Supplementary Digital Appendix 3

Table 1: Defining Preparedness for Practice

	Citation	Purpose of Study	Study Design	Study Location	Study Participants	Definition of Preparedness for Practice	Findings of Study
1	(Barr, Ogden, Rooney, & Robertson, 2017)	To assess graduates' self-reported preparedness concerning a range of clinical practice capabilities, including those related to patient-centred care.	retrospective cross-sectional study	Australia	Medical graduates from Launceston Clinical School who had graduated between 2005-2014 n=135.	The synergy achieved by aligning Scott's requirements for "work ready plus "with patient-centred medicine via training doctors in the capabilities they need for practice immediately after graduating and constantly adapting to changing context	Many graduates felt prepared in 41 of the 44 practice areas; 80% felt well prepared in 17 areas. No differences were found between men and women who had graduated in the past four years. A unique feature for male participants was as they became more experienced, retrospective perceptions of preparedness in some areas differed from those of more recent graduates.
2	(Beckett, Hulbert, & Brown, 2006)	To assess the adequacy of specialist training to deal with a wide range of clinical, administrative, and management problems	cross-sectional study	UK	50 newly appointed consultants in emergency medicine (2 months to 2 years)	Adequacy to acquire generic skills and competencies that can be applied to various situations, especially when dealing with managerial issues.	Many respondents felt that there should be greater emphasis on acquiring clinical skills, partly by greater consultant supervision and providing more experience of anesthetics and intensive care. New consultants felt inadequately prepared for their management responsibilities, which is a source of great stress.
3	(Best et al., 2019)	To examine the perceived preparedness for independent practice that the current residency training programs provide to radiation oncology residents and to understand the competencies perceived as lacking and how perceived gaps in competencies could be addressed with the implementation of a transition to practice curriculum.	Focus groups	Canada	Senior radiation oncology residents, fellows, new-to-practice radiation oncologists and residency program directors	Having the required competencies to transition to practice	Commonly reported gaps in the transition to practice were lack of experience with practice management, understanding the structure and function of the health care system and how it varies by jurisdiction, financial planning, effective communication and collaboration with other health care team members, creation of accurate and timely documentation, and radiotherapy problem-solving related to treatment planning and evaluation. Suggestions to address these challenges included the use of mentorship, educational resources, courses, simulation-based medical education, improved graded responsibility, resident longitudinal clinics, and

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							formal curricula in radiation therapy planning and evaluation.
4	(Burford, Whittle, & Vance, 2014)	How prepared doctors feel and how that is related to the experience gained during clinical placements.	cross-sectional study	UK	Year 1 doctors were starting work in one foundation school in the UK. There were 356 respondents: 213 graduates of the local medical school, 131 were graduates of other UK medical schools, and 9 were graduates from outside the UK	to equip medical students with the skills and knowledge to enable them to begin work. 'Preparedness' also implies that they are aware of their capabilities and are confident in their ability to start work safely.	Respondents were generally prepared for practice, but many reported few 'hands-on' experiences providing immediate care during final year placements (a median of 1–2 experiences). Those who had 1–2 experiences reported no greater preparedness for acute management than those reporting no experience. Several exposures are necessary for a significant increase in perceived preparedness. The real-life experience was a better predictor of preparedness than simulated practice? Gaps remain in medical students' acute care experience, with a direct relationship to their perceived preparedness. The format and facilitation of placements may need to be addressed to enhance the quality of experience during the final year.
5	(Busari, Verhagen, & Muskiet, 2008)	To investigate whether the cultural climate of different learning environments influences physicians' perceived level of competence and preparedness for practice.	Cross-sectional survey	Netherlands	Pediatricians who had trained in clinical settings located in Europe and the Caribbean	no definition	The overall perception of preparedness in the Caribbean group was 2.93 (SD = 0.47) and 2.86 (SD = 0.72) in the European group. The European group felt less prepared in the competency as manager 1.81 (SD = 1.06) compared to their Caribbean counterparts 2.72 (SD = 0.66). The difference was significant (p = 0.006). The training in the different environments was perceived as adequate and comparable in effect. The learning environment's cultural climate appeared to influence the physician's perception of their competencies and preparedness for clinical practice.

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6	(Card, Snell, & O'Brien, 2006)	Examine perceived importance of training and preparation for various aspects of general internal medicine program	Cross-sectional survey	Canada	General internal medicine graduates	no definition	Gaps were demonstrated in many of the CanMEDS 2000/2005 competencies. Medical problems of pregnancy, perioperative care, pain management, chronic care, ambulatory care, and community GIM rotations were the medical expert areas with the most significant gaps. Exposure to procedural skills was perceived to be lacking. Some procedural skills valued as important for current GIM trainees and performed frequently (for example, ambulatory ECG interpretation) had low preparation ratings by trainees. Other areas of perceived discrepancy between training and practice included: manager role (set up of an office), health advocate (counselling for prevention, for example, smoking cessation), and professional (end of life issues, ethics). Over the last ten years, graduates of Canadian GIM training programs have identified perceived gaps between training and essential areas for practice. They have identified competencies that should be emphasized in Canadian GIM programs. Ongoing review of graduates' perceptions of training programs as it applies to their current practice is important to ensure the ongoing appropriateness of training programs.
7	(Cave et al., 2007)	To investigate whether the increased attention to preparedness for practice, manifested through curricular changes at UK medical schools, has improved the way newly qualified doctors feel.	Cross-sectional survey	UK	Newly qualified doctors in the UK in 2000, 2001, 2003 and 2005. Questionnaires were sent to 5330 doctors in 2000/2001, 4257 doctors in 2003, and 4784 doctors in 2005	How prepared medical school graduates felt or if graduates are fit for the purpose	Substantial variation in preparedness between doctors from different medical schools, reported in the first survey, was still present in 2003 and 2005. Between 1998 and 2006, all UK medical schools updated their courses. A significantly higher percentage of the respondents from schools with updated courses felt well prepared within each cohort.UK medical schools are now training doctors who feel better prepared for work than

