

ResearchSpace@Auckland

Suggested Reference

Ekeroma AJ, Perez D, Percival T, Mola G, Sopoaga F, Wilkinson T. 2014. *A New Medical Curriculum for the National University of Samoa: Discussion document*. Auckland, New Zealand.

Copyright

Items in ResearchSpace are protected by copyright, with all rights reserved, unless otherwise indicated. Previously published items are made available in accordance with the copyright policy of the publisher.

<https://researchspace.auckland.ac.nz/docs/uoa-docs/rights.htm>

A New Medical Curriculum for the National University of Samoa

Discussion document

Citation: Ekeroma AJ, Perez D, Percival T, Mola G, Sopoaga F, Wilkinson T. 2014. *A New Medical Curriculum for the National University of Samoa: Discussion document*. Auckland, New Zealand.

Published in May 2014
by the Pacific Society for Reproductive Health (PSRH)
525 Remuera Rd, Auckland 1050, New Zealand

ISBN 978-1-927201-01-5 (online)

This document is available at www.psrh.org.nz

Contents

Introduction	1
How you can help	2
Scope of the discussion	2
What's the timeline?	2
How to share your views with us	2
Medicine and Society	3
Curriculum framework	4
The duration of the undergraduate programme –	4
The components of the medical programme	5
The structure of papers comprising the curriculum	7
The learning domains (themes) in the curriculum	8
Curriculum design (principles of delivery)	9
Learning philosophies in the curriculum	11
Curriculum content	14
Curriculum outcomes	16
Postgraduate Years 1 and 2	17
Appendix:	18
A. List of questions	18
B. Useful resources	19
References	21

Introduction

This discussion document is for all key stakeholders and interested parties that are keen to help us shape an innovative and progressive new medical curriculum for the Faculty of Medicine, National University of Samoa. A high-quality curriculum and education is central to high quality medical care.

It addresses issues in relation to curriculum structures (framework) and design. It is intended to provoke discussion and identification of options, which will be suitable for a Pacific, focussed medical curriculum. This document does not address the details of curriculum content, as these will emerge when the curriculum framework and design has been agreed.

The intended outcome from these discussions will be to identify the curriculum framework and curriculum design for an ‘ideal’ medical curriculum for the Faculty of Medicine at the National University of Samoa (FoM-NUS). However, the ‘ideal’ curriculum content may not be realised in the short term as the curriculum needs to transition to a Pacific focussed curriculum and material need to developed. Incremental development is acceptable – curriculum development is a continuous process and evolving the curriculum towards the ‘ideal’ may take 5 to 10 years. It is important however to adequately resource this process by building local capacity.

The government of Samoa established the FoM-NUS in January 2014 to address medical workforce needs of Samoa and the Pacific region into the future. A curriculum committee was formed with Aliimuamua Esekia Solofa as chair where a need was identified for a curriculum expert to assist the new Faculty to develop an innovative curriculum that will address the aspirations of the Government of Samoa and that of the NUS.

A team of curriculum experts and academics from the University of Otago, University of Auckland and University of Papua New Guinea will form the review team under the leadership of Aiono Dr Alec Ekeroma. The team will be working closely with the FoM-NUS curriculum committee under the guidance of the Dean, LeMamea Dr Limbo Fiu.

E mama se avega ae limalima faatasi is a Samoan phrase that acknowledges the wisdom of combined effort and working together to build for a common purpose. Your and all perspectives are important in developing the new curriculum and it is recommended process for a broad consultation and consensus of stakeholders [1]. The word curriculum has been variously known as a course, or syllabus or program of study. However, we prefer for simplicity to define curriculum as a “planned educational experience” [2].

We acknowledge the Oceania University of Medicine and the important groundwork they forged in curriculum development prior to FoM-NUS. We prefer that the FoM-NUS have a brand new curriculum framework and design based on sound educational principles and educational themes, grounded in best current practice but aiming for a quality learning experience that are important to Samoa and the Pacific context [3]. However, we will also explore the adaptation of current material to build capacity of local academics and one that will suit preferred integrated curriculum designs and delivery methods.

The curriculum should reflect the way that we want our doctors to practice. It should reflect how, what and why we want them to acquire certain knowledge and clinical skills. And it should reflect how we expect them to be flexible in learning and service to meet the expectations of our

employers and our communities into the future. To achieve this, we need to better understand the priorities and perspectives of the key stakeholders in Samoa and the region.

How you can help

We want to hear and learn your views on any aspect of the curriculum - that planned educational experience for medical doctors' training. Throughout this document, we ask some questions to guide discussion (you'll find them throughout the document, and collated in the Appendix below), but you can tell us about other ideas or concerns you might have as well.

