UNIVERSITY OF

Otago

FACULTY OF MEDICINE

Clinical Skills in the Undergraduate Medical Curriculum

An Overview Map

Faculty Clinical Skills Working Party

2013

UNIVERSITY of OTAGO
Te Whare Wānanga o Otāgo
NEW ZEALAND

Introduction

Mastery of clinical skills (CS) is central to the transformation of a medical undergraduate student into a competent health professional fit for medical practice. A clinical skill is defined as any discrete and observable act within the overall process of patient care.[1]

In the Otago undergraduate course CS are defined as including those skills required during patient-doctor interactions and additional communication skills required during interactions with other health professionals. There are therefore 4 main groups or categories of CS:

(1) Clinical skills, including communication skills, required during the traditional doctor-patient consultation
(2) Additional communication skills required during other doctor-patient interactions
(3) Clinical skills, including communication skills, required for effective intraprofessional and interprofessional interactions
(4) Procedural skills

For curriculum purposes clinical skills does not include student to student communication and interactions, or interactions between an individual doctor and patient groups or between the profession and the public, such as in health education and advocacy.

(1) The traditional doctor-patient consultation incorporates several skills and components which, when effectively combined, constitute an advanced and complex skill. The consultation begins with the patient presentation and concludes with the formulation of a plan. Along the way it involves general interview skills, specific medical history taking, examination, clinical reasoning/problem solving, explanation and planning/shared decision-making, and finally documentation of the consultation. Clinical reasoning extends beyond the doctor-patient interaction so the component represented within the CS curriculum is recognised as being only part of the complete process.

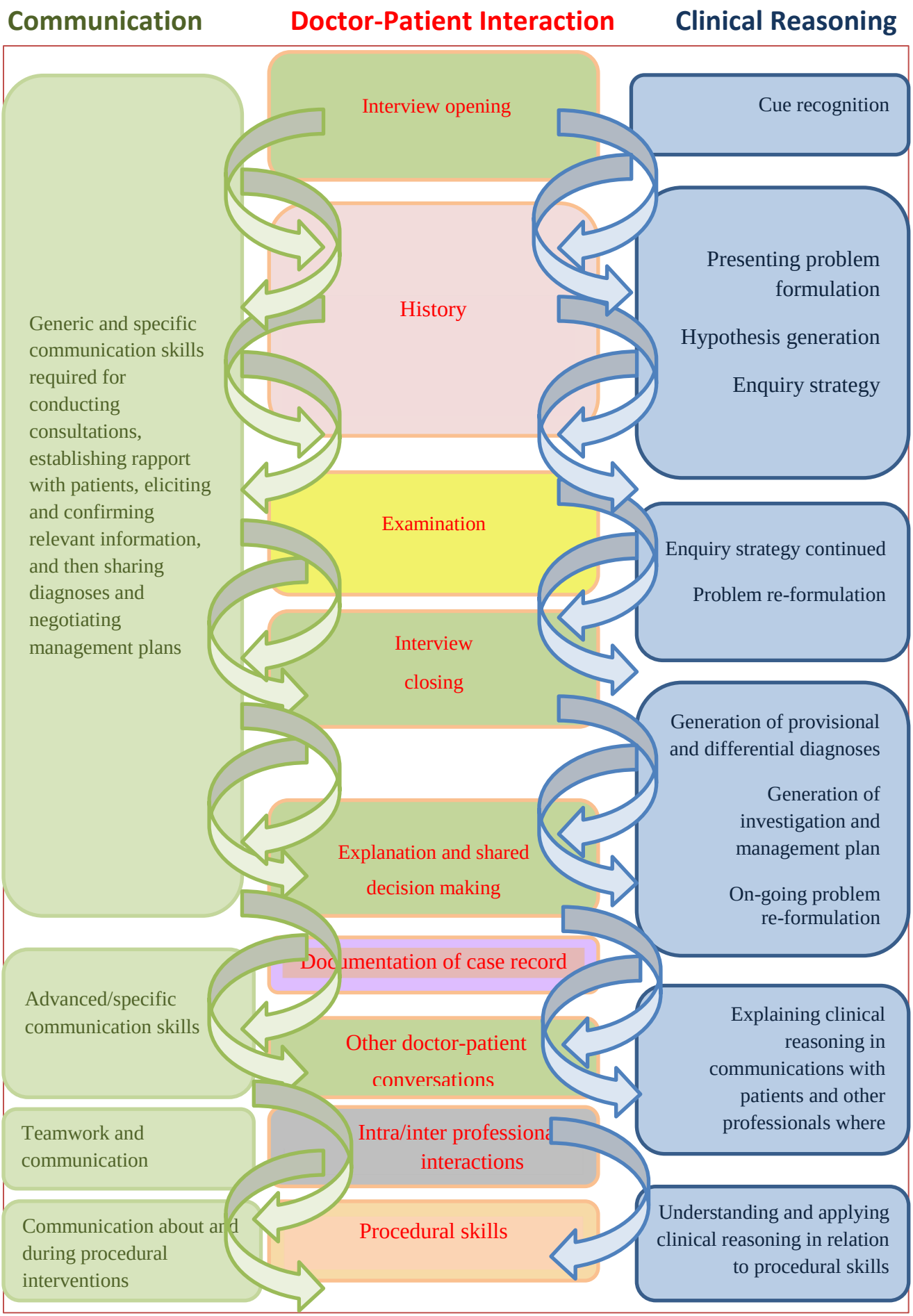
(2) Additional communication skills required during other doctor-patient interactions include all communications between doctors and patients outside of the traditional consultation e.g. specific explanation of treatment options and seeking of consent, and some more complex and advanced communication skills which can be required either within or outside of a consultation e.g. dealing with an angry patient, dealing with a potential case of NAI (non-accidental injury), open disclosure conversations.

(3) Clinical skills required for effective intraprofessional and interprofessional interactions are largely communication skills (both verbal and written) but also include knowledge and skills in effective teamwork. Teamwork is simply defined as the cooperative effort by two or more people to achieve a common goal and effective communication is a key component of effective teamwork.

(4) Procedural skills involve an actual physical manoeuvre or intervention which may or may not require specific equipment and which may be undertaken for either investigative/diagnostic (beyond standard examination) or therapeutic/management purposes. Their execution requires both psychomotor skills and background knowledge. When undertaken each procedure should be underpinned by sound clinical reasoning.

The division of CS into 4 categories and into discrete components within these categories is necessary for curriculum purposes despite the reality of clinical practice where these skills overlap and are often performed simultaneously. The relationship between these components is represented in the following graphic.

1. Association of American Medical Colleges. Recommendations for Clinical Skills Curricula for Undergraduate Medical Education2005: Available from: https://www.aamc.org/download/130608/data/clinicalskills_oct09.qxd.pdf.pdf.



