RAPID EVIDENCE ASSESSMENT (REA): TRANSITION OF STUDENTS TO CLINICIANS

for the

ACT PUBLIC HEALTH SYSTEM

January 2021

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BACKGROUND

Workplace Research Associates was commissioned by Ms Jodie Junk-Gibson, Executive Branch Manager, Culture Review Implementation Branch, ACT Health Directorate (the Directorate), to conduct a Rapid Evidence Assessment (REA) on the topic of 'Transition of Students to Clinicians'. The REA was undertaken to understand what is known in the literature about the effective transition of students to clinicians in a healthcare setting. This REA presents an overview of the best available evidence.

METHODOLOGY

In undertaking the REA, Workplace Research utilised the methodology developed by the Centre for Evidence Based Management (CEBMa)[1]. According to these guidelines, an REA entails the following steps:

1. Background: What is the context of the REA question?

2. Formulating the REA question: What does the REA answer?

3. Defining inclusion criteria: Which studies will be taken into account?

4. Search strategy: How should the studies be sought?

5. Study selection: How should the studies be selected?

6. Data extraction: What information should be extracted?

7. Critical appraisal: How will the quality of the studies be judged?

8. Results: What were the findings?

9. Synthesis: What does it all mean?

10. Conclusion

11. Limitations

12. Implications of the findings for practice.

The research questions outlined above were grouped together in performing the REA, with a view to answering the overall research topic of 'The Transition of Students to Clinicians'.

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[1] These guidelines are available at: https://cebma.org/resources-and-tools/

RAPID EVIDENCE ASSESSMENT

STEP 1: BACKGROUND

This Rapid Evidence Assessment was conducted to understand what is known in the academic literature about the determinants of a successful transition of students to clinicians. The Directorate has a significant number of staff transitioning from being students to practising clinicians in a range of health professions. Gaining a greater understanding of the factors that can contribute to a more successful transition will benefit students, clinicians and health professionals, administrative and support staff, as well as patients and members of the community.

STEP 2: REA QUESTION

Main Question

The main question this REA addresses is:

What is known in the academic literature about the determinants of a successful transition of students to clinicians?

Supplementary Questions

In investigating the main question above, the REA also aims to address the following supplementary questions:

- How can the Directorate enhance the student and new graduates experience, ensuring that they feel safe within the Health system?

- What practice and research are available on successful transition programs across disciplines, including what the data indicate and what initiatives have been explored?

- What elements have been researched to support effective transition programs?

- What are the experiences of health professionals' transition to work and what are the implications for health services' desire to support this transition?

- What works in supporting the successful transition to the workforce for new interdisciplinary graduate health professionals?

- What models are most effective in supporting the transition of interdisciplinary graduates into the health system?

- What means and modes of communication have been used to support the transition?

- What are the support mechanisms, how are they structured, and are there interdisciplinary opportunities for learning once in the system?

- How have other health services / programs supported and facilitated the transition of health graduates following epidemics, wars and natural disasters, to restabilise and refocus on early career health professionals?

WORKPLACE RESEARCH

STEP 3: INCLUSION CRITERIA

The following inclusion and exclusion criteria were applied when reviewing articles to be incorporated in the REA:

Inclusion Criteria

1. **Date:** Published in the period 2010 to 2021

2. **Language:** Articles in English

3. **Type of studies:** Empirical, quantitative and qualitative studies

4. **Study design:** Meta-analyses, reviews, controlled studies, case studies

5. **Measurement:** Studies in which the effect of interventions on outcomes was measured

6. **Outcome:** Student / new graduate outcomes

7. **Context:** Healthcare professions and organisations.

Exclusion Criteria

1. Studies that were not empirical or peer-reviewed

2. Studies examining the transition of students to professionals in other non-health contexts.

STEP 4: SEARCH STRATEGY

The following databases were used to identify studies: ABI/INFORM Global and PsycINFO. In addition, PubMed was also consulted given that the REA was specifically looking at the healthcare context. Google Scholar and the Australian National University Library databases were also searched.