Scope of the discussion

There will be two planned stakeholder meetings in Samoa in the first and second week of June 2014 and you will be invited to these by the FoM-NUS. The questions in this document will guide the discussions at those meetings. We also welcome written submissions.

What's the timeline?

We are having the discussion now, before the draft curriculum is written, because we want to use your experience to shape the curriculum. When the discussion period finishes at the end of June 2014, we will analyse everyone's feedback to inform the writing of the draft curriculum.

The draft curriculum will be available to every one for further feedback until we submit the final curriculum draft to NUS by the 2nd August 2014.

How to share your views with us

You can share your views by attending the planned meetings in Samoa or emailing alec.ekeroma@auckland.ac.nz.

Medicine and Society

1. The changing role of health care, the emphasis on prevention and the increase in societal expectations mean that the content and delivery of medical curricula have to change. Health care has shifted from the individual practitioner to community primary care teams, from a curative focus to prevention, from episodic care to continuous and holistic care [4, 5].
2. The health challenges of Pacific Island societies are changing and differ from one Island country to the next. Melanesia has a huge infectious disease burden whereas Micronesia and Polynesia have a growing burden of non-communicable diseases (NCDs). Graduates will need to have more than a disease specific perspective but also a sound understanding of population health with specific knowledge for Samoa and the wider Pacific region.
3. Population Health skills will prepare graduates to not only provide effective public health care in Samoa, but will enable adaptation to evolving population socio-cultural and demographics changes and wider global health issues which may impact on the people of Samoa. Skills in research methods, epidemiology, critical analysis and health informatics will prepare graduates to face changing disease patterns and new health concerns.
Consideration for tailored local curriculum content:
 - a) Population Health – Population Health approaches and research skills. Current population health issues, such as non-communicable diseases, in the Pacific region including the wider social and economic determinants[6] of health and well-being and inequalities with a particular focus on the Samoan context.
 - b) Public Health Principles including Health Promotion, Preventative healthcare and the medical response to climate and public health disasters.
 - c) Global Health – Global Health issues of relevance to Samoa and the wider Pacific region including Climate Change and Health, the Donor and Aid agency environment and health services.
 - d) Culture, health and the practice of medicine – understanding the socio-cultural interplay of individuals and populations with healthcare and the practice of medicine.
 - e) Health information/informatics - introduction to health systems and clinical information principles with particular case studies of effective information development in the developing country context e.g. verbal autopsies, STEPS surveys
 - f) Health systems and Medicine – an introduction to health services infrastructure, funding, prioritization and resource management
 - g) Introduction to research methods, epidemiology and critical analysis with local practicum student projects
 - h) The practice of medicine – professionalism, working in teams, the role of the doctor in society, ethical behaviour, humanistic qualities [7].
4. Medical schools in New Zealand, United Kingdom and Australia have increased components of teaching in primary care in general practice and community-based settings. The University of Papua New Guinea (UPNG) has a strong community health focus.
5. Thinking now on the training of doctors at NUS to reflect the needs and meet the expectations of Samoa and Pacific societies and communities, what are your thoughts on the above list and are there other issues and topics have we not identified?

Curriculum framework

The duration of the undergraduate programme –

6. At present the standard duration of an undergraduate medical curriculum is either 5 or 6 years. However, most new curriculums are 5 years which should give the students a good understanding of basic scientific, social and clinical concepts and be able to apply these to the management of common conditions [8], The 5-year programmes does not produce mature doctors and this development stresses the importance placed on the on-going vocational training in the post-graduate years (covered in a later section).
7. The duration of medical curriculums in the UK and most medical schools in Australia are for 5 years [9] and graduate programmes are for 4 years. The two NZ medical curriculums are for 6 years, which includes the first year of basic sciences but then they have one pre-registration year. UPNG has a 5-year curriculum and 2 pre-registration years.
8. Factors that have contributed to shorter programmes are integrated curriculum designs (which allow more efficient learning), structured learning, early introduction to patient-centred learning, problem solving (rather than detailed factual delivery), the need to train more doctors, early contribution to the workforce, less costly (compared to 6 years) and the emergence of electronic delivery.
9. The 5-year curriculum may have a reduced cost, however, the increased costs of group learning can neutralise cost savings. A 5-year curriculum at NUS may include an initial foundation year. A 5-year curriculum mandates an on-going educational programme post-graduation for 2 years, as in the case at UPNG. If this does not exist, then a 6-year curriculum should be considered and this could include a period of apprenticeship training.
10. You can help us by answering these questions:
 - 1) **Is a 5-year curriculum the desired option? If so this will have implications for the curriculum design (see later sections).**
 - 2) **Will a post-graduation vocational educational programme be in place to enable a high level of competence to be reached?**