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							in the past. Some of the improvements may be attributable to curricular change.
8	(Cave, Woolf, Jones, & Dacre, 2009)	To provide quantitative information about the relative effect of different influences upon preparedness by examining the relationship between doctors' preparedness and possible predictive factors, including characteristics of the doctors themselves, their medical school training, and their postgraduate work environment	Cross-sectional	UK	Newly qualified doctors in the UK; 5143 doctors provisionally registered with the GMC for the year 2004/2005	How prepared graduate students feel for the tasks expected of them	There were no associations between gender or graduate-entry status and preparedness. The personality traits of conscientiousness and extraversion were associated with high preparedness. Neuroticism was related to low preparedness. Respondents who had done shadowing attachments were more likely to feel prepared than graduates of problem-based learning courses. Preparedness correlated with an agreement with the statements 'My teaching was relevant to real life as a doctor, and 'As a house officer, I found it easy to get help when I needed it. Improvements in the preparedness of UK medical school graduates may be due to the increased relevance of undergraduate teaching to life as a junior doctor and increased support in the workplace.
9	(Chen, Kotliar, & Drolet, 2015)	To assess whether residents felt prepared by their medical school training	Cross-sectional	USA	A total of 2287 residents	How prepared residents feel in medical knowledge and clinical skills as well as applied medical and psychosocial practices	The majority agreed that 'medical school prepared me well to be a resident.' Most residents felt very well or mostly prepared in medical knowledge and clinical skills such as collecting a history, presenting a physical exam, or pathophysiology, but not for applied medical and psychosocial practices including end-of-life care, dealing with patient death, and considering cost-effective care. Many residents reported feeling underprepared for time and fatigue management, debt, and medical-legal issues. Medical school graduates generally feel well prepared for residency.

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							However, they may be less prepared to face important psychosocial, cultural, and professional issues. Ultimately, a greater emphasis on skills and psychosocial experience may yield graduates who feel better prepared for today's residency challenges.
10	(Dijkstra et al., 2013)	To provide an inventory of tasks specialists perform in practice, which can be used as an instrument to evaluate the outcomes of PGME across disciplines.	Document analyses, observations, interviews and questionnaires	Netherlands	Seven hundred and six specialists	Be prepared to perform the 91 tasks	An inventory of 91 tasks appears to be applicable across medical, surgical, and supportive disciplines.
11	(Dijkstra et al., 2015)	How elements of competency-based programmes in PGME (educational innovations, attention to competencies and learning environment) were related to perceived preparedness for the practice among new consultants.	Cross-sectional survey	Netherlands	143 new consultants.	How prepared consultants feel for independent practice	Controlling for self-efficacy and gender, the learning environment was the strongest predictor of preparedness for practice, followed by attention to competencies. Educational innovations were not directly related to preparedness for practice. The overall model explained 52 % of the variance in preparedness for practice. Attention to competencies mediated the relationship between educational innovations and preparedness for practice. This mediation became stronger at higher learning environment values. The learning environment plays a key role in determining how competency-based PGME prepares trainees for independent practice.
12	(Dijkstra, Pols, Remmelts, & Brand, 2015)	To analyze across specialties for which tasks and themes new consultants feel inadequately prepared for and to identify themes that need improved attention in postgraduate medical education programs or after registration.	Cross-sectional survey	Netherlands	New consultants from all hospital specialties with accredited training programs who completed their training in the north-eastern educational region of The Netherlands between 2004 and 2010	To prepare students and trainees optimally for the next phase of their career, i.e., preparing future physicians for independent medical practice	Respondents felt excellently prepared for 40 tasks, well prepared for 25 tasks, marginally sufficiently prepared for 18 tasks and insufficiently prepared for eight tasks. Preparedness scores were lowest for management administration and leadership tasks, research, end-of-life care, and patient safety-related communication. Surgical specialists felt better prepared for practice than medical specialists,

