practice through socializing students to the professional role (Hendricks, Wallace, Narwold, Guy, & Wallace, 2013). It is less effective in increasing clinical competency, critical thinking, and NCLEX pass rates (Rebeschi & Aronson, 2009; Udlis, 2008).

Advantages for precepted students include opportunities to increase assessment and psychomotor skills, become more organized with patient care, feel more comfortable teaching patients and families, and function in a “real world” environment. Depending on the experience, less advantageous are the achievements of other goals, such as developing clinical judgment, responding appropriately to unpredictable patient care situations, and practicing leadership and delegation.

From a practicing nurse’s perspective, there are multiple considerations associated with deciding to become a preceptor, including balancing teaching or mentoring with the demands of complex patient care. It is relatively easy for preceptors to suffer burn-out, which decreases their availability. A recurring theme in studies of preceptors is that for preceptors to offer an optimal student experience, they need clearly delineated responsibilities, appropriate time to devote to the role, support from their agency administration, and formal education on such issues as creating a climate of learning and assessing/evaluating student competencies (Fulvio, Stichler & Gallo, 2015).

Despite the advantages of the one-to-one preceptorship model, there remains a perception among practicing clinicians that nursing students are not prepared to assume the role of professional
nurse after graduation (Beal, 2012; Cronenwett, 2004). Additionally, as the healthcare system becomes more complex and faculty become more removed from clinical practice, there is increasing dissonance between theory and practice (Cronenwett, 2004). As it is the faculty role to prepare graduates who are ready to provide patient-centered care, re-thinking curriculum and desired educational outcomes to keep pace with the changing healthcare landscape becomes a priority.

Given these factors and the changing professional role of nurses, this is an opportune time to examine the current preceptorship structure and consider innovative approaches to replace or augment it. A preliminary literature review found few innovative approaches to replace the current preceptorship model. Using an online environment or simulation to enhance psychomotor skills or clinical judgment can be effective, but these methods alone do not address the important consideration of socialization to the profession. The goals of this review are to: (1) Describe in depth the evidence-based current and proposed innovative clinical experiences for senior baccalaureate nursing students. (2) Address how the achievement of the previously stated goals and competencies might occur in models that differ from the standard preceptorship model, and (3) Make recommendations for exploring innovative possibilities.

**Methodology**

An extensive online database search for pertinent articles was conducted to retrieve published information about, and description of, any innovative models used to provide transition to practice clinical experiences for senior nursing students. In addition, hand searches of appropriate article references yielded additional information. The search criteria encompassed articles published between 1996 and the present, written in the English language and published in professional nursing journals. Databases accessed for the preliminary search included CINAHL, Ovid, PubMed, and Sage, using the following keywords and combinations: senior clinical experience, capstone, preceptorship, clinical immersion, innovative clinical models, internships, baccalaureate nursing education, practice
partnerships, and simulation. The search generated hundreds of citations and nearly 140 abstracts, which were reviewed for inclusion in the review. In addition to criteria mentioned previously, the researcher used the following for inclusion: articles must be written by registered nurses, could be either research or non-research articles, and must focus primarily on a model or structure of a senior clinical experience. Articles not written in English were excluded from the analysis, as well as articles pertaining to programs other than traditional undergraduate (e.g. accelerated, second degree, or direct entry master’s), transition programs provided by agencies for newly graduated nurses, and research articles that focused exclusively on issues other than student outcomes from model implementation (e.g., perceptions of satisfaction from nurses or faculty). The final number of articles used in this analysis is 57.

**Analysis and Results**

Models of clinical education for baccalaureate prepared graduates fall into several major categories: 1. One-to-one preceptorships, which pair a single student with a single experienced nurse; this model incorporates varying hours of clinical time and appears to be the model most frequently described in the literature for senior capstone courses, 2. Academic-practice partnership, which is a formalized, contracted, collaboration between an academic institution and a clinical agency; academic partnerships include models, such as academic health centers, research centers, dedicated education units, and relationships with both acute and community agencies, 3. Simulation models, where students acquire competencies in psychomotor skills, clinical judgment, and prioritization needed to practice effectively, and 4. Integrative innovative models of clinical practice that occur in a variety of traditional and non-traditional settings.
**One-to One Preceptorships**

One-to-one preceptorships have been the model of choice for academic institutions for many years. The literature on senior nursing capstone experiences primarily describes the advantages and disadvantages of the one-to-one model, as well as challenges faced by preceptors, faculty, and agency and academic institutions. The foundation of this model is the pairing of one experienced nurse preceptor with one senior student who works alongside the preceptor to provide patient-centered care. Although thought of as an experience provided in an acute care setting, this model is also effective in non-traditional settings, such as home health agencies or hospice (Mager & Bradley, 2013). The preceptor shares her or his expertise with the student, provides feedback, facilitates learning experiences and assists the student in the transition to “thinking like a nurse” (Carlson, 2012; Hendricks et al., 2013; Paton, Thompson-Isherwood & Thirsk, 2009). In some instances, preceptors are responsible for student evaluation as well (Carlson, 2012; Yonge, Myrick, & Ferguson, 2011).

The faculty role in the preceptor model varies, but primarily faculty are responsible for overseeing the experience, communicating with preceptors and students, problem-solving issues that arise, conducting reflective seminars with students and, under some circumstances, educating the preceptors for their role (Yonge, Ferguson, Myrick, & Haase, 2003). Faculty usually are responsible for overseeing the experience for several students, often located in different clinical sites or on different units within the same site, and who are in the clinical area at a variety of days and times. Faculty visit with students and their preceptors on a regular basis and provide formative and summative evaluation in collaboration with the preceptor.