The following document attempts to provide an overview map of core CS and to indicate the level of acquisition at each stage of training (ELM years 2/3, ALM years 4/5 and ALM year 6/TI year). Despite the format of the document it should not be interpreted as suggesting that CS are acquired as discrete entities at single points in time or stages of training. The document attempts therefore not only to allocate certain skills and levels of learning to specific stages of training but also to reflect the fact that CS are learnt in a progressive fashion by deliberate repetitive practice and that learning is progressive from the unskilled novice stage through to that of the expert where ongoing performance continues to be required for skills to be maintained. The intention in allocating levels of acquisition to certain stages of training is to provide a general indication of the component of the medical programme which should assume major responsibility for the teaching/learning of the skill and at which point competency in a particular skill might reasonably be expected and therefore be able to be assessed.

Definitions

The Faculty CS working party has agreed on the following definitions for the purposes of this document.

A clinical skill is any discrete and observable act within the overall process of patient care.

Included are all those skills required during patient-doctor interactions and in addition communication skills required during interactions with other health professionals as part of patient care.

Procedural skills involve an actual physical manoeuvre or intervention which may or may not require specific equipment and which may be undertaken for either investigative/diagnostic (beyond standard examination) or therapeutic/management purposes. Their execution requires both psychomotor skills and background knowledge. When undertaken each procedure should be underpinned by sound clinical reasoning.

Clinical skills therefore include some which are essentially cognitive (rather than psychomotor) in particular the skills of clinical reasoning. These cognitive skills are made observable (and therefore measurable/assessable) by being explicitly articulated or communicated – either orally or in writing.

Clinical reasoning guides a clinician, through ongoing critical analysis, evaluation, and synthesis, to gather information/evidence in order to translate a patient's problems into a coherent diagnostic formulation and management plan.

There are a variety of approaches to clinical reasoning that depend upon the clinical context, the knowledge and experience of the clinician, and on the nature of the clinical problem(s). Like other clinical skills, clinical reasoning is gained through deliberate repetitive practice, and is reliant upon explicit teaching and assessment.

The teaching, learning and assessment of clinical reasoning should not just focus on outcomes (as people can stumble on the right outcome for the wrong reason), nor just on process (since this will be dependent on experience and context), but needs to focus also on the metacognitive aspects, or the individual's insight into his or her own cognitive processes. This is helped by students and teachers articulating, and making explicit, how they reached their conclusions, and by taking account of the learner's level of knowledge and the nature of the clinical problem.

Competence is the state of being competent. Competence is a property of a person in relation to a particular skill i.e. it is skill or task specific. It varies along a continuum of degree (is not all-or-nothing), is dynamic, and is both acquired and maintained by deliberate repetitive practice. Moreover, it can deteriorate without such repetitive performance.

For the purposes of this document a student is competent at a skill when they can independently perform the skill safely and effectively in the clinical setting. Competence at a skill, especially in relation to procedural skills, does not

necessarily equate to successful completion of the skill on every occasion but does require the recognition of an individual's limitations and recognition by that individual of specific circumstances where assistance should be sought.

A competency is an integrated collection of clinical skills and related knowledge required in order to achieve a specified component or task of clinical practice.

Levels of achievement beyond competence are not usually attained in the undergraduate years. Higher levels of performance and functioning (often referred to as proficiency and expertise) require competence as a prerequisite but in addition require and reflect additional features such as substantial personal experience, personal accountability, performance in a variety of circumstances including uncommon and complex ones, the ability to recognise, anticipate and manage difficult and unexpected scenarios, and the capacity to continue to function safely and efficiently in the face of pressure and uncertainty.

Levels of learning

In addition to the above definitions this document utilises the following descriptions of levels of learning based on a modification of Miller's pyramid such that these levels can be equally well applied to all clinical skills – whether predominantly cognitive/affective, psychomotor or a combination.

Knows about the skill:

This includes knowledge about the skill, including underlying theory behind the practice. In relation to procedural skills it involves knowledge of indications, contraindications, potential complications and alternate strategies or approaches if the skill is unsuccessful or unable to be performed.

Knows how to perform the skill:

This requires knowledge of the actual practice of the skill. In relation to procedural skills it includes not only the procedure itself but also the post-procedure care of the patient and/or specimens obtained. The student should be able to offer a simple explanation of the procedure to a patient and this would normally require that the student has observed the procedure on at least one occasion.

Shows how to perform the skill:

This requires the student to be able to demonstrate performance of the skill but does not indicate or equate to competence at the skill. This would apply to skills performed at least once in the clinical environment or in a simulated setting but the experience and opportunities are insufficient to amount to the achievement of competence at the skill.

Does the skill:

This level of learning indicates that the student is competent at the skill i.e. can independently perform the skill safely and effectively in the clinical setting. Competence, especially in relation to procedural skills, does not necessarily equate to successful completion of the skill on every occasion but does require the recognition of an individual's limitations and recognition by that individual of specific circumstances where assistance should be sought.

The following tables of core competencies in clinical skills are divided into 4 sections consistent with the categories of CS described above and set out as below.

The learning outcomes are additive across the stages of training – building on each other from the end of ELM (2/3) to end of ALM (4/5) and end of ALM (TI/6) – and therefore each appears only once in the table even though outcomes achieved in earlier stages of the training continue to be expected in later stages.

Detailed lists of specific skills in communication, history taking and examination, clinical reasoning and procedural skills appear in the appendices at the end of the document.

Table Part 1: Doctor-patient consultation

		Core competencies to be achieved and/or assessed within each stage of training			
Consultation Skills	Communication			ALM (TI/6)	Clinical Reasoning
			ALM (4/5)	→	
		ELM (2/3)	→	→	
Managing the consultation process					
History					
Examination					
Formulation					
Explanation and shared decision-making					
Documentation					

Table Part 2: Additional doctor-patient communication skills

		Core competencies to be achieved and/or assessed within each stage of training		
Specific/advanced communication skills with patients	Examples			ALM (TI/6)
			ALM (4/5)	→
		ELM (2/3)	→	→
(a) Within specialised clinical contexts and consultations				
(b) Outside of the traditional consultation				
(c) With family/whanau and others such as carers				
(d) Using communication media other than face-to-face verbal and written communication				

Table Part 3: Clinical Skills required for effective intraprofessional and interprofessional interactions

		Core competencies to be achieved and/or assessed within each stage of training		
Clinical Skills required for effective intraprofessional and interprofessional interactions	Examples			ALM (TI/6)
			ALM (4/5)	→
		ELM (2/3)	→	→
Oral communication skills				
Written communication skills				
Teamwork skills				