The following generic search filters were applied during the search:

3. Scholarly journals, peer-reviewed

4. Published in the period 2010 to 2021

5. Articles in English

A search was conducted using combinations of different search terms, such as 'student(s)', 'clinician(s)', and 'transition'. In addition, the references listed in the studies retrieved were screened in order to identify additional articles for possible inclusion in the REA.

STEP 5: STUDY SELECTION

The titles and abstracts of the identified studies were screened for their relevance to the REA questions. Many articles were screened out at this stage, and duplicate publications were removed. Studies were retained based on the full text of the article according to the inclusion and exclusion criteria described above. Fourteen studies were retained for inclusion. An overview of the selection process is provided in Attachment A.

STEP 6: DATA EXTRACTION

Data extraction involved the collation of the results and other information from the studies included. For each study, information relevant to the review question was extracted, such as authors and year of publication, sector / population, design and sample size, main findings and limitations. A summary can be found in Attachment B.

STEP 7: CRITICAL APPRAISAL

The classification system of Shadish, Cook and Campbell (2002), and Petticrew and Roberts (2006)[2] was used to evaluate the methodological appropriateness of the research design of the studies included in the review. This system utilises six levels of appropriateness (labelled from AA to E) and can be found in Attachment C.

STEP 8: RESULTS

Research from around the world, including the United States, Europe, and Australia, was reviewed as part of the REA investigating factors that contribute to the successful transition from student to professional in a healthcare setting. The articles reviewed were both quantitative and qualitative in nature, and include the following designs: systematic literature review, survey, case study, interview and focus groups. First, findings from the research that discuss challenges that graduate healthcare providers face is presented, followed by a discussion of factors that contribute to a successful transition from student to clinician.

CHALLENGES FACED BY NEW GRADUATES

New graduate students in healthcare professions face a range of challenges. In a stressful, high-pressure, and ever-changing healthcare environment, particularly during the recent COVID-19 pandemic, the demand for adaptable and effective healthcare providers is high. In addition, organisations are under increased pressure to operate in a more efficient manner. Therefore, there is a high expectation that students are able to 'hit the ground running' once they graduate and are employed. According to Hofler and Thomas (2016) and others, challenges faced by new graduates include the following:

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[2] As per the CEBMa Guidelines

- Increasing number of patients with complex / chronic conditions and multiple comorbidities

- Ageing patient population

- Lack of access to experienced mentors and preceptors

- Generational diversity in the workforce

- Performance anxiety

- Bullying and harassment

- Stress and fatigue

- Dealing with difficult patients and their families

- Working in an inter-professional team

- Increasing workload and working hours

- Declining resources

- Lack of upward mobility opportunities

- Lack of adequate supervisory support.

FACTORS THAT CONTRIBUTE TO A SUCCESSFUL TRANSITION

1) Student to Clinician Transition Programs

Student to clinician transition programs, if designed appropriately, have been shown to result in a range of benefits (e.g. Goldberg & Insel, 2013; Min et al., 2014). According to Gordon and colleagues (2014)[3], the following principles relating to the design, implementation and evaluation of transition programs should be applied:

Program Design:

1. The inception and design of the transition program should involve all relevant key stakeholders e.g. primary health care organisations and medical and nursing professional organisations

2. A needs assessment engaging key stakeholders should inform the design, implementation and evaluation of the program

3. The program should be designed as a structured program to promote consistency in the education and support provided

4. The design of key program elements should incorporate existing professional standards and frameworks e.g. competency standards

5. *The educational component of the program should focus on the development of entry level skills as a primary healthcare worker and adopt a mentorship / preceptorship model to ensure adequate supervision and support*

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[3] See pages 4-5

6. *Consideration should be given to flexible / online delivery modes as these can be managed with full-time work commitments and research has shown that online education can encourage access and program retention (Ares, 2014).*

Program Implementation:

7. A pilot evaluation should be conducted to test the feasibility, acceptability and scalability of the program

8. A competitive but transparent process should be developed to support the recruitment of new graduates to the program

9. A rigorous selection process should be developed for engaging suitable clinicians into the role of mentor / preceptor

10. Financial and other incentives should be investigated that could be used to promote engagement with the program by key stakeholders.

