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How the trainee intern (TI) year can ease the transition from undergraduate education to postgraduate practice

Mike J Tweed, Warwick Bagg, Stephen Child, Tim J Wilkinson, Jennifer M Weller

Abstract

The trainee intern (TI) year is unique to New Zealand medical education. The TI year occupies a complete calendar year in which the medical student is immersed in clinical care as part of healthcare teams. The TI year is an example of a 'capstone' course; integrating theory into practice, fine tuning workplace skills, and easing the transition from undergraduate medical student to practising clinician.

We discuss the TI year within the context of 'transition shock'. Transition shock, related to movement between contexts or levels of responsibility, is not unique to medicine or the healthcare professions. This shock is multifactorial but there are many ways that the structure and activities of the TI year may ease this transition. The TI year is valuable in terms of its potential to improve preparedness, both real and perceived, but further research and ongoing evaluation is still required.

"No greater challenge outside wartime"

(A junior doctor's opinion of the transition from medical student to junior doctor in the UK)¹

From commencing undergraduate study to retiring from clinical practice, a doctor will experience many transitions. One of the most, if not the most, challenging of these is the transition from undergraduate medical student to post graduate year one (PGY1) doctor. This paper reviews general issues of work transition for healthcare professionals but places specific emphasis on the transition from student to doctor within the unique place of the Trainee Intern (TI) year.

The TI year, (the sixth and final year of the New Zealand medical degree) was established in the 1970s² and anecdotally appears to be a good bridge between student and practitioner. In the UK and USA, some medical schools offer students short house officers experiences while others suggest mandatory "student house officer" attachments in a medical student's final year.^{3,4}

In contrast to these experiences, the NZ TI year occupies a complete calendar year in which the student is immersed in clinical care as part of several healthcare teams. It should be noted that this year remains primarily under the jurisdiction of the Universities rather than healthcare employers or the medical council.

Although there are minor differences between Auckland and Otago Universities, the principles of the year remain the same, and the experience is equivalent. Medical undergraduates have assessment of clinical competence and knowledge over the first five undergraduate years, whilst the TI focuses on workplace performance.

The main purpose of the TI year is to allow the transitioning student to function as a valued member of a health care team, applying their learning in everyday clinical practice whilst still receiving close supervision and ongoing education from the university. Thus this year provides 'hands-on' preparation for the following PGY1.

As for many professions and vocational training programmes, medical students learn within an environment of graded responsibility. Initial patient contact is tightly and directly supervised and all patients seen by the students must be reviewed (direct supervision).

Later, following medical school graduation, these new doctors are granted the responsibility to see patients on their own, but these patients still 'belong' to a wider medical team and the majority of patients' overall care is regularly reviewed (indirect supervision). Following registration (granted after 12 months approved practice in New Zealand), new doctors are granted permission to see patients on their own but are still under indirect collegial supervision.

In addition to these transition points of graded responsibility, students also have transitions in roles and environments, locations and disciplines, from student to employee and from university to employer.

Transitions into employment in other professions

Managing transitions is not unique to medicine or healthcare. A large body of literature exists on different aspects of the stress of education-to-employment transitions.⁵⁻⁹ In the preparation for employment, prior expectations are important. No matter what the level of stress, when the actual work experienced is equivalent to or less stressful than what was expected, commitment is enhanced. Conversely, when the experience is more stressful than expected, new employees may feel demoralised.^{10,11}

While vocationally orientated degree courses aim to prepare graduates for employment, graduate surveys frequently highlight a perceived lack of preparation.⁷ A possible contributor to this may be the emphasis on self-reliance, i.e. students should take responsibility for their own development, and preparation for practice. While self-reliance is a valuable attribute for many professions, and therefore to be encouraged, students may not be in a position to predict the types of problems they will face and therefore, without appropriate mentoring, cannot take steps to prepare for them.⁷

Employers' criticisms of ill-prepared graduates across many professions have led to the development of "capstone" courses in business degrees, a capstone being "a top or crowning stone of a wall" or "crowning touch".⁶ The aim of the course is to integrate theory and practice and to fine-tune workplace skills.¹² These courses follow completion of the core curriculum and are an important part of many professional curricula.⁶