Table Part 4: Procedural skills

	Core competencies to be achieved and/or assessed within each stage of training		
Procedural Skills			ALM (TI/6)
		ALM (4/5)	→
	ELM (2/3)	→	→
(1) General approach to procedural skills			
(2)(a) Specific procedural skills - does or shows how to do			
(2)(b) Specific procedural skills - knows how to do or knows about by the end of the Trainee Intern year:			

TABLE Part 1: Doctor-patient consultation: Managing the consultation process (see also Appendix One)

		Core competencies to be achieved and/or assessed within each stage of training			
Consultation Skills	**Communication**			**ALM (TI/6)**	**Clinical Reasoning**
			ALM (4/5)	→	
		ELM (2/3)	→	→	
Managing the consultation process **(structure /organisation and relationship)** Information: - Eliciting - Deciding - Imparting - Recording		Ensure correct identification of patient Re-check consent for student learning /participation Initiate the interview, identify the patient's perspective and set the agenda Establish and build the relationship with the patient Gather information including from the patient's perspective Summarise and close an interview Understand the importance of cultural competence	Understand and incorporate both the structural and relational components of interviewing to facilitate medical interviewing Incorporate cultural awareness and sensitivity into all patient consultations Conduct age-appropriate consultations	Adapt both structural and relational components of the interview to match the individual patient and clinical context Specifically adapt communication and interview styles to fit the individual patient	

History Taking Skills in consultation (see also Appendix Two)

<table>
<tr><td></td><td></td><td colspan="3">Core competencies to be achieved and/or assessed within each stage of training</td><td></td></tr>
<tr><td rowspan="3">Consultation Skills</td><td rowspan="3">Communication</td><td colspan="2"></td><td>ALM (TI/6)</td><td rowspan="3">Clinical Reasoning</td></tr>
<tr><td></td><td colspan="2">ALM (4/5) →</td></tr>
<tr><td colspan="3">ELM (2/3) → →</td></tr>
<tr><td>History

(process and content)

(eliciting information)</td><td>History taking</td><td>Elicit key symptoms and explore these in a systematic fashion

Incorporate the patient’s perspective and context

Focus on symptoms and consider what causes them</td><td>Take a systematic and comprehensive history of common and potentially serious clinical problems

Seek both positive and negative features

Take a focused history in some specialised clinical contexts

Incorporate both the medical and patient perspectives into problem identification and formulation, and use to guide examination</td><td>Adapt the type of history taken to fit the clinical context

Take a history in more challenging circumstances when the patient is not communicating clearly

Efficiently sort relevant from irrelevant information

Clarify which elements of the history are independent and which are inter-related

Efficiently process information to formulate the number of problems and their relationships</td><td>Cue recognition
↓
Presenting problem formulation
↓↑
Hypothesis generation
↓↑
Enquiry strategy</td></tr>
</table>

Examination Skills in Consultation (see also Appendix Three)

<table>
<tr><td>Consultation Skills</td><td></td><td colspan="3">Core competencies to be achieved and/or assessed within each stage of training</td><td></td></tr>
<tr><td rowspan="3">Examination</td><td rowspan="3">Communication</td><td colspan="2"></td><td>ALM (TI/6)</td><td rowspan="3">Clinical Reasoning</td></tr>
<tr><td></td><td colspan="2">ALM (4/5) →</td></tr>
<tr><td colspan="3">ELM (2/3) → →</td></tr>
<tr><td>Examination

(process and content)

(eliciting information)</td><td></td><td>Perform individual components of examination including observation, palpation, percussion and auscultation

Incorporate these components into examination of isolated body systems or regions

Based on patient’s presenting symptoms/ problems identify the relevant body systems/regions which should be examined</td><td>Perform a systematic complete examination in an adult (male and female), a child, an infant, and an older person

Perform a specific examination of a body system/region

Recognise and describe normal and abnormal findings

Perform a focused examination of a body system/region as indicated by information gained from the history</td><td>Clarify the problem(s) by adapting the examination according to the history obtained and clinical context

Perform an appropriately focused examination

Integrate and simultaneously perform history taking and physical examination

Recognise and examine the acutely unwell patient</td><td>Enquiry strategy continued

Revision of hypotheses

↑↓

Revision of problem formulation</td></tr>
</table>

Formulation (clinical reasoning) skills in consultation

(see also Appendix Four)

Consultation Skills		Core competencies to be achieved and/or assessed within each stage of training			
	Communication			ALM (TI/6)	Clinical Reasoning
			ALM (4/5)	→	
		ELM (2/3)	→	→	
Formulation **(deciding/decisions based on the Information)**		Combine the patient's perspective, the medical history and the examination findings to begin to re-formulate the problems from the medical perspective Explain the relationship between symptoms and signs and pathophysiology	Combine the patient's perspective, the medical history and the examination findings to re-formulate the initial problems into a problem list Cluster problems that relate to each other Identify urgent and active problems Explain the relationships between the different clinical problems and the underlying pathophysiology	Appropriately prioritise urgent vs non-urgent, active vs inactive and new vs established problems	**Problem re-formulation**
			Generate a differential diagnosis list Explain how these were reached Maintain a broad diagnostic focus and differential list. Incorporate the context and patient perspective in the problem list and management plan Develop an initial investigation and management plan Relate the management of the problems to underlying pathophysiology	Develop an initial investigation and management plan prioritising urgent problems Know when and how to call for assistance Identify the impact of the management plan on all patient problems Be able to effectively present and share this information in oral format	**Generation of provisional and differential diagnoses** **Generation of investigation and management plans** **On-going problem re-formulation**

Explanation and shared decision making, and documentation skills in consultation

(see also Appendix One)

		Core competencies to be achieved and/or assessed within each stage of training			
Consultation Skills	**Communication**			**ALM (TI/6)**	**Clinical Reasoning**
			ALM (4/5)	→	
		ELM (2/3)	→	→	
Explanation and shared decision-making **(imparting information)**	**Explanation and shared decision-making**	Offer some explanation to the patient of relatively straight forward and common symptoms Be aware that decisions are a partnership with the patient and understand why this is important Explain the benefits and challenges of patient involvement in decisions	Explain to the patient the diagnosis and plan using appropriate language Be able to explain how the patient's perspective should be incorporated into shared decisions Engage a simulated patient in shared decision-making	Engage with the patient and the team in shared decisions	
Documentation skills **(recording information)** **(see also table Part 3 for intra/inter-professional documentation skills)**	**Case record/notes** **(see also table Part 3 for oral case presentation skills)**	Record the relevant findings from the patient interaction in the appropriate format/structure	Make a comprehensive, accurate, legible and systematic record of the consultation in which the problem list and formulation logically derive from the history and examination findings Document provisional and differential diagnoses including an indication of how these were reached Document an investigation and management plan	Make a comprehensive but concise and accurate case record emphasising relevant information Document the team's treatment plan and monitoring orders within case records enabling efficient and effective handover of care Keep clinical records including the problem list up-to-date as patient problems change over time	