Program Evaluation:

11. Current and future roles of healthcare providers, and therefore expected changes in their education, skill development, supervision and support needs, should be captured in quality assurance mechanisms associated with ongoing program development and evaluation

12. Key performance indicators and outcomes of interest associated with the program should be developed collaboratively with involvement from key stakeholders and should have a specific focus on the contribution of the transition program in developing a skilled and sustainable clinical workforce

13. A comprehensive evaluation that investigates the efficacy, effectiveness and cost-effectiveness of the program should be undertaken, with the results distributed to interested parties.

2) Role Modelling

A range of sources reviewed argued that effective role modelling and supervision is integral to the successful transition from student to clinician (e.g. Perry et al., 2018). This may take the form of mentorship or preceptorship, with both resulting in a range of benefits. Here, we distinguish between a mentor and a preceptor. A mentor is concerned with the development of a more long term relationship with a student that focuses on their professional development and growth. In comparison, a preceptor engages in more short-term clinical teaching and instruction, with a focus on orientation and role socialisation with the aim of building competence and confidence (Gordon et al., 2014, p. 5).

Preceptors:

The literature highlights the importance of the quality of the preceptorship received by new graduate clinicians. The preceptor role encompasses the provision of support as well as assisting the graduate to identify specific learning needs and opportunities, where these can be met, and can assist in developing the graduate's skills, knowledge, confidence and clinical competence (Aggar et al., 2017). The confidence of new graduates may be negatively affected by inexperienced or poorly motivated preceptors. Therefore, it is important that selection criteria are developed for engaging experienced and motivated clinical staff into the role of a preceptor, ensuring that they are also provided with sufficient on-going education and training, as well as being provided with support and feedback themselves (Gordon et al., 2014). Preceptorship can also be viewed as a valuable professional development opportunity for experienced clinicians and should be encouraged (Aggar et al., 2017).

Mentoring Programs:

Mentoring programs have been shown to increase new graduates' intention to stay, retention rates, overall competency and readiness to practice (Ares, 2014). However, for new graduates to achieve competency, confidence and autonomy, the organisation requires a structured approach to developing mentors (Hofler & Thomas, 2016). In addition, mentor interactions with students can be enhanced with purposeful and structured activities e.g. social events / attending professional meetings or conferences etc.

Quality of Supervision:

Experienced clinicians have been shown to play an important role in the development of students, assisting in the transition from classroom to practice (Blitz et al., 2019). Students often model the behaviour of their supervisors, and therefore, ongoing professional development by the supervisor is required. The most effective role models displayed the following: they include and respect students, model high quality patient care, follow best practice and evidence-based guidelines, are approachable and successfully instil confidence in their students (Baldwin et al., 2014). A close supervisory relationship that provides psychological safety is particularly important during times of change and uncertainty, for example, following epidemics etc.

In addition, according to Kaihlanen and colleagues (2017), a trustful supervisory relationship was shown to result in a number of benefits. For example, it facilitated the students' ability to collaborate and communicate with patients and team members, work independently, take responsibility, adapt to the team / clinical unit, and ensured opportunities to observe and achieve results. Students reported that they valued the opportunity to discuss a range of issues in their supervisory relationships, and emphasised that supervisors should be matched with students' personality and learning style where possible.

Student-Supervisor Ratio:

There are mixed findings concerning the optimal student-supervisor ratio. The advantages of one-to-one supervision include the opportunity for supervisors to acquire a deep level of knowledge about the student and be able to give consistent feedback. However, having multiple supervisors provided students with opportunities to see different practice styles. Students who experienced both one-to-one relationships and working with multiple supervisors stated that both models complemented each other and were equally as important in assisting their transition from student to clinician, and therefore, a combination of both is recommended (Kaihlanen et al., 2017).

3) Ongoing Education and Learning

Due to healthcare reform initiatives and increased complexities within patient populations, new graduates must be able to synthesise evidence-based information using critical thinking skills. This often requires ongoing training and education, and in some cases, the attainment of advanced degrees (Hofler & Thomas, 2016).

