Policy Document

Medical School Transitions (2024)

Executive Summary

Secondary School or Undergraduate studies to Medical School Transitioning

Secondary education is largely teacher-centred while university education requires greater self-directed learning. Therefore, the academic difficulties that first-year medical students face in the transition from secondary school include having to adapt to independent learning, managing an increased workload and being responsible for their own learning [7].

Effective time management and developing into a self-directed learner improves academic achievement in the first-year of medical school. Other strategies to reduce academic overload include supportive tutor-student relationships, formative assessments, having clear objectives [7] and peer mentorship programs [8].

Having medical schools incorporate practice exams, as well as study skills into the curriculum, via one-on-one coaching programs with an academic facilitator or via group tutorials, could help ease the academic burden for newer medical students. Anecdotally, many medical students report formative assessments not being adequate guidance to prepare for actual medical examinations. Having practice examinations which simulate the real examination could help students know what to prepare for. Some universities, like Curtin University, have personalised, medicine-specific guidance services for newer medical students, while other universities, like Bond University, offer drop-in sessions available for students who are struggling with concepts.

Medical students' perceptions of self-efficacy have also been shown to be negatively correlated with academic burnout [9,10]. Empowering first year medical students by helping them develop personal strategies to direct their own learning can help to improve their mental wellbeing [9].

AMSA Calls upon Australian Medical Schools to:

1. Implement a formal bridging course for students entering medicine from a non-science or high-school background

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Earlier Clinical Encounters

Early clinical exposure in medical school and teaching the basic sciences alongside its application to clinical practice enhances medical students' understanding of their future role as a doctor [24], and can help clarify future career choices [25]. It also allows for the development of communication skills, building of confidence during patient interactions and introduction of the key medical and psychosocial issues involved in clinical care [16,26]. Furthermore, early patient contact seems to alleviate the perceived "shock of practice" experienced during the transition from preclinical to clinical years of medical education, preparing students for their work in a clinical setting [18].

The evidence supports clinical skills refreshers, clarification of roles and expectations, assessment processes and student-student handovers. This may be complemented by preclinical educational strategies such as enhancing content contextualization, further opportunities for the application of knowledge and skills, and constructive alignment of assessment tasks and pedagogical aims [23].

AMSA Calls upon Australian Medical Schools to:

1. Introduce and progressively expand upon clinically-correlated teaching and diagnostic reasoning early
2. Progressively introduce students to clinical environments throughout preclinical years

PRINTs

Research suggests that formal transition or clerkship courses, like the University of New South Wales' Preparation For Internship (PRINT) course, can improve the student-to-intern transition [42]. These clinically-oriented courses enhance procedural skills, operational management, and administrative tasks, aiding the shift from medical school to internship [42]. Internationally, programs like a one-week Internship Boot Camp, featuring simulations and Problem Based Learning, were considered the most helpful for internship preparation by 89% of participants [43]. However, not all Australian medical schools have dedicated PRINT programs, possibly leading to unpreparedness among graduates. Furthermore, these courses have only been implemented on a small scale and further research is required to determine the efficacy, sustainability and limitations of such initiatives to ensure provision of quality PRINT programs. The introduction of pre-internship placements in the final year of medical school is supported by the Australian Medical Association to better prepare graduates for the medical student to internship transition [44]. It is clear that there is a lack of consistency among medical schools, hence it is encouraged to formulate a blanket pre-internship programme with clear learning objectives, in addition to incorporating a gradual integration of clinical readiness throughout the medical degree.

AMSA Calls upon Australian Medical Schools to:

1. Use an evidence-based approach to incorporate pre-internship programs for final year students to assist with the student-to-intern transition process;

Policy Points

AMSA calls upon:

1. Australian medical schools to:
    a. Conduct formal research into:
        i. Factors impacting medical students during transition points;
        ii. The effectiveness of current medical school transition programs;
        iii. Survey medical students for their transitioning experiences;
    b. Develop, implement and regularly review:
        i. High quality, seamless and evidence based medical school transitions.
        ii. Mental health support accessibility, including for students located off-campus.
        iii. Transparent processes to seek and review feedback regarding transitions and the efficacy of support provided from students, staff, and other stakeholders, including placement providers;
        iv. A formal, optional, bridging course for students entering medicine from a non-science or high-school background;
        v. An evidence-based pre-internship program for final year students to assist with the student-to-intern transition process that does not significantly impact student December holidays;
    c. With regards to curriculum design to:
        i. Develop, implement and regularly review curriculum for both preclinical and clinical students which is clear, accessible and centralised;
        ii. Develop and incorporate appropriate teaching methods including problem-based learning (PBL) and simulation learning across the medical degree;
        iii. Clearly communicate assessment timelines and expectations;
        iv. Include regular formative assessment in preclinical and clinical learning;
        v. Introduce and progressively expand upon clinically-correlated teaching and diagnostic reasoning early;
        vi. Progressively introduce students to clinical environments throughout preclinical years;
        vii. Integrate “how to study” tips into the curriculum;
        viii. Regularly audit the delivery of teaching and feedback both on campus and at clinical sites through student feedback and evaluation of outcomes;

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ix. Ensure learning objectives for placements are clearly defined;
x. Facilitate closed-loop feedback from students on educator performance and curriculum quality, by utilising:
    1. Tutor feedback surveys;
    2. Focus group discussion; and
    3. Student representation for course feedback and on faculty planning committees.

d. Provide feedback to students on their performance for the purpose of continued learning and developments through:
    i. Individualised feedback;
    ii. Peer feedback;
    iii. Full practice examinations; and
    iv. Assessments.
e. Initiate or support inter-cohort peer mentoring programs incorporating professional, personal and academic factors:
    i. Integrating school-initiated mentor activities into the formal academic program with recognition towards course progress, and/or providing monetary compensation for student mentors;
    ii. Ensuring support for student-led programs does not place increased burden upon student organisations or compromise their autonomy.
f. Provide optional learning support tutorials for students struggling with concepts;
g. Identify non-academic barriers affecting students' medical school transition experience and provide support to address these barriers;
h. Provide financial and practical support to aid transition into university and clinical years through measures including but not limited to:
    i. Travel bursaries;
    ii. Subsidised accommodation;
    iii. Assistance in seeking mental and physical health support;
    iv. Ensuring all learning environments are accessible to students with disabilities;
    v. Accessible and transparent special consideration guidelines;
    vi. Support for students requiring financial assistance;
i. Support the training of hospital staff in supervising and teaching medical students in the clinical environment;
j. Provide information to final year students on the steps and transition into internship.

2. The Australian Medical Council to:
    a. Ensure that standards for accreditation of primary medical education, prevocational training, and specialist medical education and training are aligned such that completion of one stage is adequate preparation for the following stage of training;
    b. Require medical schools to include clinical skills and reasoning in teaching throughout the degree, and that this learning is reflected in assessments;
    c. Require medical schools to have a clear and well-communicated curriculum for students that is implemented and regularly audited;
    d. Require medical schools to support and utilise robust student feedback pathways and implement closed-loop feedback;
    e. Ensure that intern training authorities require hospitals and health services administering pre-vocational training programs to provide adequate induction and support to junior medical officers throughout their employment.
3. Hospitals and Health Services to:
    a. Implement appropriate, multifaceted clinical orientation programs for incoming medical students and medical graduates;
    b. Employ Intern support officers and the Medical Workforce Unit (MWFU) staff to provide support to interns;
    c. Ensure hospitals are accessible to all staff and students with disabilities;
4. Medical student societies to:
    a. Utilise established pathways and take advantage of new opportunities to provide feedback regarding inadequacies in current medical school transition programs;
    b. Consider, where possible, implementing peer learning and mentoring programs across different year levels (where not provided by the medical school);
    c. Establish or support clear and accessible feedback pathways for both preclinical and clinical students, with closed feedback loops.

Background

The Australian Medical Students' Association (AMSA) is the peak representative body for medical students. As such, AMSA advocates for issues regarding student wellbeing and success in the clinical field, both during and following medical school. Medical education in Australian universities is characterised by three key transitions: from undergraduate studies or secondary school to medical school, preclinical to clinical years, and from the final year of medical school to internship [1].