TABLE Part 2: Additional doctor-patient communication skills

(see also Appendix One)

Specific/Advanced Communication Skills with patients		**Core competencies to be achieved and/or assessed within each stage of training**		
	Examples			**ALM (TI/6)**
			ALM (4/5)	→
		ELM (2/3)	→	→
(a) Within specialised clinical contexts and consultations	Communicating with individuals with communication difficulties/impairments Discussing potentially sensitive and stigmatizing topics/issues such as sexual history, STIs, potential abuse (domestic, elder or child), HIV, mental illness Conducting consultations within emotionally laden situations e.g. the angry patient, the distressed patient Consultations /communications requiring an interpreter	Understand that different communication strategies are required for consultations in specialised contexts	Know when different approaches /communication skills are needed Where appropriate observe, perform or participate in these specialised consultations alongside the clinical team Attempt some of these specialised communications in simulated contexts	Undertake initial management of these specialised consultations Recognise situations where assistance should be sought
(b) Outside of the traditional consultation	Obtaining consent for provision of health services Breaking bad news End-of-life conversations including DNACPR discussions and discussions about transition from curative to palliative care Open disclosure conversations Dealing with complaints	Understand the different nature of these communications /conversations and why advanced communication skills are required	Where appropriate observe and participate in these conversations alongside the clinical team Attempt these specialised conversations in simulated contexts	Where appropriate and under supervision conduct some of these specialised conversations Recognise situations where assistance should be sought

(c) With family /whanau and others such as carers	Obtaining a collateral history Engaging and discussing patient care as appropriate with significant others e.g. family, carer	Identify the different nature of relationships and conversations with individuals other than the patient including the boundaries required by respect for privacy and confidentiality	Identify situations where engagement with individuals other than the patient is appropriate Where appropriate and under supervision conduct these conversations	Conduct appropriate conversations with individuals other than the patient
(d) Using communication media other than face-to-face verbal and written communication	Communicating with patients and colleagues by phone conversations, fax and other electronic media		Understand the risks and challenges/difficulties of communicating via these media, especially in relation to maintaining patient privacy and confidentiality and appropriate personal and professional boundaries Attempt to communicate effectively and safely using different modes of communication according to context	Competently handle information and communication using multiple modes of communication

TABLE Part 3: Clinical skills required for effective intraprofessional and interprofessional interactions

(see also Appendix One)

Clinical skills required for effective intra/ interprofessional interactions - including communication skills (oral and written) and teamwork		**Core competencies to be achieved and/or assessed within each stage of training**		
	Specific Examples			**ALM (TI/6)**
			ALM (4/5)	**→**
		ELM (2/3)	**→**	**→**
Oral communication skills	**Oral Case Presentation Skills**	Engage and orientate colleagues to the case	Deliver relevant detail with clarity and in a logical order	Present a formulation of the problem, transparent interpretation of data and a purposeful conclusion
	Oral handover and collegial consultation/referral skills			Clarify the identity of the participants and indicate clearly the purpose of the communication (ISBAR) Summarise the situation, assessment and response required/sought (ISBAR)
Written communication skills **(documentation)**	**Intra/interprofessional documentation skills e.g. collegial consultations/referrals, investigation requests/orders, discharge summaries, death certificates**	Understand the importance of accurate, legible, dated and authored documents	Complete investigation requests under supervision	Complete collegial consultation requests/referrals and discharge summaries under supervision Write prescriptions, drug and fluid orders under direct supervision Know how to write some important medical documents with legal standing

Clinical skills required for effective intra/ interprofessional interactions - including communication skills (oral and written) and teamwork continued		**Core competencies to be achieved and/or assessed within each stage of training**		
				ALM (TI/6)
			ALM (4/5)	→
		ELM (2/3)	→	→
Teamwork skills	**Teamwork**	Understand the nature of teams and teamwork Begin to understand the functions/purposes and types of communication used in teamwork Begin to understand the different values, roles, expertise and responsibilities of different health care professionals Understand the importance of effective collaboration within and between both intraprofessional and interprofessional teams	Understand the barriers and facilitators to effective teamwork including communication within teams Identify and analyse both good and poor teamwork including the communication components Develop skills for communicating and collaborating effectively with all members of the clinical health care team, including skills in managing conflict Understand the importance of effective collaboration between health care teams and the larger health system	Function competently as a member of an inpatient based health care team Function competently as a member of an ambulatory patient based health care team Communicate and collaborate effectively with other health teams involved in the care of the patient and with health care systems Understand the importance of communicating and collaborating effectively with professional and external regulatory bodies

TABLE Part 4: Procedural skills

(see also Appendix Five for specific procedural skills)

	Core competencies to be achieved and/or assessed within each stage of training		
Procedural Skills			**ALM (TI/6)**
		ALM (4/5)	**→**
	ELM (2/3)	**→**	**→**
General approach to procedural skills	Begin to appreciate the place of procedural skills within clinical practice	Develop a systematic approach to learning about and performing procedural skills Perform selected procedural skills in simulated contexts and on patients under supervision	Competently perform selected procedural skills Understand and be involved as part of the clinical team in a range of more complex and risky skills Use a systematic approach to acquiring new procedural skills

Appendix One: Communication and Teamwork Skills

Communication and Teamwork Skills	ELM 2/3	ALM 4/5	TI/6
(1) Interview skills - Managing the consultation process			
Initiate the clinical interview:			
Re-check consent for student learning/participation	Does	Does	Does
Confirm correct identification of the patient	Does	Does	Does
Open the consultation, set the agenda & elicit and consider the patient's perspective	Shows how	Does	Does
Establish and build a relationship with the patient:			
Use appropriate non-verbal communication and empathic reflection, demonstrate respect and concern regardless of the patient's problems or personal characteristics	Shows how	Shows how	Does
Gather information:			
Use appropriate screening questions, balance open and closed questions, avoid leading questions, listen attentively, respond to cues, facilitate discussion, structure signpost and prioritise within the consultation	Shows how	Shows how	Does
Summarise and close the interview	Shows how	Shows how	Does
Conduct an age-appropriate consultation with:			
an adult	Shows how	Shows how	Does
a child	Knows about	Shows how	Does
a parent/guardian of a young child/infant/baby	Knows about	Shows how	Does
an elderly person	Knows about	Shows how	Does
Explanation and shared decision making:			
Assess patient's start point and main questions, using response as a guide on to how to proceed	Knows how	Shows how	Does
Organise explanation into sections, using signposting	Knows how	Shows how	Does
Check patient's understanding and encourage questions regularly	Knows how	Shows how	Does
Lay out management options, and determine patient preferences, motivate and encourage behaviour change	Knows about	Shows how	Does
Negotiate a mutually acceptable way forward and check understanding and acceptance	Knows about	Shows how	Does
Manage time within the consultation	Shows how	Shows how	Does
Conduct culturally appropriate and sensitive consultations with individuals from diverse backgrounds including specifically:	Knows about	Shows how	Does
Maori	Knows about	Shows how	Does
Pacific people	Knows about	Shows how	Does
(2) Specific/Advanced Communication Skills with patients			
(a) Specific/Advanced communication skills **within specialised clinical contexts and consultations:**			
Communicate with individuals with communication difficulties/impairments	Knows about	Shows how	Shows how
Discuss potentially sensitive and stigmatizing topics/issues such as sexual history, STIs, potential abuse (domestic, elder or child), HIV, mental illness, substance abuse	Knows how	Shows how	Shows how
Conduct consultations within emotionally laden situations e.g. the angry patient, the distressed patient	Knows how	Shows how	Shows how
Conduct consultations/communications requiring the use of an interpreter	Knows about	Shows how	Shows how