Advanced degrees and ongoing education have been associated with the following:

- Effective critical thinking skills

- Ability to implement research findings

- Improved leadership abilities

- Enhanced understanding of changes in the healthcare landscape

- Understanding of the importance of quality care

- Understanding of one's role in the continuum of care

- Improved decision making in a clinical setting

- Improved job advancement opportunities.

However, to realise these benefits, organisational leaders and managers must be clear about their expectations, set realistic and measurable goals, and implement processes that support employees' achievement of higher levels of education and on-going learning, training, and development. In particular, students benefit if the organisation is able to provide flexible scheduling, tuition / fees reimbursement, access to computers, and partnerships with universities to facilitate ongoing educational achievement (Hofler & Thomas, 2016, p. 134).

4) Socialisation and Emotion Regulation

Research has shown that socialisation and networking with more senior and experienced staff is integral to the transition from student to clinician (e.g., van Rooyen et al., 2018). Being part of a team and working with other clinicians facilitates the student's socialisation into a professional role and develops their communication and interpersonal skills. Learning to communicate with staff independently, collegial attitudes held by clinicians towards students, and previous connections to existing healthcare staff have also been shown to facilitate the transition to clinician by increasing a sense of belonging (Kaihlanen et al., 2017). This finding is supported by Kumaran and Carney (2014) who also found that supportive staff and a good team working environment were the most important identified factors in easing the transition from student to clinician. In addition, confidence to cope in demanding clinical situations has been shown to increase when students are able to share their experiences and concerns with other students, and when they receive peer-support from newly graduated clinicians who have recently experienced a similar transition period (Kaihlanen et al., 2017).

Given their exposure to stressful and emotionally charged situations, particularly during and following times of uncertainty and instability (i.e., the current COVID pandemic), it is important that new graduates develop emotion regulation skills. Specifically, research has shown that raising students' awareness of how they can handle stressful situations can help ease the transition to becoming a clinician, and is important for later practice. Therefore, organisations should seek to offer guidance and training in this area, and it should also be an area of focus by mentors / supervisors, to ensure an emphasis on the development of psychological skills as well as clinical knowledge. Different types of emotion regulation skills, found to be most useful to new graduates include[4]:

- Situation selection – choosing a situation based on anticipated emotional outcome

- Situation modification – altering the situation to change the emotional outcome

- Attention deployment – focussing on specific aspects of the situation, including the emotional aspect (rumination), seeking new information and using existing knowledge (information) and non-emotional aspects (distraction)

- Cognitive change – changing thinking to alter emotions (reappraisal)

- Response modulation – regulating emotional responses by removing oneself from the situation (physical), expressing one's emotions outwardly (e.g. crying) or inwardly (e.g. suppression) and sharing emotions or situation with another (Lundin et al., 2017).

STEP 9: SYNTHESIS

Over the past ten years, there has been numerous studies on the transition from student to clinician. These studies have been conducted in a number of countries, and look primarily at nursing and medical students and new graduates. After critically selecting and assessing a sample of empirical studies, we can conclude that the scientific evidence is of an acceptable quality. However, it is noted that this search did not identify randomised controlled studies or meta-analyses, and instead relied heavily upon literature reviews[5], case studies and qualitative analysis.

New graduates face a number of challenges as they transition into clinical practice, however, the scientific literature outlines a number of factors that can assist in this transition. Specifically, student to clinician transition programs can result in a range of benefits, however, careful consideration should be given to their design, implementation, and evaluation. Effective role modelling and mentor / preceptor-ship has also been shown to greatly impact the successful transition from student to clinician. However, supervision should be structured, and supervisors should also receive adequate and on-going support. New graduates are aided in their transition to successful clinicians if they engage in on-going education and learning, particularly as this helps to develop their critical thinking skills and ability to interpret and apply evidence-based practice. Finally, students benefit from socialisation and the cultivation of emotion regulation techniques as they transition to professional roles.