Overarching Issues within Transitions

Medical school transitions should be aimed at supporting the student through the novel demands of this period. This includes addressing perceived role discontinuity and uncertainty, and improving student wellbeing. Despite this, there are numerous problem areas that are consistent amongst all transition phases which compromise the quality of the transition, the welfare of medical students, and the safety of patients. The barriers faced within these medical school transition periods can be broadly divided into inherently linked three categories – professional, practical, and personal.

Professional issues relate to the new roles, conventions, and expectations faced within the novel setting of each transition, as well as the uncertainty regarding the growing professional identity expected of medical students as they advance through their studies.

Practical issues are associated with the increasing workload, expertise, and confidence that medical school necessitates with continued progression, increasing exponentially with clinical years and internship.

Personal issues involve the mental health aspects of the transition period, developing and maintaining wellbeing skills and coping mechanisms, and responding to novel emotional challenges within clinical practice. This often results in stress, burnout, and ultimately poor patient care [2]. Research has indicated that depression amongst medical students is already twice the population level, peaking at the transition from preclinical to clinical years [3]. Accentuating the already difficult aspects of the medical school transition are issues surrounding physical health, with the progression from secondary school to first year university marking an at-risk period for weight gain and unhealthy nutrition [4].

According to the Australian Medical Association, medical schools have a responsibility to incorporate evidence-based curriculum designed to maintain the health and wellbeing of medical students [5].

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Pillars of Transitions

Transitions in medical school present a considerable source of "challenge, ambiguity, and uncertainty" [6] while simultaneously affording a valuable opportunity to pivot from preclinical to clinical learning, and finally independent practice. Negotiating this difficult transition requires considerable collaboration between the medical faculty and hospital in order to establish strong skills for performing in a professional environment, ensure that wellbeing is maintained, and institute clear and accessible feedback and reporting pathways.

Subsequently, there is a need for considerable student support at the time of transition. Ensuring these transitions are managed effectively and that students are prepared for their next stage of practice is critical to both student welfare and the safety of patients. Despite the importance of this component of medical education, there is currently a paucity of research into relevant consequences and interventions.

While the timing and specifics of these transitions differ amongst universities, quality medical school transitions are broadly supported by:

- Exposure to clinical settings early in curriculum, incorporating clinically-correlated and simulation learning.
- Dedicated transition programmes and faculty support for such transitions.
- Peer and professional mentoring programs.
- Provision of clear expectations surrounding new learning styles and assessment.
- Problem-Based Learning programs (or similar).
- Practical ongoing support (e.g. clinical site orientation).
- Wellbeing support (e.g. counselling, financial aid, and flexible attendance).

<u>Within medical school</u>

Phase 1: Secondary School or Undergraduate studies to Medical school Transitioning to self-directed learning

Secondary education is largely teacher-centred while university education requires greater self-directed learning. Therefore, the academic difficulties that first-year medical students face in the transition from secondary school include having to adapt to independent learning, managing an increased workload and being responsible for their own learning [7].

Effective time management and developing into a self-directed learner improves academic achievement in the first-year of medical school. Other strategies to reduce

academic overload include supportive tutor-student relationships, formative assessments, having clear objectives [7] and peer mentorship programs [8].

Having medical schools incorporate practice exams, as well as study skills into the curriculum, via one-on-one coaching programs with an academic facilitator or via group tutorials, could help ease the academic burden for newer medical students. Anecdotally, many medical students report formative assessments not being adequate guidance to prepare for actual medical examinations. Having practice examinations which simulate the real examination could help students know what to prepare for. Some universities, like Curtin University, have personalised, medicine-specific guidance services for newer medical students, while other universities, like Bond University, offer drop-in sessions available for students who are struggling with concepts.

Medical students' perceptions of self-efficacy have also been shown to be negatively correlated with academic burnout [9,10]. Empowering first year medical students by helping them develop personal strategies to direct their own learning can help to improve their mental wellbeing [9].

Burnout

The transition from secondary to higher education is a demanding period for medical students. Half of all direct and graduate-entry medical students experience burnout within the first two years of medical school [11]. As student engagement during the first year of medical school may impact success in subsequent years, efforts should be made to address challenges such as adapting to the self-directed nature of university learning, academic overload and lack of clinical exposure [9]. Thus, an emphasis should be placed on learning how to study effectively, as studying without good learning techniques may result in increased workload [12].