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							which could not be explained by differences in general self-efficacy. Although new consultants felt well prepared for medical tasks, the scores of more generic tasks indicate that the alignment between the different phases of the medical education continuum and independent practice needs improvement.
13	(Geramita et al., 2019)	To examine practices, attitudes, and beliefs regarding preparedness to provide survivorship care and explore predictors of confidence managing cancer survivors.	Cross-sectional survey	USA	One hundred twenty-seven PCPs	Express high willingness to provide survivorship care and feeling confident that they have the knowledge and skills to do so	The majority agreed that PCPs play a valuable role in the surveillance and adverse event monitoring in survivors. However, less than 25% felt their professional training prepared them to perform each domain. Physicians were significantly more likely than advanced practice providers to be among the 65% of PCPs who were confident monitoring ≥ one symptom in each of the five evaluated symptom clusters. PCPs appear willing to assume an enhanced role in cancer survivorship care but feel unprepared to do so.
14	(Kilminster, Zukas, Quinton, & Roberts, 2011)	To develop theoretical understandings about transitions, particularly with links with medical performance, and to develop and pilot a research methodology by which to investigate the transition processes.	Case study	UK	All participants were working in elderly medicine. FY1, in which the doctor takes on new responsibilities for prescribing, and FY2 transitions from generalist to specialist clinical practice		Transitions are regulated but not systematically monitored. Actual practice was determined much more by situational and contextual factors than by the formal frameworks. Trainees' and health professionals' accounts of their actual experiences of work showed how performance is dependent on the local learning environment. The increased regulation of clinical activity through protocols and care pathways helps to improve trainees' performance. In contrast, the less regulated aspects of work, such as rotas, induction and the making of multiple transitions within rotations, can impede performance during a period of transition. Transitions may be reframed as critically intensive learning periods (CILPs) in which doctors engage with the

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							particularities of the setting and establish working relationships with other doctors and other professionals. Institutions and wards have their own learning cultures, which may or may not recognize that transitions are CILPS. The extent to which these cultures take account of transitions as CILPs will contribute to the performance of new doctors.
15	(Lieberman & Hilliard, 2006)	To assess practising pediatricians' perceptions of the adequacy of their residency training as preparation for clinical practice and to assess practising pediatricians' opinions about the required mandatory length of training.	Cross-sectional survey	Canada	239 pediatricians certified between 1999 and 2003	no definition	Although overall satisfaction with training was high, pediatric programmes need to change by providing more appropriate training with less tertiary care, hospital-based training and more community and ambulatory-based experiences. Canadian pediatricians were satisfied with their 4-year training programmes and felt they were adequately prepared for practice, but there were essential areas with inadequate or inappropriate training. Significant and valid differences in opinion exist between community-based generalist pediatricians and university-based subspecialists.
16	(Lindberg, 2010)	To describe and analyze alumni accounts of their medical education to evaluate how well their training prepared them for their current work as physicians.	Thirty-two competencies in physicians' work were identified through interviews. A subsequent questionnaire was completed by programme alumni who had worked for 1- 2.5 years in different parts of the country.	Sweden	Three cohorts of graduates (n=169); undertaken at a medical faculty in Sweden where the training programme was assessed through the views of alumni	How well do such programmes prepare students for the next step, their first positions as interns, house officers, or newly registered physicians?	Problem areas included competencies in clinical skills, handling stressful situations, and applying rather than foundational knowledge about common symptoms and diseases. Despite extensive practical training, medical education still faces some problems transitioning from education to work.

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17	(Maisonneuve, Lambert, & Goldacre, 2014)	To report doctors' views of the first Foundation year, based on comments made as part of a questionnaire survey covering career choices, plans, and experiences.	qualitative analysis of the free text survey questions	UK	UK medical graduates of 2008 and 2009	Preparation by the medical school for practice	61% wrote about their first year of training, 35% about the working conditions they had experienced, 33% about how well their medical school had prepared them for work, 29% about their future career, 25% about support from peers and colleagues, 22% about working in medicine, and 15% about lifestyle issues. When concerns were expressed, they were commonly about the balance between service provision, administrative work, and training and education. The latter often suffered when it conflicted with the needs of medical service provision. They also wrote that the quality of a training post often depended on the commitment of an individual senior doctor. Service support from seniors was variable, and some respondents complained of a lack of teamwork and team ethic. Excessive hours and the lack of time for reflection and career planning before choices about the future had to be made also mentioned. Some doctors wrote that their views were not sought by their hospital and that NHS management structures did not lend themselves to efficiency. UK graduates from non-UK homes felt insecure about their future career prospects in the UK. There were positive comments about opportunities to train flexibly.
18	(McKinstry, Macnicol, Elliot, & Macpherson, 2005)	To determine self-perceived learning needs of new orthopedic Consultants, if there is a correlation between perceived length and supervision of training or experience abroad and subsequent self-perceived competence the views	Cross-sectional survey	UK	Orthopedic surgeons	no definition	Respondents felt their clinical training was good and were generally confident in most clinical skills, although some perceived deficiencies in more complex procedures and specialist areas. Most lacked confidence in many managerial skills. Extra training was found in specific sub-specialties improved confidence. Established consultants indicated that consultants lacked negotiation skills, the ability to