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[4] Based on Gross (1998) and Gross and Thompson (2006)'s process model of emotion regulation (cited in Lundin et al., 2018, p. 10).
[5] Note: Some of the literature reviews were systematic and therefore of a high quality.

STEP 10: CONCLUSION

The studies reviewed indicate that new graduates face a number of challenges when entering the clinical workforce, and the following factors are important to successfully facilitate their transition from student to clinician: specifically designed transition programs; high quality role models and close supervision; ongoing education and learning; and socialisation and enhanced emotion regulation strategies.

STEP 11: LIMITATIONS

In order to perform a 'rapid' review, concessions were made in the breadth and depth of the search process, and therefore, it is possible that some studies may have been missed. An additional limitation concerns the critical appraisal of included studies, in that the psychometric properties of questionnaires / outcome measures were not assessed. Although this REA did include a number of high quality studies (i.e. systematic reviews), there were no randomised control studies included, with many of the empirical papers utilising case studies and qualitative analysis methods. Many also had small sample sizes, and focussed predominantly on new nursing and medical students, excluding other allied health professionals.

STEP 12: IMPLICATIONS

The findings presented above have practical organisational implications. In particular, strategic implementation of specific transition programs that focus on building new graduates' confidence and competence has been shown to greatly assist in easing their transition from academia to the clinical environment. To support new graduates, organisations must understand that autonomous practice and high-functioning critical-thinking skills develop over time with proper, structured mentoring and support, as well as on-going education and learning. Leaders should also encourage the socialisation of new graduates, and ensure they have the emotion management skills required to perform in a high-stress working environment. Organisations must be open to adapting and making changes to support new graduates, to ensure that there is an ongoing, adequate supply of qualified clinicians to meet increasing demand (Hofler & Thomas, 2016).

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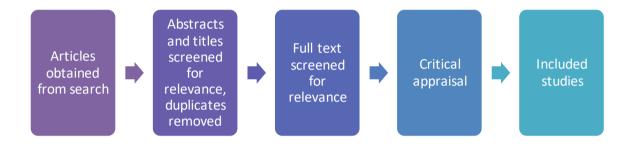
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![Workplace Research logo]

ATTACHMENT A: ARTICLE SELECTION PROCESS

| Articles obtained from search | → | Abstracts and titles screened for relevance, duplicates removed | → | Full text screened for relevance | → | Critical appraisal | → | Included studies |

ATTACHMENT B: STUDY FINDINGS

Author & Year	Sector / Population	Design & Sample Size	Main Findings	Limitations	Level
Aggar, Bloomfield, Thomas, & Gordon, 2017	New graduate nurses	Longitudinal, exploratory mixed-methods design; N = 4	Graduate nurses who completed the transition to professional practice program in general practice settings were found to be competent within their first year of clinical practice; program perceptions from graduate nurses and preceptors were positive; the relationship between the graduate nurse and preceptor was key to development.	Small sample size	B
Ares, 2014	Clinical nurse specialist students	Descriptive correlational design, N = 225	Flexible / online educational programs work well as they can be managed with full-time work commitments; online education can encourage access and program retention; advisor / mentor interactions with students can be enhanced with purposeful activities (e.g. social events / attending professional meetings or conferences); having a mentor was positively associated with readiness to practice	Use of a nonprobability convenience sample may limit generalisability of the findings. Potential measurement error involving researcher-designed items that had not previously examined validity and reliability	D