	ELM 2/3	ALM 4/5	TI/6
(b) Specific/Advanced communication skills **outside of the consultation:**			
Obtain informed consent for provision of health services	Knows about	Knows how	Shows how
Breaking bad news	Knows about	Knows how	Shows how
End-of-life conversations e.g. including advance care planning, advance directives; DNACPR discussion; discussion about transition from curative to palliative care	Knows about	Knows how	Knows how
Open disclosure conversations	Knows about	Knows about	Knows how
Dealing with complaints	Knows about	Knows about	Knows how
(c) Specific/Advanced communication skills **with family/whanau and others:**			
Obtain a collateral history	Knows about	Shows how	Does
Engage and discuss, patient care as appropriate, with significant others e.g. family, carer	Knows about	Shows how	Does
(d) Specific/Advanced communication **using communication media other than face-to-face verbal and written communications:**			
Demonstrate the ability to respond to the specific demands and adaptations required by telephone communications	None	Shows how	Does
Develop familiarity with computerised patient record, prescribing, and referral systems	Knows about	Knows how	Shows how
Maintain/contribute to patients' electronic records	None	Shows how	Does
Use fax and email communication appropriately	Knows about	Shows how	Does
(3) Communication and teamwork skills required for effective intraprofessional and interprofessional interactions:			
Make a comprehensive but concise, accurate and legible case record incorporating relevant information	Know how	Shows how	Does
Document the team's treatment plan and monitoring orders within case records enabling efficient and effective handover of care	None	Shows how	Does
Keep clinical records including the problem list up-to-date as patient problems change over time	Knows about	Shows how	Does
Present (verbally) patient information in an organised, articulate and coherent manner in clinical settings	Knows how	Shows how	Does
Conduct an effective verbal handover of care (ISBAR)	None	Shows how	Does
Complete investigation requests	None	Shows how	Does
Make a verbal (including telephone) referral of a patient to another speciality	Knows about	Knows how	Does
Make a written referral (consultation request) of a patient to another speciality	Knows how	Shows how	Does
Write a well-structured, comprehensive and clear discharge letter	None	Shows how	Does
Know how to complete documentation of a patient death – including entry in the clinical notes, and completion of death and cremation certificates	None	Knows how	Shows how
Know how to refer a patient death to the coroner	None	Knows how	Shows how
Write a legible, clear and accurate drug chart ready for signing	None	Shows how	Does
Write a legible, clear and accurate prescription ready for signing	None	Shows how	Does
Write legible, clear and accurate fluid order ready for signing	None	Shows how	Does

	ELM 2/3	ALM 4/5	TI/6
Teamwork			
Describe the roles of other health professionals, and one's own role in the team	Knows about	Does	Does
Function competently within a team by:			
performing delegated tasks and seeking clarification of role/tasks where necessary	Knows about	Shows how	Does
managing time and prioritising tasks effectively	Knows about	Shows how	Shows how
showing initiative and contributing positively to team functioning	Knows about	Shows how	Shows how
communicating effectively and respectfully	Knows about	Shows how	Does
expressing concerns respectfully and appropriately	Knows about	Shows how	Does
recognising and managing conflict	Knows about	Knows how	Shows how
monitoring own impact on other team members, and modifying behaviour as and when necessary	Knows about	Shows how	Does
Function competently within:			
a medical team	Knows about	Shows how	Does
a multidisciplinary team	Knows about	Shows how	Does
an inpatient based health care team	None	Shows how	Does
an ambulatory patient based health care team	None	Shows how	Does
Communicate and collaborate effectively with other health teams involved in the care of the patient and with health care systems	Knows about	Knows how	Does

Appendix Two: History Taking Skills

History Taking Skills	ELM 2/3	ALM 4/5	TI/6
Take a systematic and comprehensive clinical history including:			
Presenting complaint	Shows how	Shows how	Does
History of presenting complaint/illness	Shows how	Shows how	Does
Past Medical History	Shows how	Shows how	Does
Drug and allergy history	Shows how	Shows how	Does
Family history	Shows how	Shows how	Does
Social history - including occupational history	Shows how	Shows how	Does
Systems review - includes general, cardiovascular, respiratory, gastrointestinal, genitourinary including renal, CNS (central nervous system), ENT/eyes, psych, endocrine/metabolic, locomotor, skin and haematopoietic	Shows how	Shows how	Does
From an adult	Knows how	Shows how	Does
From a child and/or parent	Knows how	Shows how	Does
From an adolescent	Knows how	Shows how	Does
From an elderly person	Knows how	Shows how	Does
From an adult female including menstrual, obstetric and gynaecological histories	Knows how	Shows how	Does
Recognise and probe for, if necessary, selected and common potentially sensitive and stigmatising problems including: sexual history, STIs, potential/risk of abuse (domestic, elder or child), HIV, mental illness, substance abuse	Knows how	Knows how	Shows how
Take an appropriately focused history according to the presenting problem	Knows how	Shows how	Does
Take an appropriately focused history according to the context of care:			
A primary care facility	Knows how	Shows how	Does
A hospital ward	Knows how	Shows how	Does
An emergency department	Knows how	Shows how	Does
An outpatient clinic	Knows how	Shows how	Does
Take an appropriately focused history in the acutely unwell patient presenting with an undifferentiated problem	Knows about	Shows how	Does
Take an appropriately focused history in a patient with known chronic illness	Shows how	Shows how	Does
Take a history in more challenging circumstances when the patient is not communicating clearly	Knows how	Shows how	Does