The components of the medical programme

11. The components of a curriculum are the learning units or modules used to implement the curriculum. Some examples include foundation studies, medical sciences (e.g. anatomy, biochemistry, pharmacology etc.), social sciences (e.g. behavioural sciences, psychology, communication skills, sociology, culture and health, ethics etc.) and clinical sciences and attachments including consultation skills, medical decision making, integrated learning based on clinical scenarios, integrated bedside learning, learning medical procedures, hospital attachments, learning in the community, apprenticeship learning (e.g. trainee intern) [10].
12. The teaching methods within the course required to deliver these components can vary from didactic (fact based) teaching blocks to clinically based integrated modules which deliver learning around patient and other clinical scenarios. It is common to teach clinical medicine in an integrated and progressive fashion, particularly with patients. A greater challenge lies in the early curriculum years when block teaching has been the norm, usually based on body systems.
13. The move to more clinically relevant learning in the early years requires more focus on an integrated approach. The integrated approach is more complex and requires more supervision by academic staff. Because it is likely that some components of the NUS curriculum may need to be sourced from offshore institutions, it may be necessary to have a moderate level of didactic block learning to provide a vehicle for delivery of this externally sourced material. Even if this is necessary, it will still be important for students to have opportunities to apply their learning.
14. **Spiral of learning concept:** another consideration is the degree to which the curriculum will be delivered progressively throughout all years, the spiral of learning. This is an educationally sound approach as students can re-visit previous learning and add complexity in a progressive fashion. This facilitates the connection between information and experience

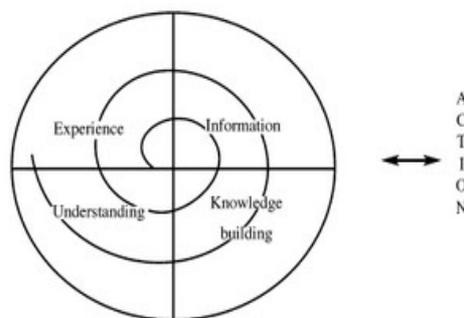


Fig. 1. The Spiral of Knowing (Adapted from Wells, 1999).

15. 2.bp.blogspot.com
16. An example of spiral learning could relate to glucose intolerance. In years 2 or 3 students might study a case of a patient with excessive thirst and urine production. The science and pathophysiology concepts here might relate to kidney function, pituitary function, glucose intolerance and high serum calcium. Diabetes would be referred to but would not be the only

focus of the case. A later case in years 4 or 5 might relate to a patient presenting with kidney impairment and visual impairment due to undiagnosed diabetes. This would allow students to re-visit the earlier science concepts and build on their clinical knowledge about diabetes. The concepts required for both cases would be shared although the diabetes case would carry more clinical concepts.

17. This could mean that medical sciences and clinical practice could be delivered and assessed in all years of the curriculum. Clearly the emphasis on medical sciences would be greater in early years and less prominent in later years and vice-versa for clinical practice but the connection between the two would be reinforced throughout the curriculum.
18. Once the components of the curriculum have been adopted, decisions which need to be addressed for the NUS curriculum are:
 - 1) **Should all components be represented in all years of the curriculum?**
 - 2) **Which components need to be delivered as blocks and which can be delivered in an integrated fashion?**
 - 3) **To what degree will the curriculum be delivered progressively (spiral of learning)?**
 - 4) **What emphasis and time allocation will be attached to each component in each year of the curriculum?**
 - 5) **How much of the curriculum should be delivered in a community context?**

The structure of papers comprising the curriculum

19. Traditionally papers have been topic or discipline focussed. Ideally the papers for the medical curriculum should reflect the students' styles of learning e.g. integrated learning should be embodied in an integrated paper and assessed in an integrated fashion. The structures of the papers therefore need to reflect the components of the curriculum.
20. However, other factors which need to be considered in the development of papers are:
- a) The size of papers should be standardised. The size should reflect the learning time required.
 - b) The assessment required for each paper should proportionate to the size of the paper.
 - c) Assessment structures need to be considered when defining the structure of papers – the contribution of in-course and summative assessment
 - d) Papers should be based on semester or yearly cycles.
 - e) Papers need to be defined with progression criteria in mind e.g. is a pass required in all papers to progress to the next year.
 - f) The ability to repeat papers needs to be considered.
21. You can help by answering these questions:
- 1) Will the NUS papers be predominantly topic based or integrated?**
 - 2) How should clinical relevance be included within the papers?**
 - 3) For each paper what will the balance between in-course and summative assessment be?**
 - 4) Will students need to pass all papers in a year to progress?**