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		of new consultants and established consultants on the length and quality of current training, what changes these doctors believe should be made to orthopedic training and whether new consultants feel they were given adequate support from senior colleagues in the early years of consultantship and their attitude to formal mentoring					address complex clinical problems, and management. Interpersonal skills were associated with less preparedness
19	(McNeil, Hughes, Toohey, & Dowton, 2006)	Describing an innovative medical curriculum at the University of New South Wales (UNSW) has been developed through a highly collaborative process to build faculty ownership and ongoing sustainability.	Research article	Australia	NA	no definition	The program's design and assessment system foster a learning environment that values the social nature of learning, which supports interdisciplinary integration and rewards students who exhibit self-direction. The assessment incorporates criterion referencing, inter-disciplinary examinations, a balance between continuous and barrier assessments, peer feedback and performance assessments of clinical competence. A portfolio examination in each phase, in which students submit evidence of reflection and achievement for each capability, ensures overall alignment.
20	(Monrouxe et al., 2017)	To understand how prepared UK medical graduates are for practice and the effectiveness of Workplace transition interventions.	Review	UK	graduates from UK Medical Schools.	Medical graduates' preparedness for specific tasks, skills, and knowledge; interactional and interpersonal aspects of their preparedness;	Most studies comprised junior doctors' self-reports. Few defined preparedness and a programmatic approach were lacking. Six themes were highlighted: individual skills/knowledge, interactional competence, systemic/technological competence, personal preparedness, demographic factors, and transitional interventions. Graduates appear prepared for history taking, physical examinations and some

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							clinical skills but unprepared for other aspects, including prescribing clinical reasoning/diagnoses, emergency management, multidisciplinary teamworking, handover, error/safety incidents, understanding ethical/legal issues and ward environment familiarity. Shadowing and induction assist transition into practice, but there is a lack of evidence around assistantship efficacy.
21	(Monrouxe et al., 2018)	To explore multiple stakeholders' perceptions of recent medical graduates' preparedness for practice including under-represented groups such as patient and public representatives and policy and government officials.	A qualitative narrative interview and longitudinal audio diary	UK	Eight stakeholder groups comprising n=185; newly graduated doctors: n=34, postgraduate year one doctors and n=23 postgraduate year 2 doctors, n=32 clinical educators (CEs); n=30 deans and training programme leads (DTPLs); n=13 healthcare professionals (HCPs: e.g., nurses and pharmacists). n=7 employers (EMPs); n=25 PPRs and n=11 policy and government officials (POLs).	Short-term preparedness prepares graduates for immediate practice, and long-term preparedness prepares them for careers in medicine across a wide range of specialties in an ever-changing healthcare environment. Ensuring that graduates are prepared for the complexity, and pressures, of today's practice, possessing the knowledge, skills and behaviours expected of them, and included knowing limitations, prioritization, managing stress, engendering patient trust and generally being a safe doctor. While short-term preparedness focused on graduates being able to hit the ground running, long-term preparedness involved readiness for a medical career, focusing on psychological and emotional aspects of preparedness	Stakeholders' conceptualizations of preparedness for practice included short-term (hitting the ground running) and long-term preparedness, alongside being prepared for practical and emotional aspects. Stakeholders' perceptions of medical graduates' preparedness for practice varied across different GMC outcomes for graduates (e.g., Doctor as Scholar and Scientist, as Practitioner, as Professional) and across stakeholders (e.g., newly graduated doctors sometimes perceived themselves as prepared, but others did not). The proportion of time that medical students spend participating meaningfully in multi-professional teams during workplace learning.
22	(Morrow, Johnson, et al., 2012)	To examine the extent to which graduates from different UK medical schools differed in their perceptions of preparedness for practice and compare	Cross-sectional	UK	Medical graduates Glasgow (n=131), Newcastle (n=226) and Warwick (n=123	Feeling prepared to start work	New doctors felt relatively unprepared for several aspects of practice, a perception shared by their colleagues. Although medical school affects preparedness, more significant differences are common across

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		their perceptions with those of clinical team members.					sites. Differences may reflect hidden influences common to all the schools, unintended consequences of national curriculum guidance or common traits in the graduate populations sampled. Further research is needed to identify the causes.
23	(Morrow, Burford, Redfern, Briel, & Illing, 2012)	To measure new consultants' perceptions of their preparedness for different clinical and non-clinical aspects of the role of consultant.	A cross-specialty questionnaire followed by Face-to-face interviews with 32 final year specialty trainees and 20 telephone interviews with newly appointed consultants	UK	Consultants who had completed their specialty training in the north of England between 2004 and 2009 and had held a substantive consultant post in the region for <5 years were sent questionnaires in late 2009.	Preparedness for both clinical and managerial tasks	Ten factors reflecting areas including clinical skills, communication skills, team and resource management were identified. Overall, higher scores were observed on factors relating to 'providing care for individual patients' rather than 'having responsibility for the care system.' The lowest scoring factors related to resource management and supervision, with mean scores falling below the scale midpoint. There were no significant differences between specialty groups or any demographic variables.
24	(Perron et al., 2018)	To explore the extent to which primary care physicians who recently set up private practice felt prepared to work as independent practitioners.	Focus groups	Switzerland	Recently established (≤ 5 years) primary care physicians in the French-speaking part of Switzerland	Preparedness refers to the feeling of confidence or self-belief in carrying out procedural or communication tasks, dealing with clinical situations or making clinical judgements. It requires both confidence and the ability to adapt to future work	Participants felt relatively well prepared for most medical tasks except for some rheumatologic, minor traumatology, ENR, skin, and psychiatric aspects. They felt unprepared for non-clinical tasks such as office, insurance and medico-legal management. They did not anticipate that professional networking outside the hospital would be necessary to their daily work. They faced dilemmas opposing professional values to the reality of practice which forced them to clarify their professional roles and expectations. Adjustment strategies were mainly informal.