The one-to-one preceptorship model is considered to be advantageous for students because it gives them experience and exposure to a real world setting. It is designed to facilitate learning within the context of a healthcare setting, and provide students with opportunities to develop psychomotor
skills, organization, clinical judgment, professional socialization and application of theory to practice (Hendricks et al., 2013). Students are provided with individual attention and timely feedback, and preceptors can tailor experiences according to the students’ emerging self-confidence and interests (Luhanga et al., 2010). Often, students who perform well in their precepted experience are recruited by their precepting agency after graduation.

There are, however, disadvantages to this model, in addition to the issues discussed previously (e.g., shortage of willing and experienced preceptors, competition for clinical placements, differences in perception about graduates’ abilities to provide quality care). From an academic perspective, an important disadvantage is that students in precepted experiences often do not receive learning opportunities comparable to other students, despite the academic institution’s efforts to provide each student with an optimal precepted experience. Several factors contribute to this problem. Some clinical agencies, for example, are reluctant to allow students to practice certain higher level psychomotor skills, such as administering certain parenteral medications (e.g., insulin), IV insertions, or even documenting in electronic medical records. Scheduling for both preceptor and student can be challenging (Hendricks et al., 2013; Luhanga et al.2010), and because of this, students may need to be placed with a different preceptor if a shift changes or the preceptor goes on vacation; this type of situation can undermine the student’s developing self-confidence and interfere with the students’ perceptions of being part of the patient care team.

One of the most important contributing factors to a positive precepted experience for the student is consistency and availability of the preceptor (Luhanga et al.,2010). Happell (2009) suggests that success is intimately related to the quality of the preceptor-student relationship. Many authors describe the essentials of facilitating this relationship, including appropriate preceptor preparation, agency support and recognition, clear expectations for preceptors (especially in regard to student
evaluation), and more frequent faculty visits (Carlson, 2012; Happell, 2009; Luhanga et al., 2003; Paton et al, 2009; Yonge et al, 2003).

**Academic-Practice Partnerships**

Another approach for both reducing the academic-practice gap and conserving faculty and clinical sites is the creation of an academic-practice partnership. Edmond (2001) described the foundation of this model as addressing nursing in context. Students need to learn how to manage the day-to-day nursing experience, not just the acquisition of technical skills. Edmond suggests that an approach found in various iterations of academic-practice partnerships can broaden the clinical experience through the collaboration of academic and practice teams (Edmond, 2001).

Although not a novel concept, this structure of undergraduate clinical education was recommended by the Institute of Medicine (IOM) in its report *The Future of Nursing* (2011) as an approach to address the problems of insufficient clinical placement sites and shortages of nurse faculty. Academic-practice partnerships are formal, contracted, collaborative agreements between academic institutions and clinical agencies (Beal, 2012; Beal et al., 2012; Cronenwett, 2004; Frank, 2008). They can occur in any type of practice setting, such as communities (Aponte & Egues, 2010; Fortier et al., 2015; Lough, 1999; Mager & Bradley, 2013), schools (Kreulen, Bednarz, Wehrwein, & Davis, 2008), and faith communities (parish nursing) (Otterness, Gehrke, & Sener, 2007), as well as in acute care and long term care facilities. Successful partnerships have mutual goals, shared vision, consistent and regular communication, benefits to both partners, dedication to lifelong learning, required infrastructure, and leadership support (Beal, 2012; Beal et al., 2012; Cronenwett, 2004; Frank, 2008). Careful pre-planning is essential, and often occurs over months to gain stakeholder engagement and establish trust (Niederhauser, Schoessler, Gubrud-Howe, Magnussen, & Codier, 2012).
In 2010 the American Association of Colleges of Nursing (AACN) and the American Organization of Nurse Executives (AONE) formed a task force to initiate an in-depth exploration of academic-practice partnerships (Beal et al., 2012). The charges of the task force were to initiate a national conversation and describe what is known about best practices in partnerships. This would include identifying and describing important aspects of successful and sustainable partnerships, impact on stakeholders, challenges associated with establishing partnerships, and strategies for developing effective partnerships (Beal et al., 2012). As part of the process, the task force did an integrative review of published literature about academic-practice partnerships (Beal, 2012) and made a tool kit available that can assist academic and clinical institutions with partnership development. The toolkit is available at: www.aacn.nche.edu/leading-initiatives/academic-practice-partnerships (Beal et al., 2012).

Beal (2012) stated several advantages to partnerships. These include increased access to clinical sites, collaboration between clinical and academic professionals to improve both patient outcomes and student learning, ease of transition to practice for new graduates, joint research ventures, optimal use of institutions’ resources, and more visible attention to nursing practice. She also described some important challenges associated with developing and instituting these models, which are focused on allotted time to plan and implement, creating a sustainable structure, workforce issues, and evidence-based evaluation of objective outcomes (Beal, 2012).

**Faculty-practice partnerships.** Initially, practice partnerships served the dual purpose of keeping faculty up-to-date clinically and providing a faculty supervised placement for students (Beal, 2012; Frank, 2008). These partnerships include joint appointments, academic nursing centers, centers dedicated to research or evidence-based practice, and nurse-managed health centers.