Psychosocial difficulties of transition

Non-academic transition challenges faced by some first-year university students include moving residence and separating from family and friends. These potential challenges in transition must be supported effectively to prevent homesickness, loneliness and stress [13]. This also applies to other transitions within medical school which involve relocation. Mental health and wellbeing of students is covered in more depth in the Mental Health and Wellbeing Policy (2022).

Transition for medical students with disabilities

Medical students with disabilities also face additional challenges compared to non-disabled students, such as certain institutional and systemic factors leading to more academic and personal challenges in students with disabilities. Having student-

centred approaches to helping these students transition, such as having a good support system such as trusted mentors, is recommended [14].

Transitioning from a non-science background

Although there is limited quantitative research, anecdotally students from a non-science background report difficulties transitioning into a medical program with presumed science knowledge. Some universities, such as Monash University, provide a biology bridging course which may assist these students in transitioning into medical school [15]. Having bridging courses available for post-graduate medical schools may help students from non-science backgrounds and those who have been out of school for many years.

Transition from undergraduate studies to postgraduate medical school

Students transitioning from pre-medical university education to first-year medical school reported similar challenges as those transitioning from secondary school, including increased volume of information, time pressure and stress. Developing non-cognitive skills is therefore an important component of coping with these obstacles in the transition period [16]. Furthermore, receiving any level of clinical exposure, even when coming from a non-medical background, has been proven to make undergraduate students feel more competent when entering medical school, due to patient interactions and refining communication skills [16].

Phase 2: Preclinical to Clinical

The second phase of medical school transition from preclinical to clinical years is accompanied by various challenges, including the change in student role and curriculum structure, with these having implications on mental health.

Transformation in Student Role

There is a major shift in learning styles from classroom to vocational settings. Although immersive learning experiences are important for gaining essential skills, this change also requires more self-directed learning [17]. This transition from didactic learning to active participation in a clinical team can lead to confusion amongst medical students about their roles and responsibilities. Transitioning students reported issues including insufficient feedback and supervision, unclear role expectations, and a self-perceived inadequacy in knowledge; all which contributed to feelings of uncertainty [18]. Additionally, students also reported feeling unprepared for the emotional impact of clinical experiences, such as dealing with death and patient trauma.

Changes to Curriculum

Students have reported a lack of clarity regarding the breadth of the syllabus and expected knowledge during clinical years [18]. With lectures delivered by various professionals, there may be conflicting consensus on the syllabus. This lack of a proper systematic framework for students to anchor their learning, lead to difficulties in organising and consolidating their learning. While more research is warranted to evaluate how medical school curriculums can be adjusted to assist students with the transition to a clinical year, adequate support also needs to be given to students to cope with the curriculum.

Implications on Mental Health

Given the significant change in student roles and curriculum from a pre-clinical to a clinical environment, this transition phase may have detrimental effects on medical students' wellbeing if they are unprepared. Increased stress and anxiety are common in this phase, with clinical years showing a notable rise in burnout severity, with some instances being linked to depressive symptoms [19]. Burnout may hinder concentration and affect the student's ability to pass courses, leading to a vicious cycle which may further impact mental health [20].

Solutions for Phase 1&2

Structured Orientation

Structured orientation programs are an effective measure of easing students into a new environment. For students commencing medical school, orientation courses can provide a 'learning roadmap' of the years of medical school ahead and allow students to develop an understanding of 'how to learn' [21]. Similarly, studies have demonstrated a need for a purposeful structured orientation for students transitioning into their first clinical year to allow students to familiarise themselves with a professional placement setting where student roles are clearly defined by faculty [17].

This allows for students to adjust their expectations of the student role when navigating each phase of transition, hence reducing uncertainty and anxiety in a new environment [22]. Effective orientation programmes may ease students into each period of transition, whilst providing them with the essential skills and support to succeed.

Earlier Clinical Encounters

The evidence supports clinical skills refreshers, clarification of roles and expectations, assessment processes and student-student handovers. This may be complemented by preclinical educational strategies such as enhancing content

contextualization, further opportunities for the application of knowledge and skills, and constructive alignment of assessment tasks and pedagogical aims [23].