The learning domains (themes) in the curriculum

22. Learning domains are themes in curriculums, which have traditionally been the biomedical sciences and clinical disciplines. However, most revised medical curricula have included behavioural health, communications skills, diversity and cultural awareness, domestic violence, evidence-based medicine, socio-economic dynamics, public health in horizontal and vertical cross-cutting themes [11]. Other examples of domains regarded as essential in a modern curricula are –

- a) University of Otago: medical science, clinical practice, population medicine, research and evidence based medicine, culture and medicine (Hauora Maori, Pacific Health), ethics, professional development [12].
- b) University of Auckland: applied science for medicine, clinical and communication skills, personal and professional skills, Hauora Maori, population health.
- c) UPNG: community medicine, individual medicine (prevention/diagnosis/management of disease), professional and personal qualities and skills, life-long learning and teaching.
- d) University of Minnesota: scientific and clinical inquiry, medical knowledge, clinical skills and patient care, professionalism, interpersonal and communication skills, systems of health care, continuous improvement of care through reflective practice.

23. Once domains have been adopted they need to be implemented by:

- a) Identifying which domains are represented in each module of learning.
- b) Ensuring representation of each domain across the components of the curriculum.
- c) Ensuring an appropriate balance of domains exists – some domains can easily be overlooked if they are not deliberately built in.
- d) Ensuring that each domain is assessed.
- e) Domains should be reviewed periodically to ensure that they cover all the learning needs of students. Adjusting domains can refresh the curriculum.

24. You can help by answering these questions:

- 1) What domains serve the needs of a Pacific medical school?**
- 2) Once domains are identified what weight will each receive in the curriculum?**
- 3) Should all domains be assessed to the same degree?**

Curriculum design (principles of delivery)

Whether primarily based on body systems, patient presentations or other constructs.

25. There are a number of educational constructs, which a medical curriculum can be based on. These include body systems/science focus (e.g. cardiovascular, respiratory etc.), patient presentations/pathophysiology (mechanisms of disease), specific diagnoses and learning domains. Curriculums commonly contain a mixture of these constructs and there may be differences in emphasis across the years in the curriculum. However, one usually predominates across the curriculum.
26. These constructs offer differing educational possibilities and some of these possibilities are indicated in the table below.

	Body systems science focus	Pathophysiology /patient presentation focus	Diagnosis/ disease focus	Domain focus
Science delivery	+++	+++	+	++
Pathophysiology concepts	++	+++	++	+
Clinical concepts	+	++	+++	++
Para-clinical concepts e.g. culture	+	+++	+++	+++
Integrated delivery	+	+++	+++	++
Clinical relevance	+	++	+++	++
Spiral of learning	++	+++	++	++
Life-long learning	++	+++	++	++

Based on this analysis the patient presentation and diagnosis constructs seem to offer the best coverage of educational imperatives. The patient presentation/pathophysiology concept approach is particularly well suited to life-long learning, as the conceptual approach does not become obsolescent as some specific medical facts can. (See the appendices for the University of Auckland example of learning concepts applied to acute abdominal pain). In addition this approach offers good opportunities for problem-focussed learning. Because of this there is a trend to using patient presentations as the backbone of a medical curriculum. This also reflects real-life medicine.

27. A variety of clinical scenarios can be envisaged including the standard patient/symptom presentation, a radiologic presentation, a laboratory presentation etc. Not all learning can be based on individual patients so scenarios can be developed to include a range of other health issues such as community and population health, wise use of health resources, ethical issues etc.
28. Examples of presentations used or planned for use at the University of Auckland and University of Otago are contained in the appendices. From these it is evident that presentations include a diversity of topics.
29. Questions for the NUS curriculum:
- 1) Which educational construct/s will form the basis of the NUS curriculum?**
 - 2) Which construct would be the most inclusive i.e.: could also represent the other constructs to best advantage?**
 - 3) Should the constructs vary with the years of the curriculum?**

Learning philosophies in the curriculum

30. Learning in the undergraduate medical curriculum needs to be clinically relevant whenever possible. Patient-based and apprenticeship learning is clearly relevant and encompasses the 'ideal' learning philosophy. In this situation, because of the patient's relationship with the student learning is more focussed on individual students rather than groups.
31. However, much learning in medicine, particularly in the earlier years, is away from the patient and involves groups of students. There are a number of philosophies of learning that can apply here and they include:

Knowledge-based learning (KBL)

32. The traditional systematic acquisition of knowledge, which is didactic, lecture based and teacher focussed rather than student focussed. This style of learning is usually delivered in blocks and is delivered to the whole class. Students progressively build up a knowledge base from which they identify key concepts and eventually apply these to clinical problems. Students are largely left to develop their individual learning styles. Collaborative learning is not a strong feature. This style of learning forms the basis of the traditional pre-clinical curriculum.