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25	(Scicluna et al., 2012)	Report an initial evaluation of self-perceived and supervisor-evaluated clinical capabilities of the new UNSW program's first graduating cohort and compare results to a previous cohort and historical benchmarks.	Cross-sectional survey	Australia	92 of the 2007 cohort and 55 of the 2009 cohort; graduates from the University of New South Wales (UNSW) Faculty of Medicine	Self-perceived capability in a range of clinical tasks and assessment of medical education	Three months into the internship, graduates from UNSW's new outcomes-based integrated program rated themselves to have good clinical and procedural skills, with ratings that indicated significantly greater capability than graduates of the previous UNSW content-based program. New program graduates rated themselves significantly more prepared for hospital practice in the confidence (reflective practice), prevention (social aspects of health), interpersonal skills (communication), and collaboration (teamwork) subscales than old program students, and significantly better or equivalent to published benchmarks of graduates from other Australian medical schools. Clinical supervisors rated new program graduates highly capable for teamwork, reflective practice, and communication.
26	(Watanabe et al., 2017)	To determine graduated fellows' perceived preparedness for practice, to determine whether fellowships are meeting their needs as they transition into practice and to identify any educational gaps.	Interviews focus groups and survey	Canada and USA	Graduates of FC-accredited fellowships between 2012 and 2014.	Preparedness for: professional development, job marketability, autonomy, networking, and practice management	97 % were highly satisfied with their operative and non-operative experiences: 83 % acquired jobs aligned with their skills and expectations, while 17 % sought additional training after fellowship. Respondents who intended to learn a procedure felt competent after fellowship to perform (85 %) of the 60 procedures listed. They would have liked more experience in advanced therapeutic endoscopy, complex and revisional bariatric surgery, and uncommon laparoscopic procedures such as esophagectomy, adrenalectomy, and common bile duct exploration. Thirty-one percent expressed the desire for more autonomy in the management of complications. Educational gaps mainly existed in areas of coding and billing (42 %), hiring

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							administrative staff (42 %), and managing insurance issues (34 %).
27	(Watmough, Cherry, & O'Sullivan, 2012)	Summarize questionnaires asking the graduates about their preparation for the key skills required to work as doctors	survey	UK	The final two cohorts to graduate from the TMC (graduating years 1999 and 2000) and the first two cohorts to graduate from the RMC (graduating years 2001 and 2002)	no definition	There were significant differences between reformed and traditional curriculum graduates on nearly all the questionnaire variables. Reformed curriculum graduates felt significantly better prepared for undertaking practical procedures, working in a team, understanding evidence-based medicine. The traditional graduates felt better prepared in variables relating to basic sciences, such as understanding disease processes. Reforming the curriculum can change the way graduates from the same medical school view their undergraduate education.
28	(Weidner & Chen, 2019)	This study looked at the difference between preparation for and the scope of practice among new family medicine residency graduates at 2 points in time, 2000 and 2012-2014.	Cross-sectional survey	USA	Two cohorts of the University of Washington Family Medicine Residency Network graduate survey respondents: those who graduated residency between 2010 and 2013 (n = 408) and completed the 2012 or 2014 survey (later cohort), and those who graduated between 1996 and 1999 and completed the 2000 survey (earlier cohort).	no definition	Significant differences exist between the earlier and later cohorts who report practicing various services and procedures at the time of the survey. The earlier cohort had a similar or significantly higher proportion of graduates practicing almost all the listed services and procedures than the later cohort; only obstetric ultrasound and end-of-life care were more common among the latter cohort. The opposite pattern was observed when comparing the proportions of graduates who felt adequately prepared for practice. A more significant proportion of those in the latter cohort reported feeling more than adequately prepared in most areas.

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29	(Westerman et al., 2010)	Investigated if attending physicians adequately prepared and trained to perform the tasks and duties of their new position and aimed to represent emerging factors in a conceptual framework of the transition.	Interviews	Netherlands	14 physicians were interviewed who had commenced an attending post in internal medicine or obstetrics-gynecology between six months and two years earlier, within the Netherlands.	no definition	A conceptual framework emerged from the data, consisting of three themes interacting in a longitudinal process. The the framework describes how novel disruptive elements (first theme) due to the transition from resident to attending physician are perceived and acted on (second theme), and how this directs new attendings' personal development (third theme).
30	(Westerman et al., 2013)	Danish and Dutch new consultants' perceptions regarding the transition to consultant were compared to gain insight into this period, particularly the influence of contextual factors concerning the organization of specialty training and health care therein. Preparation for medical and generic competencies, perceived intensity and burnout were compared.	survey	Netherlands	Seven hundred ninety-two new consultants in the Netherlands and 677 Danish new consultants.	no definition	Compared to their Dutch counterparts, Danish consultants perceived specialty training and the transition less intensely reported higher levels of preparation for generic competencies and scored lower on burnout. The importance of contextual aspects in the transition is underscored and shows that Denmark appears to succeed better in aligning training with practice. Regulations regarding trainees' working hours and progressive independence appear to facilitate the transition.
31	(Wijnen-Meijer, Ten Cate, Van Der Schaaf, & Borleffs, 2010)	To determine whether a vertically integrated VI curriculum at medical school affects the transition to postgraduate training in a positive way.	Cross-sectional survey	Netherlands	Graduates of six medical schools in the Netherlands who had followed either a VI or a non-VI curriculum.	To be well prepared for the next phase of medical training (transition from theoretical to clinical education at medical school and transition from medical school to postgraduate medical specialist training)	Compared to those who have followed non-VI programmes, graduates of VI curricula appear to make definitive career choices earlier, need less time and fewer applications to obtain residency positions and feel more prepared for work and postgraduate training. The curriculum at medical school affects the transition to postgraduate training.
32	(Wiener-Ogilvie, Bennison, & Smith, 2014)	To explore the meaning that GP trainees and newly qualified GPs attach to the notion of preparedness and examine how they perceive their training environment to impact preparedness.	27 in-depth semi-structured interviews	UK	15 newly qualified GPs and 12 GP trainees at the end of their training	Preparedness is a feeling of confidence or self-belief in carrying out procedural or communication tasks, dealing with clinical situations or making clinical judgements. preparedness should be replaced with the concept of 'transition,' alluding to a	Two central categories describing preparedness emerged: 'confidence' and 'adaptability.' Inclusive training practices, characterized by non-hierarchical relationships between the doctors, particularly vis-àvis trainees, were reported to be progressive