Early clinical exposure in medical school and teaching the basic sciences alongside its application to clinical practice enhances medical students' understanding of their future role as a doctor [24], and can help clarify future career choices [25]. It also allows for the development of communication skills, building of confidence during patient interactions and introduction of the key medical and psychosocial issues involved in clinical care [16,26]. Furthermore, early patient contact seems to alleviate the perceived "shock of practice" experienced during the transition from preclinical to clinical years of medical education, preparing students for their work in a clinical setting [18].

Examples of early clinical exposure include weekly out-patient interactions for first year medical students and work-integrated learning [16,26]. Clinically-correlated anatomy programs maximise the academic achievement and learning experience of first year medical students [27]. Additionally, early clinical learning opportunities can be well implemented within primary care settings, given the extensive diversity of diseases and patients across various age groups and sociocultural backgrounds. [25]

Problem-based learning (PBL)

Overall, the integration of clinical sciences with basic sciences effectively promotes active learning strategies and can help first year students develop an understanding of the learning roadmap. This can be achieved through programs such as PBL tutorials (or similar), large-classroom lectures, role-play with simulated patients and team-based learning [21].

PBL improves the learning outcomes of first year medical students while enhancing their interest in the clinical aspects of human biology [28]. Compared to the didactic lecture-style format, students taught through a PBL format performed better academically and were better able to correctly answer questions testing the application of knowledge in clinical situations [29]. PBL programs also help students gain an appreciation of the accumulating body of knowledge needed in medical practice and improve reflection on their own learning and self-efficacy, enabling students to be better self-directed learners [30]. Nevertheless, adaptation to PBL in the first year of medical school is challenging for secondary school graduates who are unaccustomed to self-directed learning. Interventions to foster problem-finding in PBL cases, including encouragement from tutors and reinforcement using self-assessment, facilitate the acquisition of problem- finding skills in first year medical students [31]. PBL students eventually grow comfortable with the new autonomy

and embrace the independence and responsibility over their own learning. They also become more motivated to learn which facilitates the transition to clinical years, while students who have largely lecture-based teaching experience a more difficult transition [32].

Further teaching strategies

Faculties can adopt teaching approaches tailored to the learning styles of individual students, such as by developing teaching tools that facilitate multimodal learning [33]. Additionally, simulation learning can be implemented to effectively increase students' knowledge and skills in patient care, as well as empathy and understanding across a variety of clinical settings such as caring for the elderly or when conducting a brief alcohol intervention [34].

Mentoring

Peer mentoring programs led by senior medical students promote professional and personal development while also providing important psychosocial support during critical transition periods [11]. When transitioning to university, peer mentoring helps first-year students adjust to campus life, reduces perceived stress and facilitates personal development by building self-confidence, teamwork skills and time management [35]. Peer assessment offers students the opportunity to reassess and improve their interpersonal skills and work habits [33]. Successful mentoring may also involve members of the general community. For example, a program matching first-year medical students with adults aged over 65 was shown to improve students' competency with caring for older patients, and was well-received with minimal attrition [36].

<u>After Medical School</u>

Phase 3: Pre-internship Year - Internship

Main Issues

Preparing medical graduates for the role of a junior doctor is a shared end goal of education providers and healthcare employers; however, the transition is often stressful, with some feeling unprepared and experiencing "transition shock," despite many Australian graduates reporting feeling ready for clinical practice. [37]

There are significant discrepancies between medical schools in terms of levels of preparedness for work [1]. Basic skills required of a doctor such as decision making, prescribing, treatment and practical skills were among the most worrisome. [38]. Difficult areas of transition include dealing with violent patients, communicating with patients who may have mental illness, calculating drug doses and working with

patients who may be using complementary alternative medicines [1]. Graduates may therefore require additional support for these related skills.

Problem Area 1: Clinical Practical Skills

Although there have been improvements in general preparedness, students still report deficiencies in clinical and practical skills as a major concern [39]. Commonly inadequate clinical skills include safe drug prescribing, certain practical procedures (e.g., nasogastric tube insertion),diagnosis and decision-making. [40].

Notably, students and recent graduates have expressed their dissatisfaction with the current curriculum being more passive compared to traditional 'clerkship' approaches and teaching ward rounds, which provide students with more opportunities for active decision making [41]. This highlights the lack of practical components in the current curriculum that lead to graduates being underprepared for internship.