Joint appointments occur when faculty and/or experienced nurses are appointed to, and paid by, both the academic and practice institutions. In this cost-effective scenario, a faculty member might
provide educational or research expertise to nurses in the clinical area, while an expert nurse clinician teaches specialized content to students in a theory or leadership course (Beal, 2012; Frank, 2008). This model benefits faculty, clinicians, students and patients because the academic and clinical aspects complement and augment each other. Functioning in a joint appointment has been known to increase faculty satisfaction, as it facilitates involvement of the faculty member in the practice setting (Beal, 2012). Challenges to sustainability can occur because of potential role confusion, increased time demands from two institutions, and unclear delineation of priorities (Frank, 2008).

**Academic center partnerships.** Academic nursing centers and nurse managed community health centers provide similar benefits for faculty and students. In some instances, an added value to these types of partnerships is that many are situated in demographically challenged communities, which benefit from health promotion and other available health services. Barger (2004) described how academic nursing centers have changed over the years, as changes in health policy at the national level have occurred. Initially considered an approach for addressing issues of providing learning sites for students and enhancing faculty practice opportunities, as well as providing a service to surrounding communities, this model of care has declined because of changes in healthcare funding and grant opportunities (Barger, 2004). Forced to become self-sustaining, academic nursing centers transitioned from primarily being learning sites for students to becoming providers of care. Academic nursing centers still have tremendous value as a clinical experience for students in that their provision of primary care occurs within an interdisciplinary, patient-centered environment (Barger, 2004).

Aponte and Egues (2010) describe an innovative collaboration between a school of nursing and its college’s own health center. Goals of this collaboration included increasing the availability of health promotion; illness prevention; screening and wellness activities for college students, faculty, and staff; and providing senior nursing students with a community-focused clinical experience. Students underwent ongoing training in listening skills, change theory, providing necessary referral or
intervention, working in groups, maintaining privacy and confidentiality, and professional demeanor and presentation. Students then functioned as “peer educators” (Aponte & Egues, 2010). Advantages to the college included a cost effective approach to facilitating wellness and decreasing risk behaviors in the college population, while students experienced nursing from a perspective different from the usual acute care placement. As with any partnership, meticulous planning between the school of nursing and the wellness center staff occurred prior to implementation of the model; this included a needs assessment administered by the students, data analyses to determine health care priorities, and planning of health promotion activities and educational presentations. Faculty were readily available to students for consultation and to facilitate access to needed resources.

Forty senior students, in groups of ten participated in the initial implementation of this clinical experience (Aponte & Egues, 2010). They completed reflective journaling of their experiences and progress toward goals (e.g., application of theory, development of critical thinking), and evaluated their experiences through a faculty-designed questionnaire at completion. Students expressed positive experiences and feelings of satisfaction. Faculty performed objective evaluations of both the journals and clinical performance (Aponte & Egues, 2010). Although this model was used during a senior community health experience, it could easily be adapted to the goals of a senior capstone.

Other community partnerships. Frank (2008) describes partnership models between academic institutions and community agencies, such as the VNA, public health department, schools, neighborhood health centers and faith-based agencies. Frank (2008) emphasizes that for a successful community partnership relationship-building, advance planning, appropriate orientation for faculty and students, and coordination between institutions regarding budgeting and grant funding must occur. Although literature on academic-community partnerships often describes clinical experiences for senior students as part of a community health nursing course, these models could be used, perhaps in combination with other models, to achieve the goals of a senior capstone.
**Academic – school partnership.** Kreulen et al. (2008) present the development of a school district-academic partnership model, the Clinical Education Partnership Model (CEPM). Lack of population-focused senior clinical placement sites and unmet healthcare needs of the school children in the community prompted development of this collaborative model. As with other academic-practice partnerships, extensive planning occurred prior to implementation. Important contributing factors to a successful partnership included school administration cooperation and approval, standardization of clinical practice guidelines, risk management policies, faculty and school nurse development workshops, and access to appropriate resources. Additional areas addressed in the planning included developing a trusting relationship; delineating expectations; exploring specific topics related to roles, such as healthcare issues seen regularly in school children, state and local regulations, privacy issues, and documentation (Kreulen et al., 2008).

In this model (Kreulen et al., 2008), groups of up to ten senior students practiced in the schools under the supervision of both faculty and the school nurse. School nurses arranged the experiences for the students, which included interacting with school children and their families, as well as teachers and other school staff; developing and presenting health promotion activities; providing assessments and screenings; participating in the development of emergency health plans for individual students; and home and community outreach (Kreulen et al., 2008). Students and school nurse participants reported high levels of satisfaction with the clinical experience.

Lough (1999) describes a project designed by faculty at Marquette University, which created an academic-service partnership between the university college of nursing and a Catholic grade school, as part of a more general outreach to the surrounding community. A primary objective of this partnership was to provide health care services to the community at “point of living”, with students and professionals going into the community where the population lives and works. Other objectives included increasing clinical placements for students and establishing interdisciplinary relationships with multiple
community organizations that serve the people in the community (Lough, 1999). During their two-day a week clinical experience, senior students re-designed the health office, administered first aid for minor illnesses or injuries, performed screenings and immunization assessments, and revised medication policies. Additionally, students developed and presented pertinent health promotion programs, including a health fair held at the school. Because of the frequency with which other community agencies interacted with the school, students derived benefit from interdisciplinary communication and planning (Lough, 1999). Partnerships with schools have an added benefit to the community, particularly in regard to health promotion. In evaluating the success of the partnership, Lough (1999) reports that the school partnership resulted in enhancing families’ concepts of preventing illness, rather than seeking health care just when health problems arise.