Task-based learning (TBL)

33. Is a group learning activity, which involves the application of concepts to clinical scenarios. As the clinical scenarios unfold they provide group tasks, which require collaboration and integrated application of diverse concepts. The tasks offer a semi-structured approach to clinical problem solving. Most tasks are conceptual in nature but some also require application of specific knowledge.
34. TBL does not provide a vehicle for teaching detailed theory but rather draws on knowledge gained in other settings. The tutor's role is to facilitate group learning, to provide guidance when necessary and to ensure that concepts are appropriately identified and integrated.

Problem-based learning (PBL)

35. Involves learning by solving problems. The objective of PBL is to help students develop an adaptive approach to knowledge acquisition, problem solving skills, self-directed learning, personal motivation and the ability to learn collaboratively. These attributes represent active learning.

36. Students work collaboratively in relatively unstructured self-directed groups with minimal supervision to focus on a clinical problem and identify what they already know, what they need to learn to understand the problem and where to access the knowledge to resolve the problem.
37. The role of the tutor is to facilitate student learning by supporting and monitoring the learning process. The tutor must instil students' confidence to take on the problem and assist the development of new learning skills.
38. Both TBL and PBL require more input from academic staff than does KBL. Tutors are more active in the development of individual student's learning and can provide better feedback to students on progress. Fortunately the small size of the NUS class means that the number of tutors required is also small.
39. With regard to KBL, TBL, PBL and bedside learning:
 - 1) **What should be the dominant learning philosophy in the NUS curriculum?**
 - 2) **What is the optimum balance of learning philosophies?**
 - 3) **Which learning philosophy/ies offer the best foundation for life-long learning?**
 - 4) **What resources will be required for the different approaches? Will these resources be available?**

Whether to use a block design or spiral design or both

40. Traditional medical curriculums have largely been based on a block design – topics have dedicated time for delivery, are assessed as discrete topics and have limited integration with other topics. Learning in blocks has the advantage of clear focus and simplicity of curriculum design.
41. By contrast a spiral design implies more integration, progressive learning and a more complex assessment programme. The move to greater clinical relevance throughout the curriculum has broken down traditional boundaries and encouraged progressive learning, including spiral learning structures. However, both models have advantages and disadvantages

Block design:

42. Advantages –
 - Provide clear learning focus at a given time
 - Allows learning in depth
 - Provides simplicity for assessment
43. Disadvantages –
 - Learning is largely confined to a restricted time period
 - Integration is more difficult, particularly medical sciences
 - Relevance to clinical practice is less obvious
 - Does not provide a structure to readily accommodate new topics

- Does not provide a clear model for life-long learning

Spiral design:

44. Advantages

- Better clinical relevance
- Easier integration, including medical sciences
- Allows learning from simple to complex
- Allows re-visiting, application and consolidation of learning
- Accommodates new learning topics
- Provides a better model for life-long learning

45. Disadvantages

- Requires more collaboration from teaching staff
- Assessment is more complex

46. A mixture of block and spiral designs can be utilised although it is better if one predominates. For example a predominant spiral design can accommodate blocks if they are small and coordinated to provide input at the most appropriate times. A predominant block design can accommodate spiral components if mini-blocks are featured across the curriculum with the purpose of providing progressive learning.