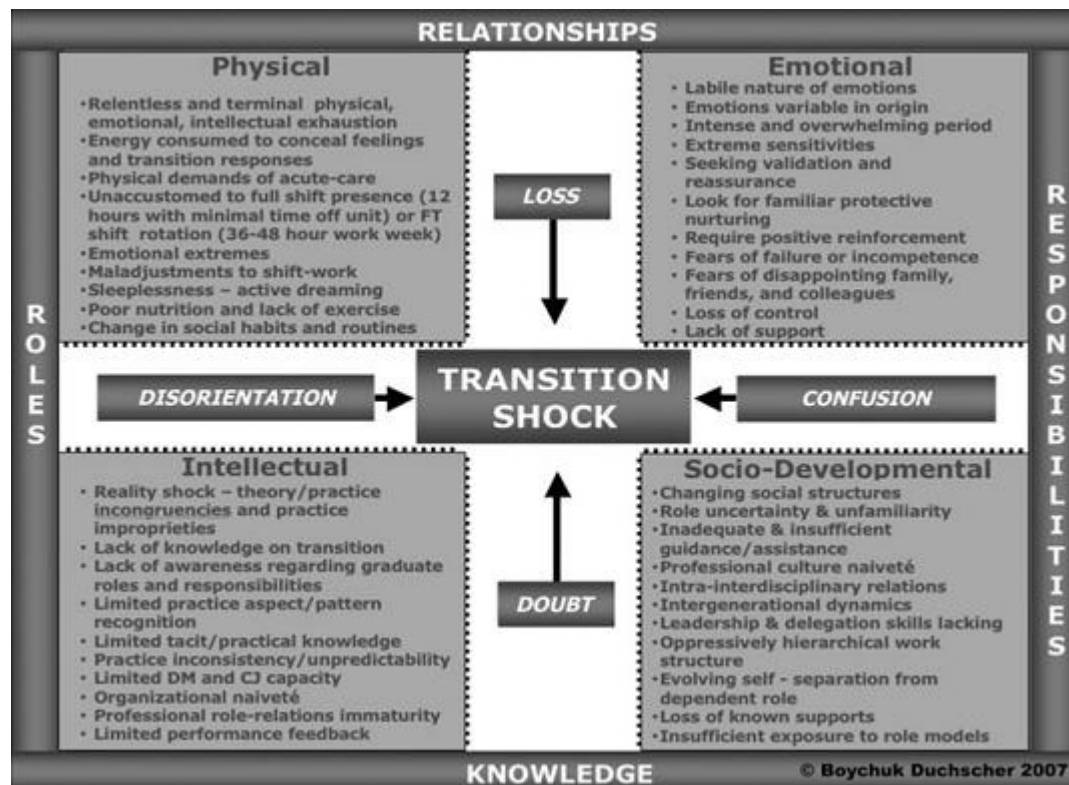
The TI year is an example of a capstone course. Proposals to develop and improve capstone courses include, with specific relevance to the TI year: increasing dialogue between university and employers (with increased feedback from employers); improved assessment including the use of portfolios and individualised assessments;^{6,12} and the use of key mentors.¹³

The transition to working life as a doctor and healthcare professional

The particular journey of transition from undergraduate student to independent practitioner across healthcare professionals is especially challenging¹⁴ and has even been termed "transition shock".¹⁵

Within the nursing literature, a framework (Figure 1) has been developed to describe the issues affecting healthcare professionals as they graduate, with notable emphasis on some of the stresses faced by a graduating medical student. Root causes of transition shock include expectation differences, change of support infrastructure, geographic relocation, reduced clinical support and social withdrawal. A similar pattern of problems is seen for junior doctors.¹⁶

Figure 1. Transition shock conceptual framework (reproduced with permission) developed for the nursing profession in United States¹⁵



Undergraduate education is constructed as preparation for professional practice, but the reality of a working environment includes issues of productivity, efficiency and achievement.

Conflicts between ‘service’ and ‘education’ are well documented¹⁷ and can lead to dissatisfaction and disillusionment. At graduation there is a change from the known role of the ‘student’ to the less familiar role of practitioner with the accompanying increase in professional responsibilities. In addition, the student’s undergraduate support network may be simultaneously removed with geographic relocation.¹⁸

Words used by healthcare professionals to describe these transition experiences often include confusion, being in-between, groundlessness, role ambiguity, and ill-preparedness.¹⁵ The most intense shock is experienced in the first few months and can potentially be followed by social withdrawal.¹⁵

Although each progress step through healthcare education is a transition, that from graduation into practice is likely to be the greatest leap. For new doctors, the reality of being personally responsible for patients can induce fear, doubt and stress.¹⁶ The emphasis to pass assessments is replaced by an emphasis to care for patients. This is both the reward and the responsibility of becoming a doctor.

The level of emotional trauma is also potentially heightened by a real or perceived lack of support. Colleagues and other healthcare professionals can support the new graduate through this emotional stress or add to it and undermine confidence to practice.¹⁵ To alleviate this, it is not surprising that support through formal and informal teaching with feedback from senior colleagues and peer learning is valued by junior doctors.¹⁸

This emotional stress can compound physical stress and illness. Shift work for nurses has been found to disrupt sleep patterns.¹⁵ Sleep is filled with dreams (nightmares) about work. Waking hours become filled with reviewing past shifts and anticipating upcoming shifts: this leads to perpetual work and further exhaustion.¹⁵

Graduates also want to develop a sense of their own professional self. Often they strive to find their place within their new “community of practice”.¹⁹ Therefore it is surprising that when Brennan,¹ interviewing junior doctors during their first postgraduate year, found that “working within a multidisciplinary team” was highlighted as a key component adding to their work related stress.