**Academic-public health partnership.** Academic-practice partnerships between academic institutions and public health departments can facilitate student acquisition of goals related to population health and teamwork. Ganley and others (2004) reported on a collaboration between nurse faculty from several universities and public health nurses in Marin County, CA. Prompted by decreasing accessibility of clinical placements in this large metropolitan area and faculty interested in increasing alliances and communication with health departments, efforts began to create the partnership – Community Academic Practice Alliance (CAPA). This partnership coordinated public health placements for students from multiple academic institutions. Benefits that result from this type of partnership include learning and interventions related to population-focused nursing practice, development of cultural sensitivity, health benefits to the surrounding communities, and incorporation of evidence-based care (Ganley et al., 2004). Advantages for faculty included more positive cooperation regarding student clinical placements, and exposure to this area of nursing practice prompted students to think of a possible career in public health.
Students, faculty, and public health nurses completed an investigator-created satisfaction survey at the completion of their experience (Ganley et al., 2004). In addition, students were surveyed before and after the experience on their attitudes toward a community/public health nurse career. Data showed high satisfaction and a significant change in attitude about public health nursing as a career. The researchers surveyed faculty and public health nurses as to their overall satisfaction with the alliance. In general, both groups rated high satisfaction with the alliance. Answers to questions directed to participants before and after implementation about collaborating on clinical placements revealed a significantly more positive attitude (Ganley et al., 2004). Unfortunately, the sample of participants was too small to generalize findings.

**Faith-based partnerships (parish nursing).** Parish nursing is nursing in a non-traditional setting that provides holistic care within a faith-based community. Within the context of spirituality, the focus of care is on maintaining wellness and quality of life, including support at end-of-life, through the integration of health promotion and a variety of holistic healing techniques (Lough, 1999; Otterness, Gehrke, & Sener, 2007). Otterness and colleagues (2007) reported about a project that involved senior nursing students in a combined education service project with a variety of faith-based communities. Teams of ten students with faculty facilitators chose a theory-based semester-long project that incorporated assessment, health planning, potential implementation and evaluation directed toward health promotion and the health needs of the faith-based population. While unable to practice psychomotor skills, the experience had several advantages for students, such as application of critical thinking and synthesizing, developing cultural awareness, improving communication competencies, data collection and analysis, team participation, and examination of personal and professional values (Otterness et al., 2007). The collaboration between the parish nurses and the academic faculty provided the nurses and the faith community with access to resources they would not normally have. Potential challenges for this type of clinical placement include ethical/religious practice conflicts; practice liability
issues, including confidentiality; and planning that involves communication with several layers of church hierarchy (Otterness et al., 2007).

**Academic-Practice Partnerships in Acute Care – Dedicated Educational Units (DEU)**

A relatively recent model of academic-practice partnership is the Dedicated Education Unit. First described by Gonda, Wotton, and Edgecombe (1999), the DEU originated at Flinders University in South Australia in 1997. It was designed to address nursing workforce issues (shortages of faculty and clinical sites) as well as the gap between theory and practice, which experienced nurses identified as a problem in new baccalaureate graduates. The DEU has been adopted by many colleges of nursing in the United States as a replacement for the one-to-one preceptorship model, which has had its challenges, such as reduced numbers of nurses willing to precept students, preceptor-faculty communication issues, lack of knowledge by preceptors of curriculum outcomes, and preceptor burn-out (Casey et al., 2008). The DEU also addresses other, more subtle, problems, such as students not feeling welcomed on the preceptor’s unit (Gonda et al., 1999), perception by preceptors of insufficient faculty oversight (Dean et al., 2013), and unclear student, faculty, and preceptor expectations of the clinical experience.

Although nursing students describe the development of psychomotor competencies as a priority for a senior clinical experience, clinicians expect to see higher level clinical judgment, decision-making, prioritizing, and organizational skills in new graduates (Dean et al., 2013; Gonda et al., 1999; Hannon et al., 2012; Jeffries et al., 2013; Moore & Nahigian, 2013). The structure of the DEU model and variety of available experiences for students have attempted to address this issue.

In a DEU framework, colleges contract with clinical agencies to be able to use a unit, specifically designated for clinical experiences for that one academic institution. Nurses on the unit function as mentors for student groups of between two and six at point of care, and supervise students, as they provide direct patient care (Casey, 2008; Dapremont & Lee, 2013; Hannon et al., 2012; Moore &
Nahigian, 2013). While clinical nurses on each unit are responsible for direct supervision and teaching, faculty, who are on the unit while students are there, provide oversight for the student group and facilitate the acquisition of higher level competencies, such as integrating theory and practice, problem-solving, and development of clinical judgment (Casey et al., 2008; Hannon et al., 2012; Moore & Nahigian, 2013). Faculty also act as a resource for the staff and provide support for the nurses who are mentoring the students. An added component to this model is the expectation that students take responsibility for their learning by asking questions of the unit mentors, seeking new experiences, and providing peer support; this may include students self-selecting patients to address their expanding experiences, negotiating with staff for a patient assignment, and participating in collaborative evaluation (Callaghan et al., 2008). In some instances, the clinical agency or the academic institution provides a clinical liaison who is responsible for planning and coordinating the placement, and evaluation of student progress is a collaborative effort among all involved (Casey et al., 2008). The DEU structure has been successful also in a community setting. In this setting, because faculty are not with students directly, as on an acute care unit, ongoing communication between faculty, students, and clinical nurses occurs by phone or texting (Betany & Yarwood, 2010).

Like any academic-practice partnership, intensive pre-planning is essential; this often takes up to one year before implementation. An important component is orientation by faculty of unit nurses, focusing on the change in roles from that of a traditional clinical or precepted experience (Dapremont & Lee, 2013; Dean et al., 2013; Jeffries et al., 2013). Some clinical agencies provide incentives for the DEU nurses, such as lightening their patient assignments (Jeffries et al., 2013).