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						more dynamic process of professional development which also involves identity development	and were better at preparing trainees. The way the training practice can impact preparedness can be explained by drawing on Lave and Wenger's theory of General practice training environment and its impact on preparedness 'situated learning.' The role of the trainer was also pivotal in preparing trainees. Supervision tailored to trainees' needs and guided decision-making enhanced trainees' confidence in their ability to work independently in the future.
33	(Woloschuk, Crutcher, & Szafran, 2005)	To identify non-clinical dimensions of preparedness for rural practice and to determine whether preparedness for rural practice is predictive of rural practice location.	Cross-sectional survey	Canada	Graduates (n = 369) of the family medicine the residency program at the universities of Alberta (U of A) and Calgary (U of C) between 1996 and 2000, inclusive.	The extent to which the residency program prepared them for eight dimensions of rural practice: clinical demands of rural practice, understanding rural culture, small community living, balancing work, and personal life, establishing personal/professional boundaries, becoming a community leader, handling a 'fishbowl' lifestyle, and choosing a suitable community	Factor analysis of the eight preparedness items produced two factors, 'rural culture' and 'rural community leader,' which explained 72% of the variance. The alpha coefficient for each factor was 0.87. Odds ratios revealed that family medicine graduates prepared for rural community leadership roles were more likely to be in rural practice. Rural physicians were also more likely to have a rural background. Preparedness to be a rural community leader and having a rural background were predictive of rural practice. Educators should consider this in both family medicine residency admissions policy and practice and designing and implementing family medicine residency curricula.
34	(Zafar & Rehman, 2017)	To identify the perception of the medical graduates of the extent to which an outcomes-based curriculum in Pakistan has prepared them for hospital practice.	Cross-sectional survey	Pakistan	43 recent graduates of Islamic International Medical College in Pakistan	No Definition	The majority of the students reported good capability in clinical skills but rated themselves lower on procedural skills, operational management, and administrative tasks. Students rated an average preparedness for holistic care, collaboration prevention, and self-directed learning, while they reported inadequate preparedness in coping skills and interpersonal skills. The introduction of an outcomes-based curriculum does not

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							guarantee student preparation for clinical practice during house job

Table 2: Defining Outcome Measures

	Citation and Study Information (study design, location, participants)	Definition of Competence	Definition of Competencies	Definition of Self-Concept (Self-Confidence)	Definition of Self-Efficacy (Self-Confidence)	Definition of Adaptability	Definition of Capable	Definition of Capabilities
1	Barr, Ogden, Rooney, & Robertson, 2017 Retrospective cross-sectional study, Australia, 135 medical graduates	NA	NA	NA	NA	NA	NA	High order capabilities: knowledge and skills, the capacity to continue to learn, the ability to perform in changing contexts and to be clear in a professional purpose being able to implement change, to work in partnership, and to manage the unexpected, as well as being clear about their role in driving change
2	Beckett, Hulbert, & Brown, 2006 Cross-sectional study, UK, 50 newly appointed consultants in emergency medicine	Competence in clinical, academic, and managerial activities	NA	Self-confidence: confidence in managing clinical, managerial issues as well as psychiatric patients		NA	NA	NA
3	Best et al., 2019 Focus groups, Canada, Senior radiation oncology residents, fellows, new-to-practice radiation oncologists and residency program directors	NA	Collaborator, Communicator, Leader, Medical Expert, Scholar, Mentorship	NA	NA	NA	NA	NA
4	Burford, Whittle, & Vance, 2014 Cross-sectional study, UK, 356 Year 1 UK doctors	NA	NA	NA	NA	NA	NA	NA
5	Busari, Verhagen, & Muskiet, 2008 Cross-sectional survey, Netherlands, Pediatricians who trained in clinical settings in Europe and the Caribbean	NA	Medical Expert, Communicator, Collaborator, Manager, Health Advocate, Scholar and Professional	NA	NA	NA	NA	NA
6	Card, Snell, & O'Brien, 2006 Cross-sectional survey, Canada, General internal medicine graduates	NA	NA	NA	NA	NA	NA	NA
7	Cave et al., 2007 Cross-sectional survey, UK, 5330 doctors in 2000/2001, 4257 doctors in 2003, and 4784 doctors in 2005	NA	NA	NA	NA	NA	NA	NA