The potential gaps in transition to working life

Despite decades of research and multiple reviews of medical school curricula, many junior doctors still perceive gaps in their preparation for working life. For example, a number of researchers in the UK, Europe and Australia have surveyed or interviewed junior doctors on their perceived ability to cope with the job and found perceptions of deficiencies and inability to cope.^{16,18,20–22} Self reported experience of procedures and skills from the Medical Council of New Zealand (MCNZ) list²³ highlighted variability in both exposure and perceived level of experience.

Gome¹⁸ suggests, that junior doctors may be better prepared than they perceive themselves to be and this under-confidence may be unwarranted. However, in contrast stress is augmented by a disparity between what is expected of graduates and what they can reasonably achieve, with over-expectation of junior staff abilities by others being apparent.²⁴

Farnan²⁵ explored residents’ (junior doctors in training programs) uncertainty when dealing with problems they had recently faced on the ward. The residents described the following dilemmas in decision making: knowing when to escalate care; deciding between therapeutic options; uncertainty about ability to carry out a procedure; uncertainty regarding patients’ wishes and goals due to perceived inadequate communication with the patient or fear of breach of trust in that relationship.

Ten of the 18 problems reported by residents were felt by the residents to have resulted in patient harm. Barriers to seeking advice from a more senior doctor included a perceived hierarchy for seeking assistance (i.e. ask a peer first), fears of losing autonomy, revealing gaps in knowledge, and being a “bother”.

The New Zealand experience of preparation

In New Zealand there is evidence that, in general, TIs feel prepared for practice.^{23,26,27} In a national study in 2007, compared to Year 5 students, TIs reported significantly greater perceived competence and performance levels across clinical, procedural and professional domains. The greatest improvement appeared to be in the independent performance of procedural skills and clinical tasks as well as in the level of clinical responsibility taken.

At the end of the trainee intern year, 92% of students felt prepared to be a junior doctor, versus only 53% at the end of Year 5. This is a substantially higher proportion of final year medical students who feel ready to work as junior doctors than those in the UK (58% in 2002), and Australia (64% in 2006).²⁸⁻³¹ While it is acknowledged that these data compare differing lengths and types of medical programmes, nevertheless they are the final year of the respective programmes.

Interestingly there also appears to be a shift in learning that occurs in this transition with TIs focussing their learning on preparation for the junior doctor role, rather than just academic and clinical abilities.²⁶ While the NZ data are about perceived competence and performance, rather than measured competence and performance, they provide some reassurance that the TI year may ease the transition to the junior doctor role.

The TI Year easing the transition

The transition from medical student to junior doctor is a major event and a degree of transition stress is inevitable. As well as attempting to align expectations and current experiences to future expectations, interventions to ease this transition include; providing an educational framework to support and supplement clinical attachments; socialising students into the healthcare team;³² specific courses; exposing students to critical incident discussion groups; providing targeted simulation-based clinical skills training; and ensuring assessments are well designed and support learning.

The TI year easing the transition: educational framework—Although experiential workplace-based learning in clinical practice improves preparedness of medical students³³ and reduces transition stress,¹ reliance on clinical attachments as the sole learning approach in the TI year has some limitations. Learning may be opportunistic with no assurance that students will have the breadth of clinical experiences to reach the required standards across the curricular goals. Therefore a framework designed to support learning in clinical attachments is required.³⁴

Evidence suggests that the transition attachments should be structured around a set of clear objectives.^{3,35} While lists of expected competencies have been produced by national bodies such as the MCNZ³⁶ and the Australian Curriculum Framework for Junior Doctors,³⁷ currently these are only indicative and not mandated.

The TI year easing the transition: socialisation—Building collegial relationships is critical and contact with a variety of professional staff and role models will reduce the shock of working practice¹⁵, but brief attachments and frequent rotations might work against building these relationships. Rather than attempting to “cover” the entire range of clinical practice, longer attachments and becoming part of the team may have some advantages. Indeed, this may enable students to become more engaged and take on

more responsibility for some aspects of patient care, both shown to promote better preparation for practice.^{3,4,22,32,34,38-40}

While concerns over patient safety and optimising efficiency have tended to limit student involvement, well supervised students should be viewed as positive contributors to patient care and not as risks.¹ Furthermore, working with the same people in the same environment may be helpful, and it may be advantageous for TI attachments to be aligned with PGY1 posts. However, ensuring the TI year complements, rather than replicates PGY1 is also advantageous.