Problem Area 2: Difficult Communication

In addition to basic competencies, both graduates and hospital supervisors expressed concern about interns' ability to deal with situations in which communication may be difficult, including breaking bad news, aggression, and mental illness [42]. Students acknowledge having teachings and discussions for difficult communications in their courses but they had little opportunities to practice, leading to low confidence [43].

Problem Area 3: Overall Confidence Level

Although students generally have competence in areas such as history taking and examination and are able to seek help to further their knowledge and skill set, they may have low confidence when beginning their internship due to aforementioned areas of concern [44]. Concerningly, studies have found that even after a year of internship, graduates can still have low confidence in some areas despite having encountered or conducted these procedures in their training [40]. This highlights the importance of providing feedback frequently both throughout the degree and as training commences to help maintain and improve students' confidence level.

Problem Area 4: Transfer of Information (TOI)

Currently there is no infrastructure or system for information transfer regarding students' physical and mental health from medical school to internship. Such transfer of information without students' consent may result in discrimination and additional pressure in the transition to internship. Alternatively, it may enable health services to provide, and empower interns to access appropriate support services.

Possible Solutions

Interventions to address the lack of preparedness from medical school to internship can be addressed at three levels: educational, social, and developmental [38].

Educational Interventions

Early and gradual integration of clinical knowledge and diagnostic reasoning in medical students' education is important to ease the transition process. [45] For this, medical schools should be encouraged to incorporate problem based learning (PBL) into the curriculum at an early stage. Medical schools that used PBLs and offered early patient contact produced graduates better prepared for internships [1]. Although PBL has been recognized as a teaching method for decades, its use in medical education can be limited [46]. To better prepare students for internships, incorporating more PBL and patient interaction is recommended. Research suggests that formal transition or clerkship courses, like the University of New South Wales' PRINT (preparedness for internship) course, can improve the student-to-intern transition [47]. These clinically-oriented courses enhance procedural skills, operational management, and administrative tasks, aiding the shift from medical school to internship [47]. Internationally, programs like a one-week Internship Boot Camp, featuring simulations and PBL, were considered the most helpful for internship preparation by 89% of participants [48]. However, not all Australian medical schools have dedicated PRINT programs, possibly leading to unpreparedness among graduates. Furthermore, these courses have only been implemented on a small scale and further research is required to determine the efficacy, sustainability and limitations of such initiatives to ensure provision of quality PRINT programs. The introduction of pre-internship placements in the final year of medical school is supported by the Australian Medical Association to better prepare graduates for the medical student to internship transition [49]. It is clear that there is a lack of consistency among medical schools, hence it is encouraged to formulate a blanket pre-internship programme with clear learning objectives, in addition to incorporating a gradual integration of clinical readiness throughout the medical degree.

Social Interventions

Hospitals equipped with a dedicated Intern support officer and Medical Workforce Unit (MWFU) to provide orientation to support interns, workplace support and teaching, especially from junior colleagues, are highly valued during the demanding intern transition [50,51]. Furthermore, the need for additional support for interns is compounded by the prevalence of mental health problems among junior doctors. A randomised controlled study conducted at a tertiary teaching hospital in Australia showed that optional peer mentoring programs for first year medical interns enhances junior doctor support structures, job satisfaction, and psychosocial

wellbeing compared with participants without mentors [52]. Thus peer-led mentoring programs for interns should be considered nationally, as such programs can reduce the burden of mental health problems amongst junior doctors, build a sense of community and help them navigate their new professional environment. [52].

Developmental Interventions

Usage of portfolios to encourage reflection and transferable learning can enhance the resilience of medical students and support their professional development [53]. Enhancing reflective practice in medical training is an effective but often overlooked way to help students cope with transitions [53]. Therefore, this is a strategy that should be implemented across Australian medical schools.

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Policy Details:

Name: Medical School Transitions

Category: C – Supporting Students

History: Reviewed Council 3, 2024

Helen Ou, Sewmini Idirimanna, and Tharshyinie Prabaharan; with Sapumal Gunaruwan (National Policy Mentor), Jonathon Bolton (National Policy Officer), and Harry Luu (National Policy Secretary).

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