Appendix Three: Examination Skills

Examination Skills	ELM 2/3	ALM 4/5	TI/6
Core "component" examination skills:			
Perform the generic components of examination i.e. Observation, Palpation, Percussion & Auscultation	Shows how	Does	Does
Be able to describe specific examination findings – both normal and abnormal	Knows how	Does	Does
Describe the general features of examination observable from the end-of-the-bed	Knows how	Does	Does
Obtain a set of vital signs including:-			
Pulse rate, respiratory rate and blood pressure measurement (BP)	Does	Does	Does
Oxygen saturation	Knows about	Does	Does
Temperature	Does	Does	Does
Bedside blood glucose measure	Does	Does	Does
Assess responsiveness, signs of life (need for CPR)	Does	Does	Does
Assess pain status	Does	Shows how	Does
Perform a systematic complete clinical examination of:			
An **adult patient**			
with an acute medical condition	Knows about	Shows how	Does
with common chronic medical conditions	Knows about	Shows how	Does
A **paediatric patient** including			
age appropriate examination of the paediatric patient including examination of the adolescent, child, infant and newborn (neonate)	None	Shows how	Does
developmental screening	Knows about	Shows how	Does
An **obstetric patient** including			
examining the pregnant abdomen	Shows how	Shows how	Does
detecting foetal heart sounds	Knows about	Shows how	Does
assessing stage/progression of labour	None	Knows how	Knows how
Perform an examination of the following body regions or systems as appropriate to the presenting problem and clinical context:			
The **Cardiovascular system** including examination of pulses, BP, JVP, precordium, lung bases, abdomen and peripheries	Shows how	Shows how	Does
The **Respiratory system** including examination for features of respiratory distress, cough, sputum, an ENT exam, neck exam, and chest exam, plus examination of abdomen and peripheries	Shows how	Shows how	Does
The **Gastrointestinal and genitourinary systems** including:-			
examining general features on oropharyngeal and peripheral exam and an examination of the abdomen, inguinal regions and rectum/genitalia as appropriate	Know how	Shows how	Does
examination and description of stool	Knows about	Shows how	Does

Perform an examination of the following body regions or systems as appropriate to the presenting problem and clinical context **(continued)**	**ELM 2/3**	**ALM 4/5**	**TI/6**
The **Neurological system** including:			
general state and higher functions including mentation, speech, memory, calculation, visual-spacial processing and abstract reasoning	Knows how	Shows how	Does
level of consciousness (Glasgow Coma scale), signs of meningism	Know how	Shows how	Does
cranial nerves	Shows how	Shows how	Does
limbs (and trunk) :- motor (observation, tone and power), reflexes, coordination, sensation, standing stability (Romberg's test) and gait	Shows how	Shows how	Does
a systematic mental state examination	Know how	Shows how	Does
The **Musculoskeletal system** including examination of joints (axial and limb), muscles, posture and gait, and a functional assessment	Shows how	Shows how	Does
The **Psychiatric exam** including mental state exam, assessment of suicide risk, violence risk, cognitive impairment and substance abuse	Knows about	Shows how	Does
The **Endocrine/metabolic system** including:			
examination of the thyroid gland	Knows about	Shows how	Does
other features of endocrine/metabolic disturbance	Know how	Shows how	Does
The **Haematopoietic system** including examination of lymph nodes	Know how	Shows how	Does
An **ENT exam** including:			
examination of pinna, auditory canal and drum including use of an auroscope/otoscope	Know how	Shows how	Does
testing hearing and vestibular function	Knows about	Shows how	Does
examination of the nose - external and anterior rhinoscopy	Knows about	Shows how	Does
examination of sinuses	Knows about	Shows how	Does
examination of throat	Know how	Shows how	Does
examination of cervical glands	Know how	Shows how	Does
The **Dermatological system** including skin, nails and hair	Knows about	Shows how	Does
An **Eye exam** including:			
visual acuity and visual fields, pupillary function, eye movements including binocular function	Knows how	Shows how	Does
optic fundus and disc using ophthalmoscope	Knows how	Shows how	Does
optic globe and peripheral structures - including eyelid retraction/eversion	Knows about	Shows how	Shows how
slit lamp examination	Knows about	Shows how	Shows how
A **Wound**	Knows about	Shows how	Does
Perform the following sensitive examinations as indicated			
rectal examination	Knows about	Shows how	Does
a gynaecological examination including a bimanual pelvic exam	Knows about	Shows how	Does
a gynaecological examination including a speculum examination of the vagina and cervix	Knows about	Shows how	Does
breast examination	None	Shows how	Does
examination of perineum and external genitalia in a male	None	Shows how	Does
examination of perineum and external genitalia in a female	None	Shows how	Does
Perform an appropriately focused examination guided by the history obtained	Knows how	Shows how	Does

	ELM 2/3	ALM 4/5	TI/6
Perform an appropriately focused and timely examination in a patient presenting with:			
reduced or altered conscious level	Knows about	Know how	Does
febrile illness	Knows about	Shows how	Does
acute respiratory distress	Knows about	Shows how	Does
common cardiac emergencies - chest pain, arrhythmia, cardiovascular compromise	Knows about	Shows how	Does
acute abdominal emergencies - abdominal pain, GI blood loss	Knows about	Shows how	Does
acute trauma - regional	Knows about	Shows how	Does
acute trauma - major	Knows about	Knows how	Shows how
common obstetric emergencies	Knows about	Knows how	Shows how
common ophthalmic emergencies - acute visual loss, pain or redness of the eye	Knows about	Shows how	Shows how
common poisonings	Knows about	Knows how	Knows how
Perform an appropriately focused and timely examination in the acutely unwell patient presenting with an undifferentiated problem	Knows how	Knows how	Does
Perform an appropriate systematic examination in an adult patient with a permanent disability such as cerebral palsy, or spinal injury	None	Knows how	Knows how
Perform a pre-operative assessment	None	Shows how	Does
Perform an examination to confirm death	None	Knows how	Does

