Clinical research nurses are essential in the coordination of clinical trials and the management of research participants. Without a stable, knowledgeable research nurse workforce, the conduct of research is affected. A research nurse residency is a novel approach to preparing new graduate nurses for the oncology research nurse role. This article will describe the development and content of the research nurse residency and how this approach is being used to address a need for clinical research nurses to support burgeoning clinical trials at a National Cancer Institute–designated comprehensive cancer center.

AT A GLANCE
- Clinical research nurses play a vital role in the conduct of clinical trials.
- Training of clinical research nurses, as well as the evaluation and revision of training to ensure competency, is variable.
- A collaborative 12-month research nurse residency for new graduate nurses was created to help alleviate the issues of recruitment and retention of clinical research nurses.

Clinical research nursing is a specialty nursing practice recognized by the American Nurses Association that focuses on the care of research participants and the management of clinical trials. Although the clinical research nurse (CRN) is an integral member of the research team and the past 20 years have seen a growth in the number of nurses working as CRNs (Spilsbury et al., 2008), institutions have done little in the way of providing infrastructure for training CRNs. Therefore, CRNs often lack formal educational preparation for their role (Jones, Wilson, Carter, & Jester, 2009). This can result in consequences that affect patient safety or jeopardize study integrity (Brandt et al., 2011). In addition, the lack of an effective orientation program also may contribute to turnover (Park & Jones, 2010).

At the University of Texas MD Anderson Cancer Center, a National Cancer Institute–designated comprehensive cancer center in Houston, CRNs are integral to the conduct of clinical research. In 2016, more than 1,600 clinical trials were conducted in 45 departments within the institution, and more than 8,600 patients were registered in therapeutic studies. With this volume of trials and research participants, recruiting and retaining a stable CRN workforce is vital.

In an effort to alleviate some of these issues, the research nurse residency (RNR) was developed and implemented in 2016. A multidisciplinary collaborative endeavor, the RNR is a novel approach to training new graduate nurses specifically for oncology research nurse positions, a process that has not yet been defined in the literature and represents a departure from traditional practice at this institution. This article will describe the development and content of the RNR and how this approach is being used to address a need for CRNs to support burgeoning clinical trials at this institution.

Background
Several factors contribute to the difficulty of recruitment and retention of the CRN within the institution. Despite the increase in the number and complexity of clinical trials, clinical research nursing remains a relatively unknown nursing specialty (Schmotzer & Ness, 2015). Academic nursing programs include varying degrees of research courses; however, the emphasis is on evidence-based practice nursing and nursing research, not the role of a nurse in clinical trials management (American Association of Colleges of Nursing, 2008). In addition, the expansion of clinical research trials has contributed to rising demand (Schmotzer & Ness, 2015), generating the need to develop a pipeline of new CRNs to keep up with the ever-growing number of trials in the institution.

Common challenges to staff retention identified in the general nursing literature include insufficient staffing levels, long
work shifts, a punitive organizational culture, and inadequate investments in the orientation and training of new nurses (Carnevale, Smith, & Gulish, 2015). These factors affect retention of CRNs as well. According to the University of Texas MD Anderson Cancer Center retention data, since 2014, the average retention rate at this institution for CRNs at two years is 50% (range = 31%–80%). In addition to making building a solid workforce difficult, high turnover negatively affects financial outcomes (Fiedler, Read, Lane, Hicks, & Jegier, 2014). Nurse residency programs have been associated with improved retention rates (Fiedler et al., 2014; Manzano, Rivera, & Sullivan, 2013). Therefore, offering a new graduate research nurse program to offset the shortage and enhance retention enables the institution to cultivate a robust, experienced CRN workforce.

**Leadership and Collaboration**

Recognizing that the growing challenge of recruiting and retaining CRNs was affecting the ability to conduct clinical trials, interprofessional executive leadership support and involvement were sought. An interprofessional team of healthcare leaders worked collaboratively to address this concern and identify evidence-based solutions. Early identification of funding for the program was integral to success and was supported through the provost office, which is responsible for all institutional research, as well as the Division of Nursing. The cost per nurse in the RNR is based on the resident’s time and totals about $7,000. The first month of the orientation period was sponsored by the Division of Nursing, after which the remaining cost of training was assumed by the departments into which the CRNs were hired. A high-level review of peer-reviewed literature produced no evidence for a program of this type; therefore, the program was modeled after the institution’s existing clinical nurse residency program (CNRP) and built on the existing orientation for CRNs. A work group of nurses from diverse institutional roles reviewed and refined the research nurse orientation and research-specific education before developing the RNR content, which was then reviewed and approved by key stakeholders.

**Framework**

The RNR is modeled after the CNRP described by Keller, Meekins, and Summers (2006). The CNRP was implemented in 2005 and focuses on supporting new nurses to transition into professional nursing during a yearlong period. The CNRP curriculum aligns with the National Council of State Boards of Nursing (n.d.) Transition to Practice model and the Commission for Collegiate Nursing Education (2015) Standards for Accreditation of Entry-to-Practice Nurse Residency Programs. The CNRP curriculum has been instrumental in enhancing professional confidence among new graduates and enhancing retention (Cline, La Frentz, Fellman, Summers, & Brassil, 2017). The RNR participants attend classes for research nurse–specific topics, along with participating in selected classes and activities of the CNRP.