Research looking at objective outcomes from the DEU experience is scarce; some research has examined student subjective perceptions of the DEU clinical. Students report positive perceptions of the DEU, especially in the areas of being in a supportive environment, role development, increased confidence in their competence, and team interaction (Galuska, 2015). Moore and Nahigian (2013)
conducted a study that looked at how students viewed nurse to student and nurse to nurse collaboration on a DEU, as contrasted with a traditional clinical setting. They found that students perceived significant differences, with students on the DEU perceiving greater collaboration and more accurate communication than those on a traditional unit (Moore & Nahigian, 2013). Mulready-Shick, Flanagan, Banister, Mylott, and Curtin (2013) examined student perceptions of a DEU experience, along with some objective measurement of outcomes (e.g., academic grades, clinical performance evaluation, NCLEX pass rates). Early in the nursing program, students were randomly assigned to a usual clinical group of one faculty to eight students, or a DEU that had ratios of one clinical instructor to two students, along with one faculty member for every six to eight. Students were followed over a time span of two years in the nursing program, through their senior year. Researchers used three assessment measures to obtain data about perceptions of the experience, learning growth, and quality and safety competency development (Mulready-Shick et al., 2013). Results showed that all students reported feeling positive about their experiences, but students in the DEU scored significantly higher, until students reached their senior year, when data showed no significant differences between the groups. Additionally, data showed no differences between the groups on exams, grades, or clinical evaluations. Students in the DEU group reported more instructor feedback, increased feelings of being a contributing member of a team, and improved clinical judgment and decision-making (Mulready-Shick et al., 2013).

The DEU model has distinct advantages for senior students. These include: 1. Availability of multiple patient care situations for students to apply theory to practice, 2. Experiencing an environment where students are welcomed as members of the health care team, 3. Developing in the professional role, 4. Expanded opportunities to learn from fellow students, and 5. Having a more predictable schedule of clinical days (Casey et al., 2008; Dapremont & Lee, 2013; Dean et al., 2013; Galuska, 2015; Gonda et al., 1999; Hannon et al., 2012; Jeffries et al., 2013; Moore & Nahigian, 2013).
There are advantages to both the academic institution and clinical agency as well. The faculty to student ratio can be increased safely because the practicing nurses maintain responsibility for the patient care (Nishioka, Coe, Hanita, & Mosato, 2014), increased faculty presence and familiarity with the unit and nursing staff, more knowledgeable nursing staff about academic goals and student outcomes, and increased opportunity for joint collaborative projects. An added benefit for practicing nurses is that the model enables them to take advantage of faculty knowledge and expertise that could stimulate interest in new approaches to patient care (Haleem, Maretti, Evanina & Gallagher, 2011).

DEU partnerships work particularly well when the partnership occurs in a rural or small city setting, where there are few academic institutions looking for multiple placements. In a large metropolitan area, where multiple academic institutions are looking for clinical placements in acute care agencies, the DEU model does not work as well. In this competitive environment, to have one clinical agency accepting students from only one academic institution, closes potential placements to others (Nishioka et al., 2014). In the DEU model nurse burnout can still be an issue and there is potential that students may be supervised by inexperienced nurses (Dapremont & Lee, 2013; Jeffries et al., 2013).

**Technology and Simulation as Clinical Models**

Technology as a teaching tool is relatively new, but expanding, as computers, simulators, and complex software become available in educational and clinical settings. A small, but increasing, body of evidence demonstrates the feasibility of using simulation to facilitate student achievement of goals necessary for practice. The literature looking at senior nursing clinical models encompasses using various technologies, including simulation, for providing students with a practice experience, either as a stand-alone or as an adjunct to an onsite clinical. In general, simulation experiences can be classified as low fidelity, such as evolving case studies, medium fidelity, which include basic simulators and/or student actors, or high fidelity with complex and realistic human simulators (Shin, Park & Kim, 2015).
Simulated activities have the advantage of providing students with the ability to acquire competencies in a safe environment (Cummings, 2014; Kaplan & Ura, 2010; Shin et al., 2015; Weatherspoon & Wyatt, 2012). While many might think that the focus of simulations is on the development of psychomotor competencies and student self-confidence, simulation activities can enhance other outcomes, such as role socialization, interprofessional communication, patient safety, prioritization, leadership, delegation, and clinical judgment (Cummings, 2014; Kaplan & Ura, 2010; Lowdermilk & Fishel, 1991; Nesler, Hanner, Melburg, & McGowan, 2001; Shin et al., 2015; Weatherspoon & Wyatt, 2012; Williams, French, & Brown, 2009).

Early research on the effective use of simulation for attaining professional goals looked at a variety of models, mostly low or medium fidelity simulations. Lowdermilk and Fishel (1991) found that using computer assisted instruction (CAI) to enhance information-gathering and decision-making competencies was effective for senior nursing students, although not significantly different from students participating in a traditional clinical experience. Nesler and colleagues (2001) found that senior baccalaureate nursing students in distance education programs could be appropriately socialized to the professional nursing role, despite minimal ongoing face-to-face contact with faculty. They also concluded, however, that prior or current experiences working in healthcare greatly influenced socialization to the nurse’s role (Nesler et al., 2001). Williams and colleagues (2009) explored whether DVD simulations teaching interprofessional teamwork and collaboration could replace onsite clinical placements. Researchers used 11 simulations developed by university faculty from several different health professions, which included nursing, occupational and physical therapy. Simulations focused on frequently seen patient care problems and intervention in a variety of healthcare settings. Using quantitative and qualitative analyses, researchers found that students thought the simulations were realistic and relevant and they were able to reflect well on the concepts presented. Students believed
that the simulations could substitute for elements of a face-to-face clinical experience, but not an entire clinical placement (Williams et al., 2009).