Appendix Four: Clinical Reasoning Skills

Clinical Reasoning Skills	ELM(2/3)	ALM(4/5)	ALM(TI/6)
Cognitive base of clinical reasoning			
Describe common methods of diagnostic reasoning - e.g. hypothetico-deductive reasoning, pattern recognition, Bayesian probability theory	Knows about	Knows about	Knows about
Describe common reasons for making diagnostic errors	Knows about	Knows about	Knows about
Describe the benefits and harms from the use of guidelines	Knows about	Knows about	Knows about
Data gathering, including diagnostic tests			
Recognise and describe which elements of a patient's context, history, examination and investigations are diagnostically relevant	Shows how	Shows how	Does
Recognise and describe when and how the gathering of further information (context, history, examination and investigations) is required	Shows how	Shows how	Does
Explain how disease prevalence informs what information should be gathered	Knows about	Shows how	Does
Explain how diagnostic test performance is affected by disease prevalence, and test sensitivity, specificity and likelihood ratios	Knows about	Shows how	Does
Diagnostic formulation and prioritisation			
Assign meaning and levels of importance to various pieces of information (both positive and negative features)	Knows how	Shows how	Does
Recognise diagnostic “red flags” and explain how they influence the diagnostic process	Knows about	Shows how	Does
Clarify which elements of the history and examination are independent and which are inter-related	Knows about	Shows how	Does
Explain the relationships between a patient's symptoms and signs and the likely underlying causes	Knows how	Shows how	Does
Formulate a problem list and, where more than one problem is present, sort and cluster interrelated information	Knows about	Shows how	Does
Generate and document a provisional diagnosis and differential diagnosis list and explain how these were reached	Knows how	Shows how	Does
Explain the relationships between the different clinical problems and underlying causes	Knows about	Shows how	Does
Provide arguments for and against each item of a differential diagnosis list	Knows how	Shows how	Does
Prioritise urgent vs. non-urgent, active vs. inactive and new vs. established problems	Knows about	Knows how	Does
Maintain an appropriately broad diagnostic focus and differential list	Knows how	Shows how	Does
Investigation and management			
Prioritise management options and investigation options	Knows about	Shows how	Does
Provide arguments for and against each investigation and management option/plan	Knows about	Shows how	Does
Relate the management of the problems to underlying causes	Knows about	Shows how	Does
Metacognitive skills			
Demonstrate flexibility by adapting the approach to clinical reasoning depending on context and urgency	Knows about	Knows how	Does
Demonstrate a willingness and ability to modify the differential diagnosis/problem list/management options/investigation options, based on further information	Knows how	Shows how	Does
Explain clinical reasoning in communications with patients and other professionals where appropriate	Knows how	Shows how	Does
Reflect on, and explain, diagnostic successes and errors	Knows about	Knows how	Shows how

Appendix Five: Procedural Skills

Specific procedural skills Group One The student **does** or **shows how** to do the following skills: Note: this is a minimum required level of skill acquisition and the stage of training during which it should be achieved – individual students may achieve greater levels of competence at some of these skills and/or competence at skills additional to these and at earlier stages in their training than indicated.	**Core competencies to be achieved and/or assessed within each stage of training** **Does =** The student is competent at the skill i.e. can independently perform the skill safely and effectively in the clinical setting. Competence, especially in relation to procedural skills, does not necessarily equate to successful completion of the skill on every occasion but does require the recognition of an individual's limitations and recognition by that individual of specific circumstances where assistance should be sought. **Shows how** = This requires the student to be able to demonstrate performance of the skill but does not indicate or equate to competence at the skill. This would apply to skills performed at least once in the clinical environment or in a simulated setting but the experience and opportunities are insufficient to amount to the achievement of competence at the skill.		
			ALM (TI/6)
		ALM (4/5)	→
	ELM (2/3)	→	→
Occupational Safety and Hygiene: Hand washing	Does	Does	Does
Safe handling and disposal of sharps	Does	Does	Does
Safe handling of clinical waste		Does	Does
Safe handling of commonly required biological specimens		Does	Does
Universal precautions/personal protective equipment		Does	Does
Safe transfer of elderly or disabled patient from bed to chair			Shows how
Basic Bedside Procedures: Urine examination (dipstick urinalysis)	Does	Does	Does
Temperature recording		Does	Does
Pulse oximetry recording		Does	Does
Throat swab		Does	Does
Nasopharyngeal swab		Does	Does
MSU specimen (explain and obtain)		Does	Does
Urine pregnancy test		Does	Does
ECG (recording)			Does
Wound and operative/surgical management: Wound swab		Does	Does
Aseptic/sterile technique		Does	Does
Surgical scrub and gown		Does	Does
Suture removal			Does
Change a wound dressing			Shows how
Infiltrate wound with local anaesthetic			Shows how
Clean and debride a wound			Shows how
Primary wound closure, using steristrips, tissue adhesive and sutures			Shows how
Surgical knots			Shows how
Instrument ties			Shows how

Punctures and Aspirations: Fingerprick sample and measurement of blood glucose	Does	Does	Does
Venepuncture - for routine blood tests		Does	Does
Blood culture specimens		Shows how	Does
Peripheral intravenous cannulation		Shows how	Does
Arterial puncture		Shows how	Does
Subcutaneous injection/infiltration of local anaesthetic prior to procedures such as iv cannulation or arterial blood sampling		Shows how	Does
Subcutaneous injection of other medications e.g. anticoagulant		Shows how	Does
Intramuscular injection			Shows how
Intravenous Therapy and Blood Products: Draw up and check IV drugs			Does
Set up an intravenous infusion			Does
Musculoskeletal procedures: Simple bandaging techniques	Does	Does	Does
Simple splinting/immobilisation techniques for limbs	Does	Does	Does
Perform spine immobilisation techniques		Shows how	Does
Use of crutches			Shows how
Airway and Respiratory Therapy: Peak flow measures		Does	Does
Bedside spirometry		Does	Does
Inhaler/spacer use		Does	Does
Oxygen administration		Does	Does
Nebuliser administration		Does	Does
Catheterisations: Urethral catheterisation - male		Shows how	Does
Urethral catheterisation - female		Shows how	Does
Nasogastric tube insertion			Shows how
Ophthalmology procedures: Eye drop/ointment administration		Shows how	Shows how
Fluorescein staining		Shows how	Shows how
Eye bandage application/padding		Shows how	Shows how
Obstetric and Gynaecological procedures: Bivalve speculum examination		Shows how	Does
Cervical/vaginal specimens		Shows how	Does
Normal vaginal delivery			Shows how
Resuscitation procedures: Basic Life Support (BLS)		Shows how	Shows how
Bag-valve-mask (BVM) ventilation		Shows how	Shows how
Advanced Life Support (ALS)			Shows how
Advanced airway management - LMA, ETT			Shows how
Defibrillation and AED use			Shows how
External haemorrhage control		Shows how	Shows how
Paediatric Resuscitation Skills			Shows how