Author & Year	Sector / Population	Design & Sample Size	Main Findings	Limitations	Level
Baldwin, Mills, Birks, & Budden, 2014	Nursing students	Literature review, N (articles) = 33	Imbalance in the recognition of the role modelling of professional behaviours in the clinical versus the academic setting; experienced clinicians play an important role in professional development of students; students adopt the behaviours of clinician role models; 'good' role models = include and respect student, high quality patient care, follow best practice and evidence-based guidelines approachability, ability to instil confidence; need for clear link between education provider and clinical area; need for consistent continuing professional development for clinicians in order to ensure quality experiences for students; less in the literature about the impact that nurses in academic settings have on the professional growth of nursing students, however, more than just theoretical knowledge, enthusiasm and positive attitude towards nursing impacts students' understanding of professional behaviour.	Looked only at nurses and no other healthcare professionals, literature review only	C
Blitz, de Villiers, van Schalkwyk, 2019	Medical students	Qualitative, convenience sample, semi-structured focus group discussions; N = 23	Students saw clinical rotations as having the potential for them to apply their knowledge and test their procedural abilities in the environment where their professional practice and identity will develop. Students needed help in participating in the clinical setting, understanding how this participation will construct the knowledge and skills required as they join the workplace. Students did not have a strong sense of agency to negotiate participation in the clinical workplace. There is the potential for clinicians to assist students in adapting their way of learning from the largely structured classroom-based learning of theoretical knowledge, to the more experiential informal workplace-based learning of practice. Exercise of students' personal agency mitigates against the student merely being subjected to what is experienced in the workplace, enabling them to participate and construct their knowledge.	Small sample size, individual discussions may have generated richer insights	D

Author & Year	Sector / Population	Design & Sample Size	Main Findings	Limitations	Level
Daly, Perkins, Kumar, Roberts & Moore, 2013	Medical students	Qualitative, semi-structured interviews N = 42	Opportunities for clinical learning, personal and professional development and cultural awareness were reported by students and clinicians as key factors that contribute to preparedness for practice. Potential barriers in rural and remote settings included geographical and academic isolation, perceived educational risk and differing degrees of program engagement. A longitudinal clinical placement in a rural setting may enable development of enhanced competencies leading to preparedness for practice. A rural setting can provide a unique experience through hands-on learning, enhanced personal and professional development opportunities and observation of the cultural and contextual impact on health.	Research conducted in rural / remote setting; however, findings can be applied more broadly	D
Goldberg & Insel, 2013	MD-PhD students	Case study	Participation in a re-immersion program (RP) can help students feel more comfortable speaking with and examining patients and decrease their anxiety regarding clinical encounters. RPs incorporated multiple types of activities (clinical exam review, objective structured clinical examination, and supervised practice in patient care settings) and were designed to enhance the participants' skills and readiness for clinical efforts. These were found to have positive outcomes for improving the transition from student to clinician.	This was a case study only, based on observations of the authors. There was no quantitative or qualitative analysis, nor pre- or post-intervention tests.	E

Author & Year	Sector / Population	Design & Sample Size	Main Findings	Limitations	Level
Gordon, Aggar, Williams, Walker, Willcock & Bloomfield, 2014	New graduate nurses	Literature review, discussion paper	A graduate transition program to primary health care may play an important role in addressing primary health care workforce shortages in the future. There are, however, a number of factors that need to be simultaneously addressed if a skilled and sustainable workforce for the future is to be realised. The development of a transition program to primary health care should be based on a number of core principles and be subjected to both a summative and cost-effectiveness evaluation involving all key stakeholders.	Literature review only that did not include any pre- or post- measures or quantitative analysis	E
Hofler & Thomas, 2016	New graduate nurses	Literature review, discussion paper	There are a number of challenges facing new nurses as they transition to clinicians. Strategic implementation of specific programs that focus on building new nursing graduates' confidence and competence positively impact their transition from academia to the practice environment and make it a professionally rewarding time. To support new graduates, organisations must understand that autonomous practice and high-functioning critical-thinking skills develop over time with proper support. Leaders in the industry must adapt and make changes to ensure an adequate supply of qualified nurses to meet demands.	Literature review only that did not include any pre- or post- measures or quantitative analysis	E
Kaihlanen, Haavisto, Strandell-Laine & Salminen, 2017	New graduate nurses	Systematic literature review	Structure and contents of interventions and factors associated with successful transition to clinical work. The structures of the interventions described included: the participation, learning environment, amount of clinical work, supervisor criteria and supervision methods. The contents of the interventions included: supervisor support, transition supportive learning activities and the student's practical duties. The factors that were connected with facilitated transition were the quality of the supervision, adjusting to a professional nurse's role, achieved comfort and confidence and achieved competence.	Literature review only with no pre- or post- intervention tests. Small sample sizes	C