In more recent research of simulation, researchers have investigated whether computer-based simulation could increase acquisition of clinical judgment (Weatherspoon & Wyatt, 2012), or whether scenario-based high fidelity simulation experiences could effectively facilitate error reduction through a focus on QSEN competencies, such as safety, electronic documentation, and interprofessional communication (Cummings, 2014). Weatherspoon and Wyatt (2012) conducted an experimental study to see if using computer-based interactive games to solve clinical problems could increase senior students’ clinical judgment, including triaging and prioritization. Comparing two groups of students, one of which used the simulated case studies, and the other the same cases presented in paper form, researchers measured accuracy of students’ abilities to triage and assign patients. In this pre-posttest format, both groups of students improved their accuracy, but the students using the simulated case studies improved at a significantly higher level (Weatherspoon & Wyatt, 2012).

Cummings (2014) used an evaluation rubric to assess whether students who participated in a scenario-based simulation experience adequately provided patient-centered physical care, including medication administration, hand hygiene, and IV insertion; conducted a thorough assessment; correctly prioritized patient needs; and effectively communicated with another healthcare provider. Eighty senior students participated individually in one of a variety of potential simulations, followed by debriefing. Findings from this research highlighted how unprepared this group of students was to provide safe patient care, especially related to medication administration, interpretation of laboratory values, incorrect reading of physician orders, and inadequate assessments (Cummings, 2014). This research provides a strong case for using high-fidelity simulation as a clinical component for senior level nursing students.
In a unique academic-practice partnership, Liaw, Palham, Chan, Wong, and Lim (2015) described a faculty-alumni collaboration in developing a simulated clinical experience for senior nursing students. The simulation of a real-world unit setting, using a combination of high fidelity simulators and live actors, provided students with a “stepping stone” simulated clinical experience. Students spent a total of 15 hours in the simulation lab working in groups of six and performing different nursing roles in a variety of simulated experiences. The developers described the expected outcomes from the experience as being able to provide holistic and comprehensive patient care, describe how time management affects workload, understand the importance of accountability and responsibility, appreciate the value of teamwork, participate in reflective practice, and improve technical competencies (Liaw et al., 2015). Follow-up discussion with 22 students in several focus groups documented that students believed that the simulation assisted them with knowing what to expect in the nurse’s role, improving communication, managing challenging patients, decision-making, error reduction, and providing holistic care (Liaw et al., 2015). Researchers believed that this experience should be an essential precursor to an onsite clinical experience.

Kaplan and Ura (2010) used three simultaneous simulators to assess prioritization and decision-making competencies in 97 senior nursing students who were divided into small groups. In each simulation period, two students, one leader and one “orientee”, cared for three simulated patients, each of which was at a different stage of recovery and at least one of whose condition would deteriorate during the experience. Post-simulation debriefing focused on the students’ self-confidence, ability to prioritize and delegate, and teamwork. Kaplan and Ura reported that most students performed as expected during the simulation, and a follow-up survey revealed that students believed they gained self-confidence from the experience. However, similar to Cummings’ (2010) findings, faculty identified critical areas that needed to be addressed. These included incomplete assessments and confusing information about the patients’ conditions when communicating with others.
A newly innovative, but expanding approach, to simulation in nursing education is virtual reality simulation. Virtual reality is a simulation experience where the learner is completely immersed in an unfolding clinical scenario. Unlike other computerized simulations, virtual reality is three dimensional, unfolding in real time, interactive, and provides feedback and opportunity for objective performance evaluation (Jenson & Forsyth, 2012; Kilmon, Brown, Ghosh, & Mikitiuk, 2010). Ancillary equipment, sometimes referred to as haptics, provides a sensory experience that accompanies the interaction, so that the student can actually feel or hear results of actions. For example, a haptic arm can be used for starting an IV, in which the student actually touches the “skin”, can palpate for veins, and experience the feel of the insertion itself. Because it is connected to the computer, the student (and faculty) receive immediate feedback on whether the student executed the steps correctly (Jenson & Forsyth, 2012).

Nicely and Farra (2012) describe a situation where students participate virtually in a disaster response scenario. The students worked with students in the college’s media studies department to develop the scenario and put it into virtual reality format. Kilmon and colleagues (2010) describe developing a virtual code cart for practicing responses to a code. Virtual reality has the potential for faculty evaluation of skill development and advanced responses to clinical situations. Using it as a substantive piece of a senior nursing experience can address issues, such as increasing patient acuity levels, which cause students anxiety in the clinical setting, decreased availability of faculty and clinical sites and increasing medical error due to the hectic nature of a real world setting (Jenson & Forsyth, 2012).

Simulation models have the distinct advantages of facilitating hands-on patient care in a safe setting, allowing for reflection on performance of expected competencies, providing opportunities for practicing psychomotor skills, and, in some instances, team collaboration. Although no evidence has recommended substituting simulation for a clinical experience, simulation can be used effectively to assist students to achieve outcomes and, in doing so, reduce the time needed for onsite clinical experiences. Disadvantages to simulation include cost; appropriate simulators, equipment, and
laboratory setting; need for faculty development to write and execute the simulation scenarios; and time-intensiveness. Despite the small body of research looking at higher level outcomes from simulation experiences, Shin and colleagues (2015), in a meta-analysis of the effectiveness of simulation, state that evidence supports greater value for acquisition of psychomotor competencies and self-confidence, than for higher level outcomes. Shin and colleagues recommend additional research into the appropriate use of simulation, with objective measurement and evaluation of student performance.