Specific procedural skills Group Two The student either **knows how** to do or **knows about** the following skills by the end of the Trainee Intern year: **Note: this is a minimum required level of skill acquisition by the time of graduation – individual students may achieve greater levels of competence at some of these skills and/or competence at skills additional to these.**	**Core competencies to be achieved and/or assessed within each stage of training** **Knows how** = the student should have knowledge of the actual practice of the following skills, including the post-procedure care of the patient and/or specimens obtained. The student should be able to offer a simple explanation of the procedure to a patient and this would normally require that the student has observed the procedure on at least one occasion. **Knows about** = the student should have knowledge of and about the following skills, including underlying theory, indications, contraindications, potential complications and alternate strategies or approaches if the skill is unsuccessful or unable to be performed.
Safe Patient Restraint techniques	Knows about
Basic Bedside Procedures Stool testing for occult blood	Knows how
Urethral swab	Knows about
Wound and operative/surgical management Simple skin lesion excision	Knows how
Staple removal	Knows how
Abscess drainage	Knows about
Punctures and Aspirations: Lumbar puncture	Knows how
Joint injection/aspiration	Knows how
Needle thoracocentesis	Knows about
Intra-osseous needle/infusion	Knows about
Central venous and femoral cannulation	Knows about
Arterial cannulation	Knows about
Abdominal paracentesis	Knows about
Intravenous Therapy and Blood Products: Prescribe, check and administer blood products	Knows how
Musculoskeletal procedures: Plaster cast, apply below elbow	Knows how
Plaster cast, apply below knee	Knows how
Simple traction	Knows how
Reduction of simple fracture	Knows about
Reduction of joint dislocation	Knows about
Airway and Respiratory Therapy: Intercostal catheter/drain	Knows how
CPAP administration	Knows about
BiPAP	Knows about
Mechanical ventilation	Knows about
Catheterisations: Nasogastric tube insertion	Knows how
Suprapubic catheterisation	Knows how
Ophthalmology procedures: Eye irrigation	Knows how
Remove simple eye foreign body and corneal foreign body	Knows how
Tonometry	Knows how
ENT procedures: External auditory canal irrigation	Knows how
Ear wick insertion	Knows how
Epistaxis management - anterior rhinoscopy and anterior nasal pack insertion	Knows how
Obstetric and Gynaecological procedures: Foetal assessment	Knows how
Resuscitation procedures: Neonatal Resuscitation - including APGAR scoring	Knows how
Stabilisation and transportation of the critically ill patient	Knows about

Bibliography:

Association of American Medical Colleges. Recommendations for Clinical Skills Curricula for Undergraduate Medical Education2005: Available from: https://www.aamc.org/download/130608/data/clinicalskills_oct09.qxd.pdf.pdf.

Australian Medical Council. Assessment and Accreditation of Medical Schools: Standards and Procedures. 2010.

Batalden P, Leach D, Swing S, Dreyfus H, Dreyfus S. General Competencies And Accreditation In Graduate Medical Education. Health Affairs. 2002 September 1, 2002;21(5):103-11.

Confederation of Postgraduate Medical Education Councils (CPMEC). Australian Curriculum Framework for Junior Doctors version 2.2. 2009.

Cumming A, Ross M, On behalf of the Tuning Project (Medicine) Steering Group and Task Force 1of the MEDINE Thematic Network. Learning Outcomes/Competences for Undergraduate Medical Education in Europe: The Tuning Project (Medicine)2007: Available from: http://www.tuning-medicine.com/pdf/booklet.pdf.

Epstein RM, Hundert EM. Defining and Assessing Professional Competence. JAMA. [Review]. 2002;287(2):226-35.

Ericsson KA. Deliberate Practice and the Acquisition and Maintenance of Expert Performance in Medicine and Related Domains. Academic Medicine. [Invited Address]. 2004;79(10 (October Supplement)):S70-81.

Ericsson KA. Deliberate Practice and Acquisition of Expert Performance: A General Overview. Academic Emergency Medicine. 2008;15(11):988-94.

Flinders University (Lynne Sanderson). Clinical Skills Map – yrs 1 to 2 – 2007.

Flinders University. Yr 3 2011 Course book – Lists of Skills and Procedures. 2011.

General Medical Council. Tomorrow's Doctors2009: Available from: http://www.gmc-uk.org/education/undergraduate/tomorrows_doctors.asp.

Graham IS, Gleason AJ, Keogh GW, Paltridge D, Rogers IR, Walton M, et al. Australian Curriculum Framework for Junior Doctors. Medical Journal of Australia. [Supplement]. 2007;186(7):S14-9.

Gruppen LD, Frohna AZ. Clinical Reasoning. In: Norman GR, van der Vleuten CPM, Newble DI, editors. International Handbook of Research in Medical Education. Dordrecht/Boston/London: Kluwer Academic Publishers; 2002. p. 205-30.

Keele University School of Medicine PBM. Generic Consultation Skills (GeCoS) – overview of skills to be assessed and Strategies for Improvement 2009.

Medical Council of New Zealand. Education and Supervision for Interns2006; (October 2006): Available from: http://www.mcnz.org.nz/portals/0/meded/Ed&Sup_complete.pdf.

Miller GE. The Assessment of Clinical Skills/Competence/Performance. Academic Medicine. [Invited Reviews]. 1990;65 (9):S63-7.

Moriarty H, Dowell T, Bushnell J, Rudland J, (Department of Primary Health Care and General Practice, University of Otago, Wellington). International Perspectives on Clinical Skills for the Undergraduate Medical Curriculum 2006.

Norman G. Research in clinical reasoning: past history and current trends Med Educ. [Current perspectives]. 2005;39:418-27.

Oxford English Reference Dictionary. Second ed. Pearsall J, Trumble B, editors. Oxford: Oxford University Press; 2003.

Scottish Deans' Medical Curriculum Group. Learning Outcomes for the Medical Undergraduate in Scotland: A Foundation for Competent and Reflective Practitioners2007; (20/09/2011): Available from: http://www.scottishdoctor.org/.

Stewart MG. Core Competencies 2001: Available from: http://www.acgme.org/acWebsite/RRC_280/280_coreComp.asp.

The Association of Faculties of Medicine of Canada. AFMC National Clinical Skills Working Group Evidence-Based Clinical Skills Document. [16/08/2011]; Available from: http://clinicalskills.machealth.ca/.

University of Leicester and University Hospitals Leicester NHS Trust. Leicester Clinical procedures Assessment Tool - LCAT version 3.0

University of Minnesota Medical School Medical Student Clinical Skills Committee. University of Minnesota Medical School Competencies Required for Graduation: Final Report of the Medical Student Clinical Skills Committee2002.

University of Minnesota. Domains of Competence 2011 Regents of the University of Minnesota; 2011 [14/09/2011]; Available from: http://www.meded.umn.edu/curriculum/competencies/domains.php.

Von Fragstein M, Silverman J, Cushing A, Quilligan S, Salisbury H, Wiskin C, et al. UK consensus statement on the content of communication curricula in undergraduate medical education. Med Educ. 2008;42(11):1100-7.

Wojtczak A, For Institute for International Medical Education. Glossary of Medical Education Terms2002: Available from: http://www.iime.org/glossary.htm#C.

Faculty Clinical Skills Working Party Membership:

Tim Wilkinson (Chair)
Helen Chignell
Robyn Chirnside
Geoff Cutfield
David Gerrard
MaryLeigh Moore
Roshan Perera
David Perez
Joy Rudland