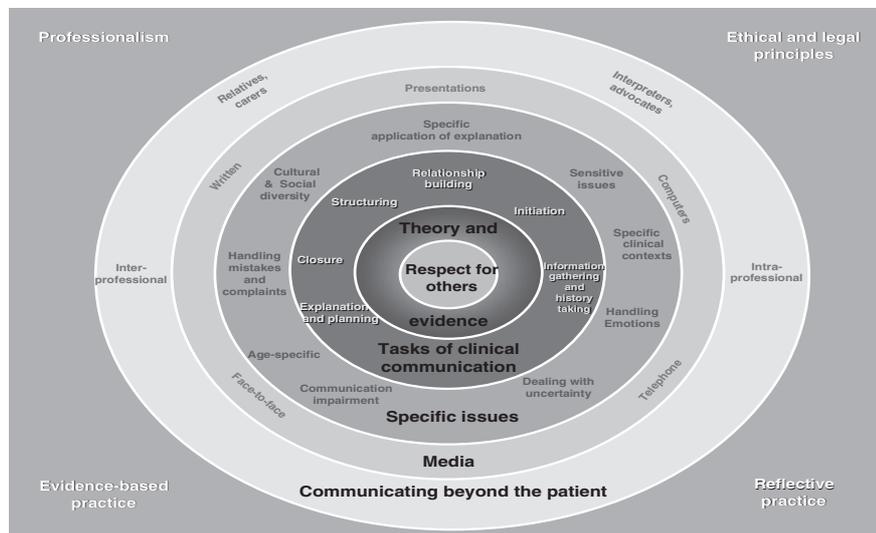
47. Questions for the NUS curriculum

- 1) What is the preferred model for learning at NUS – block learning, spiral learning or a combination of both?**
- 2) If a combination of both, which model should predominate?**
- 3) If a spiral model is chosen how will this fit with teaching of medical sciences?**
- 4) If a spiral model is chosen how will this fit with discipline based clinical attachments?**

Curriculum content

48. The agreed curriculum framework, philosophy, design, domains and the expectations and priorities of NUS and Pacific communities will determine the core curriculum content [1] which will need to be developed with some urgency. The content can also be determined by the availability of teaching resource and delivery. It is most likely however that the specifics and details of core content will be determined by the FoM-NUS from available material modified or developed by them with or without external assistance.
49. Content will need to focus on year 1 (the foundation year), 2 and 3 in the first instance. All pre-existing material will need to be reconfigured to conform to the new curriculum design and philosophy.

50. An example of comprehensiveness of content in a particular domain or topic is the UK communication curricula [13]. However, NUS does not have to have detailed curriculum content in all domains as the lack of detail can be tempered by exploring different learning delivery systems and encouraging students to problem solve.



51. The Science Foundation year at NUS provides a good scientific base and has an essential component of knowledge acquisition. This year could also be the first year of the medical curriculum by aligning some of the papers towards the medical sciences and introducing about three papers that addresses body systems, mechanisms of disease and pathophysiology. Assistance with developing this resource is available from institutional partners in NZ.
52. There is a wealth of material available online [14], from Australian and NZ medical schools and from visiting medical experts. However, this material needs contextualising to the Pacific context and to suit delivery capacity and resource. It is also preferable that the burden of factual information is reduced encouraging students to learn through curiosity with the development of healthy attitudes and behaviour for continuous professional learning [1, 4].

53. We have some questions for you:

- 1) How much pre-existing resource is there that can be modified or adapted to reflect a new curriculum framework?**
- 2) What new learning resource is required?**
- 3) Can you list partners (institutions, individuals) who can assist with content provision and adaptation?**
- 4) What teaching resource and capacity does NUS have to deliver the curriculum?**
- 5) What resources are required to deliver the curriculum?**
- 6) How will we bridge identified gaps?**
- 7) What resources do we have for on-going content development?**

Curriculum outcomes

54. A central component of any curriculum is the definition of expected learning objectives or outcomes. These guide the content of the curriculum and the nature of the assessment programme. Traditionally the main focus has been on objectives but this is now moving towards definition of outcomes. This is occurring because of the need to produce graduates who are fit for purpose. The graduate needs to exhibit competency and mastery in addition to acquisition of knowledge [15]. Objectives can be seen as encapsulating the description of learning whereas outcomes reflect the product of learning. An example can be drawn from learning about cancer –

A ‘standard’ cancer learning objective:

1. Know the major routes of cancer spread
2. Know the common cancer staging classifications

An equivalent cancer learning outcome:

1. Be able to investigate a patient with cancer to determine the extent of cancer spread

55. The outcome reflects the ability required as well as the knowledge required. They are therefore framed as ‘doing’ rather than ‘knowing’ statements. Clearly these abilities mature throughout the curriculum but simple outcomes can still be applied early in the curriculum – the essence should always be ‘how will knowledge you are gaining be used?’ and this becomes relevant early in the curriculum.

56. All components of the curriculum need to have outcomes applied. The outcomes need to be coherent and appropriately linked with other curriculum components both horizontally and vertically. This means the outcomes should be mapped across the curriculum and should illustrate progressive learning. This can involve using the same stated outcome across the years but indicating differing levels of competency – a commonly used gradation of competency is: knows about, knows how (can do), shows how (to others) and does (independently).

57. Once outcomes have been applied they can be very useful to Faculty as a sound basis for assessment. They are also useful for students to indicate the range of competencies required for successful assessment. Outcomes also provide a mechanism to introduce new material into the curriculum but this can mean that some existing outcomes need modification or deletion to limit the total number of outcomes.