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8	Cave, Woolf, Jones, & Dacre, 2009, Cross-sectional, UK, 5143 doctors provisionally registered with the GMC for the year 2004/2005	Feeling prepared by the medical school for starting work	NA	NA	A psychological construct is defined as an individual's belief about their ability to control the world around them, including their ability to perform specific tasks	NA	NA	NA
9	Chen, Kotliar, & Drolet, 2015, Cross-sectional, USA, 2287 residents	NA	Medical knowledge and clinical skills various applied clinical, professional, or psychosocial aspects of residency training End of life and death Cost-effective care debt, time and fatigue management, and medical-legal issues	NA	NA	NA	NA	NA
10	Dijkstra et al., 2013, Document analyses, observations, interviews and questionnaires, Netherlands, 706 specialists	Gradual development to perform the needed competencies	NA	NA	NA	NA	NA	NA
11	Dijkstra et al., 2015, Cross-sectional survey, Netherlands, 143 new consultants	NA	The 7 CanMEDS competencies	NA	General confidence in the ability and capacity to accomplish a task,	NA	NA	NA
12	Dijkstra, Pols, Remmelts, & Brand, 2015, Cross-sectional survey, Netherlands, New consultants from all hospital specialties with accredited training programs	NA	1. Transfer, admission, and discharge 2. Collaboration with specialists 3. Consultations and visits 4. Collaboration with non-specialists 5. Communication with patients and family 6. Patient-related administration 7. Education 8. Continuing professional development 9. Research 10. Management	NA	Capable of meeting demands in multiple contexts	NA	NA	NA

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			11. Surgical and non-surgical procedures 12. Diagnostics					
13	Geramita et al., 2019 Cross-sectional survey, USA, 127 PCPs	NA	Clinical competencies	Self-confidence: feeling confident that they have the knowledge and skills to perform survivorship management		NA	NA	NA
14	Kilminster, Zukas, Quinton, & Roberts, 2011 Case study, UK, All participants were working in elderly medicine	NA	NA	NA		NA	NA	NA
15	Lieberman & Hilliard, 2006 Cross-sectional survey, Canada, 239 pediatricians certified between 1999 and 2003	NA	medical experts, communicators, collaborators, health advocates, scholars and professional, medical experts dealing with death and the bereaved family, and the manager of an office practice	NA	NA	NA	NA	NA
16	Lindberg, 2010 Physician interviews and questionnaire, Sweden, 169 medical graduates	Being a competent physician is first and foremost about a good doctor-patient relationship, that you respect the patient. It's also about listening to the patient's needs, being a good listener, and presenting things so the patient can understand. To be competent in the 32 competencies	Thirty-two key competencies in five major categories. These categories are as follows: Medical knowledge and skills Interpersonal skills (patient relationships) Interpersonal skills (staff and workplace issues) Life-long learning skills Intrapersonal skills	NA	NA	NA	NA	NA
17	Maisonneuve, Lambert, & Goldacre, 2014 Qualitative analysis of the free text survey questions, UK, UK medical graduates of 2008 and 2009	NA	NA	NA	NA	NA	NA	NA
18	McKinstry, Macnicol, Elliot, & Macpherson, 2005 Cross-sectional survey, UK, Orthopedic surgeons	Perceived competency in the main areas of elective and trauma surgery, managerial and communication skills, teaching, and research skills	NA	Self-confidence: confident in **practical procedures management areas** (Negotiation, Business planning, Financial skills Leadership, Appraisal, Presentations, Medico-legal (court work, reports), Risk management, Managing the private practice **Research Skills:** Applying for grants Running research project,		NA	NA	NA

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				Literature review, Writing up) **Teaching skills** Small group teaching, Mentoring skills, Appraising students				
19	McNeil, Hughes, Toohey, & Dowton, 2006, Research article, Australia, NA	Competence has a somewhat mechanistic overtone and suggests a level of technical skill	NA	NA		NA	NA	'capability' should encompass not only knowledge and skill but the capacity to take effective action in unfamiliar and changing circumstances, to be able to explain what one is about, work effectively with others and continue to learn from one's experiences. Graduate capabilities that focus student learning on generic outcomes are described (critical evaluation, reflection, communication, and teamwork) along with traditional outcomes in biomedical science, social aspects, clinical performance, and ethics
20	Monrouxe et al., 2017, Review, UK, graduates from UK Medical Schools	NA	NA	NA		NA	NA	NA
21	Monrouxe et al., 2018, A qualitative narrative interview and longitudinal audio diary, UK, 8 stakeholder groups with 185 people	NA	Doctor as scholar and scientist, as a practitioner and as professional	Abilities to draw context-free general conclusions about their skills or knowledge in specific domains	Individuals' beliefs in their own abilities to complete tasks	NA	NA	NA
22	Morrow, Johnson, et al., 2012, Cross-sectional, UK, 480 Medical graduates	NA	NA	NA	NA	NA	NA	NA
23	Morrow, Burford, et al., 2012, A cross-specialty questionnaire followed by Face-to-face interviews and telephone interviews, UK, Consultants	Be prepared in the ten factors: supervision, resource management, clinical interaction, teamwork/person management,	NA	NA	NA	NA	NA	NA