Historically, the CRN position required two years of experience in clinical practice as a minimum qualification for the role. To enable graduate nurses to apply for the program, the current CRN position description was modified, and a specific RNR position description was created. The RNR position description reduced the experience requirement to less than one year and included not only the functional role of the CRN, but also the requirement to attend residency classes for role development. In addition, revisions were made to the research nurse position description, reducing the experience requirement to one year of nursing experience, which has resulted in an increased pool of eligible candidates for CRN positions.

**Structure and Design**

A single application posting for the RNR enables all candidates to apply to one site, provides additional information about the program, and contains a link to a video illustrating the role of the research nurse. The recruiter for this program has been educated about the program details and encouraged to discuss the differences of the role of a research nurse versus a clinical nurse with interested applicants. The recruiter emphasizes that the CRN is an autonomous role that requires keen awareness and assessment of the clinical research nurse workforce.

"Offering a new graduate research nurse program enables the institution to cultivate a robust, experienced clinical research nurse workforce."
FIGURE 1. THE UNIVERSITY OF TEXAS MD ANDERSON CANCER CENTER RESEARCH NURSE RESIDENCY ORIENTATION AND PATHWAY

FOUR-WEEK ORIENTATION
- General nursing orientation (two weeks)
- Human subjects protection training (four online modules)
- Clinical research training
  - Three-day instructor-led course
  - Basic principles and practices of clinical research and study management
  - Role-specific training
  - Protocol-specific training
  - Exercises tailored to each protocol
- Additional learning experiences
  - Instructor-led classes on topics related to clinical research and study management
  - Observational rotations
    - Inpatient, outpatient, research nurse
  - Tours

12-MONTH RESIDENCY
- Monthly classes (one to two days per month)
- Research-specific training
  - Simulation
  - Advanced training of research topics
    - Informed consent
    - Research regulations
- Clinical residency classes
  - Transition to practice
  - Quality and safety
  - Teamwork and systems thinking
  - Communication
  - Conflict management
  - End of life
- Socialization activities
  - Clinical nursing residents
  - Other research nurse residency cohorts

ADDITIONAL SUPPORT
- Assigned departmental preceptor
- Dedicated research educator
  - Monthly meetings with resident and preceptor to assess progress
- Online companion site
  - Discussion board
  - Announcements
  - Additional learning materials

of candidates during a short time period. After all the interviews, the team works together to select the candidate or candidates to offer for their department.

Curriculum
Onboarding practice for a new CRN not participating in the RNR consists of two weeks of general RN orientation; a three-day, instructor-led, role-specific clinical research training course; and online human subjects protection training modules. The RNR curriculum builds on this existing CRN onboarding process.

The RNR curriculum applies a three-pronged approach and is designed to provide the resident a foundation in clinical research nursing, as well as oncology nursing, and coursework that promotes transition to practice for new nurses. The program includes an enhanced four-week orientation followed by one to two monthly residency class days administered during a 12-month period. The four-week RNR orientation supplements the current CRN orientation with additional clinical research content and experiential learning activities. A high-level overview of each of the three areas is displayed in Figure 1. After the orientation, the RNR participant is teamed with an experienced clinical research educator and an interprofessional team to assess progress.

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During this time, the RNR participant at MD Anderson is assigned a preceptor to assess progress for the new CRN participant. After the orientation, the RNR participant is teamed with an experienced clinical research educator and an interprofessional team to assess progress.

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In addition to the research nurse-specific orientation curriculum, the RNR participants participate in the CNRP classes, which focus on clinical leadership skills, resources, support, and socialization (Cline et al., 2017). The RNR participants receive additional support throughout the residency by way of monthly meetings with a dedicated clinical research educator and an interactive online course management system.

Metrics
Outcomes are measured using the Casey-Fink Graduate Nurse Experience Survey (Casey, Fink, Krugman, & Propst, 2004), which will allow comparison with the institution’s CNRP data. Supplemental questions based on recognized research nurse competencies (Oncology Nursing Society, 2016) have been added to capture outcomes specific to the research nurse role. In addition, retention data will be collected and compared with current retention rates.

RNR development was initiated in May 2016, and the first cohort of four participants started in October 2016. In its first year, the RNR has 13 participants in the program and 7 to begin in October. Initial feedback from the RNR participants and the hiring departments has been overwhelmingly positive, with many departments eager to bring on additional residents. An unexpected benefit has been the improved communication and collaboration between the clinical research departments. The aim is to expand the program, increasing the number of participants per cohort, and offer the RNR three times a year around key academic graduation times.

Conclusion
CRNs are crucial to the successful management of clinical trials, and meeting the challenges of recruitment, training, and retention is essential for the institutional research endeavor (Spilsbury et al., 2008). The collaborative RNR is a unique approach to preparing graduate nurses for the role of CRN and providing a sustainable educational infrastructure in hopes of building and retaining a knowledgeable and experienced workforce of CRNs.

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CJON.ONS.ORG VOLUME 21, NUMBER 5 CLINICAL JOURNAL OF ONCOLOGY NURSING 635
The authors take full responsibility for this content and did not receive honoraria or disclose any relevant financial relationships.

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