58. Questions for the NUS curriculum –

- 1) Is the concept of outcomes accepted as a key element of the revised NUS curriculum?**
- 2) Is the concept of progressive outcomes considered worthwhile?**
- 3) Will outcomes be developed at the outset or developed incrementally over a number of years?**

Postgraduate Years 1 and 2

59. The one or two years following graduation from medical school are known as pre-registration or internship years and they form an important learning and development phase that bridges graduation from university and full vocational training. During this period, with appropriate supervision, it is expected that the doctor will become an increasingly competent clinician “who is able to use the skills of history-taking, examination, and interpretation of investigations, to synthesize patient information and to formulate a patient management plan” [16].
60. In order to make sure that new graduates are supervised and receive the appropriate training, most developed countries have developed curriculums of training for the internship years. The Australian Curriculum Framework for Junior Doctors (ACF) “is an educational template outlining the learning outcomes required of prevocational doctors, to be achieved through their clinical rotations, education programs and individual learning, in order to promote safe, quality health care” [16]. The structure revolves around three main themes: clinical management, professionalism and communication with learning and assessment strategies. The Foundation Programme Curriculum in the United Kingdom requires doctors demonstrate competence in defined areas including communication and consultation skills, patient safety and team work [17]. All doctors are assessed against curriculum outcomes and all assessments are kept in an e-Portfolio. PGY1 and 2 doctors in NZ are required to keep structured learning plans for approval by the Medical Council as competence programmes.
61. The UPNG MBBS programme has two pre-registration years whereas the Fiji National University has one. Both universities have requirements and objectives of training for these years but these are not formally assessed although heads of departments provide recommendations for registration purposes.
62. Some questions for you are:
- 1) **How many pre-registration years should the NUS-postgraduate doctors have?**
 - 2) **Should a curriculum with learning objectives and defined outcomes be developed for the pre-registration year? And who should perform and report the assessment of competence?**

Appendix:

A. List of questions

- 1) What are your thoughts on priority topics and areas of studies for Samoa and the Pacific?
- 2) Is a 5 year curriculum the desired option? If so this will have implications for the curriculum design?
- 3) Should all components be represented in all years of the curriculum?
- 4) Which components need to be delivered as blocks and which can be delivered in an integrated fashion?
- 5) To what degree will the curriculum be delivered progressively (spiral of learning)?
- 6) What emphasis and time allocation will be attached to each component in each year of the curriculum?
- 7) How much of the curriculum should be delivered in a community context?
- 8) Will the NUS papers be predominantly topic based or integrated?
- 9) For each paper what will the balance between in-course and summative assessment be?
- 10) Will students need to pass all papers in a year to progress?
- 11) What domains serve the needs of a Pacific medical school?
- 12) Once domains are identified what weight will each receive in the curriculum?
- 13) Should all domains be assessed to the same degree?
- 14) Which educational construct/s will form the basis of the NUS curriculum?
- 15) Which construct could represent the other constructs to best advantage?
- 16) Should the constructs vary with the years of the curriculum?
- 17) What should be the dominant learning philosophy in the NUS curriculum?
- 18) What is the optimum balance of learning philosophies?
- 19) Which learning philosophy/is offer the best foundation for life-long learning?
- 20) What resources will be required for the different approaches? Will these resources be available?
- 21) What is the preferred model for learning at NUS – block learning, spiral learning or a combination of both?
- 22) If a combination of both, which model should predominate?
- 23) If a spiral model is chosen how will this fit with teaching of medical sciences?
- 24) If a spiral model is chosen how will this fit with discipline based clinical attachments?
- 25) How much pre-existing resource is there that can be modified or adapted to reflect a new curriculum framework?
- 26) What new learning resource is required?
- 27) Can you list partners (institutions, individuals) who can assist with content provision and adaptation?
- 28) What teaching resource and capacity does NUS have to deliver the curriculum?
- 29) What resources are required to deliver the curriculum?
- 30) How will we bridge identified gaps?

- 31) What resources do we have for on-going content development?
- 32) Is the concept of outcomes accepted as a key element of the revised NUS curriculum?
- 33) Is the concept of progressive outcomes considered worthwhile?
- 34) Will outcomes be developed at the outset or developed incrementally over a number of years?
- 35) How many pre-registration years should the NUS-postgraduate doctors have?
- 36) Should a curriculum with learning objectives and defined outcomes be developed for the pre-registration year? And who should perform and report the assessment of competence?