Author & Year	Sector / Population	Design & Sample Size	Main Findings	Limitations	Level
Kumaran & Carney, 2014	New graduate nurses	Qualitative, interviews (Heideggerian Hermeneutic approach) N = 10	Newly-qualified nurses initially felt excited upon qualification. However, professional responsibility and accountability associated with the new role were overwhelming for participants. They felt frustrated when they didn't receive adequate support during transition. Importance of clinical supervision; supportive staff and good team working were identified as the most important factors in easing the transition process.	Small sample size; risk of selection bias from using a purposive sample; qualitative data analysis relies on the researcher's insight and ability to recognise recurring themes.	D
Lundin, Bashir, Bullock, Kostov, Mattick, Rees & Monrouxe, 2017	Junior doctors	Secondary analysis of narrative data, qualitative N = 34	Junior doctors use a range of emotion regulation strategies, with many experiencing negative emotions. Emotion regulation strategies can be used before, during and after the situation. Raising medical students' awareness of how they can handle stressful situations can help smooth the transition to becoming a doctor and be important for later practice.	The authors did not explicitly ask junior doctors to describe their emotions and/or how these were managed, small sample size, no pre- or post-data collected / analysed, did not account for cultural differences in which emotions might be variously expressed or inhibited	E
Min, Stoneking, Grall, & Spear-Ellinwood, 2014	First-year Emergency Medicine residents	Quantitative, post-intervention survey N = 24	Survey responses indicated that the 'intern boot camp' (providing optional lecture and procedural skills instruction prior to participation in the mandatory orientation curriculum and assumption of clinical responsibilities) helped first-year residents feel more prepared for their clinical shifts in the Emergency Department. It was found that an optional clinical introductory series can allow for maintenance of mandatory orientation activities and clinical shifts while easing the transition from medical student to clinician.	Small sample size, only one type of 'bootcamp' was assessed, self-selection bias of those more likely to participate in additional training	B

Author & Year	Sector / Population	Design & Sample Size	Main Findings	Limitations	Level
Perry, Henderson & Grealish, 2018	Nursing students	Systematic, integrative literature review	Behaviours of nurses significantly influence students' accountability for learning and accordingly, their ability to be adequately prepared for professional nursing practice. Understanding behaviours that impact on students' approach to clinical placement can guide nurses in their approach to facilitating student learning, in particular, behaviours that increase student responsibility and independence over the continuum of clinical education. Behaviours emerged in relation to four themes including: belongingness associated with a genuine partnership; empowerment and increasing student self-efficacy; trust linked to increasing and staged independence; and balancing clinical and educational requirements.	Literature review, not an intervention study, small number of included studies (N = 9)	C
van Rooyen, Jordan, Ham-Baloyi & Caka, 2018	Newly graduate nurses	Systematic, integrative literature review	Guidelines on transitions (from student to professional nurse) were analysed thematically. Three factors to facilitate transition of final year nursing students to professional nurses were found: 1) support for new graduates, 2) the graduate's need for socialisation and belonging, and 3) a positive clinical learning environment. The availability and implementation of guidelines on transition of final year nursing students by educational institutions and healthcare facilities could ease the transition from being final year nursing students to becoming professional nurses as well as improve retention of newly qualified professional nurses.	Only the authors' university's databases could be accessed which resulted that a limited amount of relevant literature that could be obtained.	C

ATTACHMENT C: STUDY TRUSTWORTHINESS SCALE

Design	Level
Systematic review or meta-analysis of randomized controlled studies	AA
Systematic review or meta-analysis of non-randomized controlled and/or before-after studies	A
Randomized controlled study	A
Systematic review or meta-analysis of controlled studies without a pretest or uncontrolled study with a pretest	B
Non-randomized controlled before-after study	B
Interrupted time series	B
Systematic review or meta-analysis of cross-sectional studies	C
Controlled study without a pretest or uncontrolled study with a pretest	C
Cross-sectional study (survey)	D
Case studies, case reports, traditional literature reviews, theoretical papers	E