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		time management, audit, clinical skills, communication skills, supporting activities/skills and teaching						
24	Perron et al., 2018, Focus groups, Switzerland, Recently established primary care physicians in the French-speaking part of Switzerland	NA	NA	NA	NA	NA	NA	NA
25	Scicluna et al., 2012, Cross-sectional survey, Australia, 147 graduates from the University of New South Wales Faculty of Medicine	NA	NA	NA	NA	NA	NA	Five relatively generic capabilities (effective communication, teamwork, self-direction, ethical practice, and reflective practice) as well as three traditional discipline-specific capabilities (scientific basis of medicine, social aspects of health, and patient assessment and management)
26	Watanabe et al., 2017, Interviews, focus groups, and survey, Canada and USA, Graduates of FC-accredited fellowships between 2012 and 2014.	NA	NA	NA	NA	NA	NA	NA
27	Watmough, Cherry, & O'Sullivan, 2012, Survey, UK, medical graduates	NA	-Working in a team -Understanding the role of the other health care professionals -Understanding evidence-based medicine -Using informatics as a tool in medical practice -Understanding the purpose and practice of audit, peer review and appraisal -Making a diagnosis -Ability to take a concise history	NA	NA	NA	NA	NA

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			-Carry out a relevant physical examination -Carry out relevant examination of mental state -Using laboratory and other diagnostic services -Understanding disease processes -Writing a prescription -Obtaining valid consent -Understanding the relationship between primary and social care and hospital care -Coping with uncertainty -Being aware of limitations -Treating acutely ill patients -Managing time effectively -Understanding legal and ethical issues -Recognising the social and emotional factors in illness and treatment -Undertaking practical (clinical skills) procedures on patients -Carrying out a literature search -Developing critical thinking -Organising your learning					
28	Weidner & Chen, 2019 Cross-sectional survey, USA, medical graduates	NA	NA	NA	NA	NA	NA	NA
29	Westerman et al., 2010 Interviews, Netherlands, 14 physicians	NA	NA	NA	NA	NA	NA	NA

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30	Westerman et al., 2013. Survey, Netherlands, 792 new consultants in the Netherlands and 677 Danish new consultants	NA	Medical competencies 1. Mastery of clinical knowledge 2. Mastery of clinical 3. Capability of carrying final responsibility for patient care Generic competencies 4. Capability of practicing evidence-based medicine 5. Skill at keeping knowledge and skills up to date through, for instance, continuous professional development 6. Skill at communicating with patients 7. Skill at giving feedback 8. Skill at receiving feedback 9. Skill at asking for feedback 10. Capability of working in a team with colleagues and other medical specialists 11. Capability of working in a team with nurses and others 12. Skill at training specialist registrars and medical students 13. Capability of supervising specialist registrars on the ward 14. Capability of supervising specialist registrars from a distance during on-call shifts	NA	NA	NA	NA	Although the authors categorize the 19 skills as competencies, yet they referred to the following ones as capabilities: 3, 4, 10, 11, 13,14,18,19

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			15. Skill at leadership concerning individuals and teams 16. Skill at management 17. Skill at time management 18. Capability of handling financial aspects of health care 19. Capability of working effectively within the organizational structure of the hospital and health care system					
31	Wijnen-Meijer, Ten Cate, Van Der Schaaf, & Borleffs, 2010. Cross-sectional survey, Netherlands. Graduates of six medical schools in the Netherlands who had followed either a VI or a non-VI curriculum.	NA	NA	NA	NA	NA	NA	NA
32	Wiener-Ogilvie, Bennison, & Smith, 2014. 27 in-depth semi-structured interviews, UK, 15 newly qualified GPs and 12 GP trainees at the end of their training.	NA	NA	Confidence was not specific to skills or procedures as often defined by previous studies but related to inner confidence in skills and decision-making for the management of patients.		Adapting quickly to work in different contexts was also essential for being prepared. Managing varied, complex patients and workload, having good consultation skills, and an adequate knowledge base enhanced adaptability. Awareness of various legitimate approaches to clinical management and work in general through participation in professional conversations supported adaptability. In	NA	NA

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						addition, the opportunity to train in more than one practice aided adaptability as it allowed GP trainees to experience different managerial approaches in general practice, alternative approaches to clinical care and diverse patient populations, thereby allowing trainees to develop more flexible approaches to problem-solving and work in general.		
33	Woloschuk, Crutcher, & Szafran, 2005, Cross-sectional survey, Canada, 369 family medicine graduates	NA	the need to equip family medicine residents with competencies beyond those required for the clinical aspects of rural medicine. Clinical demands of rural practice, understanding rural culture, small community living, balancing work, and personal life, establishing personal/professional boundaries, becoming a community leader, handling a 'fishbowl' lifestyle, and choosing a suitable community.	NA	NA	NA	NA	NA

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34	Zafar & Rehman, 2017 Cross-sectional survey, Pakistan, 43 recent graduates of Islamic International Medical College in Pakistan	NA	NA	NA	NA	NA	NA	Clinical capability: domains of "Practical skills and patient management", "holistic care", "preventive medicine", "interpersonal skills", "coping skills", "collaboration" and "self-directed learning"

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