The TI year easing the transition: critical incident discussion—Junior house officers often provide much of the ‘supervision’ and teaching for TIs, but their high service load may limit the amount of time for reflection to optimise learning from the case. Opportunities to discuss experiences, including critical incidents, provide a way for students to make sense of cases and situations they have seen on the ward, by reflecting on diagnostic processes and decisions, thereby honing their clinical reasoning skills.^{39,41}

Critical incident discussion could also be a venue to discuss ethical and professional issues; for example, when to call for help.²⁵ The importance of effective and supportive supervision cannot be overemphasised.¹³

The TI year easing the transition: specific courses—Other positive interventions described in the literature include “Patient Safety and Crisis Management” courses,⁴² disease prevention and health promotion,⁴³ professionalism,⁴⁴ and learning about the theory and practice of teaching.⁴⁵⁻⁴⁹

The relevance of learning must be clear to the students. Students may not recognise the importance of some of these educational interventions as they will not have had experience of the workplace and the responsibilities they will have as doctors. Learning occurring when TIs are actually caring for patients will often maximise relevance and learning.

The TI year easing the transition: simulation-based clinical skills training—A number of targeted initiatives have been described to support transitioning doctors. Stolarek⁵⁰ reported that a clinical skills programme in a NZ hospital improved student self reported competence across a range of skills and that this complemented the experiential learning on wards. Experience during the intern year, especially recent experience of procedures and attending skills programme all increase self-reported confidence.

Simulation provides the opportunity for students to learn how to manage realistic clinical scenarios within a safe setting. They take responsibility for “the case” and have to make real-time decisions in a safe environment where there is an opportunity for reflection and feedback and repeated practice.

Learning can be structured and many of the potential gaps arising from the ad hoc nature of clinical exposure can be addressed. Simulation provides, among other things, a suitable teaching modality for learning diagnostic decision making, patient management, care of the acutely unwell patient, crisis management, teamwork, patient safety and procedural skills.

There is evidence showing the benefit of programmes that include simulations to support and supplement learning in the clinical environment.⁵¹⁻⁵⁶ Simulated experience and intervention courses however, should complement and not replace involvement with real patients which encompasses the complexity and uncertainty of the clinical environment.

The TI year easing the transition: authentic assessment—Finally, the range of assessments must also match the range of curriculum goals.⁴³ Benbassat⁴³ argues that if students are assessed in a minimum set of core skills against the standard of performance expected of a practitioner, this will raise the standard from familiarity to performance.

If the goal is to learn workplace-based patient management skills, then the assessments should be workplace-based, and could include direct observation tools such as mini-CEX (mini clinical evaluation exercise), DOPS (direct observation of procedural skills), case note review, case-based discussion or multisource feedback.⁵⁷

Other approaches could include assessment of clinical skills using simulation or standardised patients, group assignments, supervisor reports or peer assessment.

Conclusions

In summary, transitioning from medical student to practising doctor is a time of major stress for most, if not all medical graduates. Many factors add to the transition shock, including new levels of responsibility, change of support, relocation, emotional stress, physical stress and service-education tensions. While clinical attachments in the final year of medical school are crucial, as at other stages in medical training, and require appropriate supervision and a supporting framework to achieve the desired goal of easing this stress.

Several means are available to ease this transition shock and include supportive colleagues and peers, educational infrastructure, clearly delineating expectations versus reality, better descriptions of objectives/curriculum, lengthening time with teams, offering modular courses in some gap areas, offering simulation to augment workplace-based learning, and aligning assessments to attributes that are required in the workplace.

Above all, these measures require a partnership between universities and employers because any transition requires an understanding of where the trainee is coming from and where they are going to.

The available evidence suggests that including the Trainee Intern year is a sound educational strategy for preparing our medical students for practice, and should be retained as the capstone course in our programmes. Nevertheless, there is a need for a more complete understanding of how this year influences the transition so that the good aspects can be enhanced and any negative aspects can be diminished. This is where research efforts could be employed.

We have identified a number of approaches to supporting TIs through this year to better achieve the outcomes expected of a graduating doctor. Whatever we do, however, there will still be a transition period when students are faced with taking on the responsibilities of a medical practitioner. An understanding and acknowledgement

of the influences on this transition may go some way to creating a more compassionate and supportive environment for our junior doctors.

Take home messages:

- As a capstone course, the TI year is valuable in terms of its potential to improve undergraduate preparedness for practice, both real and perceived, and hence reduce transition shock.
- Evidence from the international literature suggests that the transition to practice can be eased with a supportive educational framework, immersion in the healthcare team in a supportive clinical environment and high quality supervision.
- Although it is likely that the TI year does ease the transition, further research is warranted to identify the optimal structure.

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