Other Innovative Strategies and Models

Peer assisted learning. Peer assisted learning refers to a model where experienced students work with and mentor less experienced students on a clinical unit, and are supervised by the clinical faculty assigned to the less experienced students (Daley, Menke, Kirkpatrick, & Sheets, 2008; Isaacson & Stacy, 2004; Zentz, Kurtz, & Alverson, 2014). Depending on the clinical agency and the goals for the experience, senior to novice student ratios vary from 1 to 1 to 2 to 8. In general, after an orientation by faculty of senior role responsibilities, seniors work with the less experienced students on planning and providing direct care for patients and families. This includes, but is not limited to, assisting students with psychomotor skills, organization, prioritizing, communicating with patients and families, performing assessments, interpretation of physical findings, and documentation of care (Daley et al., 2008; Isaacson & Stacy, 2004; Zentz et al., 2014).

Isaacson and Stacy (2004) described a specific model where senior students act as nurse managers and junior level students act as unit staff. The seniors are responsible for making patient assignments in collaboration with the agency professionals, communicating essential patient care information, making patient care decisions, acting as a resource for the junior students, conducting clinical conferences and in-service programs, and participating in agency quality improvement projects.
Guided by faculty, students were encouraged to incorporate different types of leadership styles when working with the novice students (Isaacson & Stacy, 2004).

The peer assisted model has several advantages, not the least of which are conservation of clinical sites and faculty. Senior students reported growth in their professional role as a nurse; improvement in teaching skills; reinforcement of psychomotor competencies; achievement of leadership, delegation, organization, time management, and communication outcomes; decreased focus on lower level tasks; and feelings of accomplishment at providing reassurance to others (Daley et al., 2008; Isaacson & Stacy, 2004; Zentz et al., 2014). Novice students described decreased anxiety, increased confidence in developing psychomotor skills, and acquiring a more holistic view of patient care. They reported benefitting from senior students’ accessibility for answering questions and providing support, and willingness to share personal experiences of progressing through the nursing program (Zentz et al., 2014).

Hood, Cant, Leech, Baulch, and Gilbee (2014) piloted an interdisciplinary experience where senior nursing and senior medical students functioned to provide care to groups of patients in a student-led acute rehabilitation unit. The students were supported, when patient care required it, by students from other allied health programs, such as physical and occupational therapies. Supervised by a nurse facilitator and a consulting physician, a team of two nursing and two medical students provided comprehensive care for a group of four to six patients over a 10-day period of time. The teams assumed total responsibility for patient care, including physical management, making appropriate referrals, conducting patient and family meetings, and collaborative decision-making (Hood et al., 2014). Follow-up qualitative and quantitative data through focus groups and a satisfaction survey suggested that students believed they achieved such outcomes as interprofessional collaboration, teamwork, nursing role acquisition, autonomy in practice, and critical thinking. An important additional outcome
demonstrated by participants was an increased understanding of their role and the roles of their professional peers in providing comprehensive patient care (Hood et al., 2014).

**Integrated models.** Several clinical models found in the literature incorporate more than one approach for the senior capstone experience and, in some circumstances, for clinical experiences throughout the nursing curriculum. Fortier and colleagues (2015), working on the premise that nursing of the future will occur mainly in the primary care or outpatient setting, illustrated various innovative academic-community partnerships. They reported on activities undertaken as part of the New Jersey Nursing Initiative, which is designed to re-shape nursing education through emphasis on expanded roles in community and population focused care, with a particular emphasis on coordination and management of patient care transitions. Intensive faculty development programs prepared faculty to re-design curricula and clinical experiences to educate students in the changing roles of the nurse. The authors delineate innovative clinical teaching strategies in the following areas: Communication, Patient-Centered Care, Advocacy, and Continuum of Care. These strategies include role-playing, use of standardized patients, peer-to-peer teaching, simulation, service learning projects, computer-based learning, and virtual communities, among others (Fortier et al., 2015).

Recognizing several challenges in the contemporary provision of clinical education to nursing students, Niederhauser and others (2012) described a large academic-practice initiative to redesign clinical nursing experiences and opportunities. At a summit meeting of stakeholders, which included nurses, faculty, and nurse leaders, challenges to effective clinical education were identified. These included reluctance on the part of staff nurses to permit students to provide certain aspects of care because of safety concerns, decreasing availability of practice sites, increased requirements for faculty, student access to electronic documentation, variable shift hours, balancing staff productivity with student learning demands, and determining the importance of technical orientation versus clinical judgment (Niederhauser et al., 2012). Soliciting redesign proposals from academic-practice teams, the
clinical redesign team chose seven pilot projects to be implemented; many were directed at reducing
cost, conserving faculty time, and increasing clinical site capacity, as well as improving student
outcomes. They included such projects as virtual reality experiences using avatars, preparing clinical
nurses to participate in student education, increasing simulation experiences as allocated clinical time,
and a variety of specialized partnerships. Each pilot project staff evaluated the effectiveness of its
project on objective program or student outcomes. Evaluation addressed such outcomes as decreasing
costs, conserving faculty, and improved student learning (Niederhauser et al., 2012).

Diefenbeck, Plowfield, and Herman (2006) describe a nurse residency model that completely
changed the way their nursing program provides clinical time for students. Desiring to have students
socialized in the nursing role from the beginning of their nursing sequence, as well as increasing
individual student responsibility and accountability for learning, the faculty developed a progressively
more experiential and independent clinical sequence, beginning with the first nursing course. The model
includes four basic components, all of which count toward total clinical time (Diefenbeck et al., 2006):

1. Simulation – The simulation lab is organized to mimic a hospital unit and offers extended
   hours for students to learn and practice skills independently, with a lab supervisor available
   for consult. Throughout the years in the program, students must take responsibility for
   acquiring the competencies appropriate for their particular level of experience. Prior to the
   senior year clinical immersion, students must demonstrate, through a variety of simulated
   experiences, a required set of technical skills and competencies.

2. Remotely supervised “field experiences” – Replacing the traditional faculty-supervised, unit-
   based clinical experience, field experiences do not necessarily occur in an acute care setting
   (although two semesters of acute care medical-surgical nursing are required). Field
   experiences happen in a variety of settings where designated agency professionals supervise
students directly and faculty oversee the experience remotely. Students take responsibility for appropriately completing the requirements and keep reflective journals of their experiences.

3. Junior year work requirement – students arrange for placement in an approved clinical agency of their choice where they do 80 hours of supervised clinical work, similar to an unpaid extern. They have a contract with the agency and receive credit for the work experience.

4. Senior year clinical immersion – During the first semester, students spend 24 hours a week over a 3-day period to gain experience in a variety of clinical areas, including specialties. Faculty supervise the experience through intensive seminars. During the final semester, seniors work independently with a preceptor.

Diefenbeck and colleagues (2006) believe that this clinical model increases self-directed learning by students and socialization to the profession from the outset, requires responsibility and accountability, provides for more varied clinical experiences, and increases total clinical time while using faculty in a more effective manner.

In a similar manner to Diefenbeck and colleagues’ complete change of approach to curriculum, Giddens and others (2008) presented a wholly redesigned nursing program, which has altered both didactic and clinical approaches to nursing education. An impetus for this redesign was course content duplication among various tracks leading to the baccalaureate degree and the need to conserve faculty time. Two major approaches were used to address these issues: 1. Change to a concept-based curriculum at all levels, and 2. Consolidation of courses formerly allocated to each track, such that some nursing courses would be shared by all students, regardless of track (Giddens et al., 2008). Concepts in the curriculum combined those focused on the wellness-illness continuum (e.g., systems based, such as
fluid balance, and/or relationship based, such as various aspects of interpersonal interaction) with professional nursing role concepts (e.g., caring, leadership, collaboration, critical thinking). The overall intent of the curriculum change was to teach students to apply concepts when caring for people of various ages across the lifespan, within the context of multiple settings for care, and to modes of nursing practice (e.g., individual, team, organizational, healthcare system) (Geddens et al., 2008).

The curriculum change described by Giddens and colleagues (2008) presented a challenge to plan clinical experiences that would assist students to synthesize theory and practice, rather than being task-focused. Clinical experiences occurred in primary, secondary, and tertiary settings, and students were assigned to a preceptor beginning with the first clinical experience. A unique aspect to these clinical experiences was the creation of partnerships between inpatient and community agencies, such that a student would be in both settings over the course of the clinical experience, thus reinforcing the same concepts in different ways. Students also benefitted from a clinical “intensive” where they chose a specialty area from any of six choices, depending on what they perceived as their clinical interests (Giddens et al., 2008). Finally, both high fidelity simulation and weekly use of a faculty-developed virtual community (The Neighborhood) augmented the clinical experiences. This virtual community contains a variety of characters, households, and community resources, all of which interact through stories and case studies about care issues students may encounter in their clinical settings. The Neighborhood is available to nursing education programs through Pearson.

Conclusions

Information provided in this review substantiates the premise that there are many effective approaches to clinical experiences for senior nursing students besides the one-to-one preceptorship model. Although there is very little research available that documents achievement of objective
outcomes from any of these models, irrespective of the model in which they participated, students generally report positive experiences.

It is critically important for nurse faculty, in collaboration with professional nurses at point of care, to identify which outcomes need to be achieved within this complex and changing healthcare system and how they can be objectively measured. Potential organizational outcomes might include decreased cost, more effective use of faculty time, and expanded potential for clinical placement sites. For students, certainly it is becoming more apparent that acquisition of technical competencies has become a less significant part of what is required for effective practice. Student outcomes that are more difficult to measure, but nonetheless essentially important, consist of clinical judgment; interprofessional teamwork and collaboration; prioritization, effective communication; cultural sensitivity; leadership and delegation; professionalism; and provision of safe, high quality, patient and population-centered care. Any introduction of a new model of clinical practice needs to be accompanied with a plan and strategy for measuring success in achieving outcomes.

The Robert Wood Johnson Foundation, in 2014, published a report called *Innovations in Clinical Nursing Education: Retooling the Old Model for a 21st Century Workforce*. That report included descriptions of many of the models outlined in this report, and recommended inclusion in clinical education of simulation, interprofessional team experiences, use of dedicated education units, postgraduate nurse residency programs, and concept-based curricula. Authors state that State Boards of Nursing across the United States differ in their regulations for number of clinical hours, percent of simulation experiences considered to be clinical time, and student to preceptor ratios. This provides an opportunity to closely examine some of the integrated models presented here. It is time for nurse educators to closely examine the changes in desired outcomes for nursing graduates, and realize, perhaps, that one model may not achieve all.
References