B. Useful resources

Websites and documents:

University of Auckland MBChB Portal

<https://wiki.auckland.ac.nz/display/MBChB/MBChB+Portal>

University of Otago Faculty of Medicine Curriculum, 2011

<http://micn.otago.ac.nz/wp-content/uploads/micn/2013/02/Appendix-7-Guide-to-the-ELM-curriculum.pdf>

Clinical Skills in the Undergraduate Medical Curriculum

<http://micn.otago.ac.nz/wp-content/uploads/micn/2011/05/Faculty-Clinical-Skills-Overview-2013-MASTER-for-Print.pdf>

WHO/WFME Guideline for Accreditation of Basic Medical Education

https://www.google.co.nz/search?client=safari&rls=en&q=WHO/WFME+Guideline+for+Accreditation&ie=UTF-8&oe=UTF-8&gfe_rd=cr&ei=QguGU_34F-nC8gfG_4DIDQ

Tomorrow's Doctors by the UK General Medical Council, 2009

http://www.gmc-uk.org/static/documents/content/Tomorrow_s_Doctors_0414.pdf

Review of Curriculum: Oceania University of Medicine, 2013.

<https://www.dropbox.com/s/r5rj8h4s5kl7454/%23220%20Review%20of%20Oceania%20University%20of%20Medicine%202013.docx>

University of Papua New Guinea Curriculum and Domains, 2014

http://www.upng.ac.pg/smhs_mbbs.html

Standards for Doctors, Medical Council of New Zealand

<https://www.mcnz.org.nz/fitness-to-practise/standards-for-doctors/>

Developing of case scenarios with Pacific contextualisation

Creating and adapting clinical scenarios to address learning outcomes in the different disciplines should be contextualised to the Pacific context and based on concepts of integrative learning whilst grounded in the biomedical sciences and a firm knowledge of pathophysiology. Assistance in adapting cases is available from local heads of departments and from external assistance from NZ. An example of such a clinical scenario follows:

<p>Adult with abdominal mass A 52 year old woman presents to her family doctor with bloating of her abdomen, worsening over the last few months associated with intermittent nausea and weight loss. Her mother had endometrial cancer in her 60's.</p>	
<p>Applied Science for Medicine Anatomy of the abdomen and pelvis Biochemistry of tumour markers Processes and routes by which malignancies metastasise Outline the pharmacology of commonly used cytotoxic drugs Mechanisms by which gene mutations are involved in the initiation and progression of cancer</p>	
<p>Clinical and Communication Skills History from a patient with abdominal distension; include consideration of malignancy Perform and record an examination of the abdomen and lymph nodes. Include checking for ascites, rectal, genital and speculum examinations if indicated. Recognise a distended bladder Perform urinary catheterisation Indications for CT abdomen, abdominal ultrasound, transvaginal ultrasound, ascitic tap, guided biopsy of mass Interpret abdominal X-ray, full blood count, electrolytes, creatinine, liver function tests, erect chest X-ray, ascitic fluid pathology report Interpret tumour markers (CEA, CA-125, CA19-9) Differential diagnosis of abdominal and pelvic masses Management of intra-abdominal malignancies: surgical, oncological and palliative approaches Genetic testing and cancer screening in families with familial cancers; prophylactic interventions for those with inherited mutation of familial cancers</p>	
<p>Personal and Professional Skills Consent for intimate examination and use of chaperone Delivering life-changing news Interdisciplinary care for patients with known or suspected cancer Role of formal hospital multidisciplinary meeting in facilitating appropriate care for patients with cancer</p>	
<p>Pacific contextualisation Cater for differential health literacy needs of Samoan patients ma aiga Awareness of differing risk profiles for cancer between Samoan (and other Pacific populations). Understanding the role of cancer services in the community, role of community nurses, the immediate and extended family. Are there cultural or social issues that may affect the woman's palliative care? Appreciate unique familial mutations in Pacific families for developing cancers such as gastric cancer, and how this information has impacted on cancer research.</p>	
<p>Population Health Effectiveness and cost effectiveness of screening tests for bowel cancer and gynaecological cancers in the general population Epidemiology of bowel and gynaecological cancers; identify genetic, environmental and lifestyle risk factors for cancer development in Samoa and the Pacific Ethical, social, and medical issues around genetic screening</p>	
<p>Conditions to be considered relating to this scenario</p>	
<p>Common</p>	<p>ovarian carcinoma, bladder distension, hepatosplenomegaly, fibroids, ovarian cyst, ascites, gastric cancer, colorectal cancer, uterine cancer</p>
<p>Less common but 'important not to miss'</p>	<p>lymphoma, abdominal aortic aneurysm, abdominal/pelvic metastases</p>
<p>Uncommon</p>	<p>Crohn's disease</p>

References

1. Bull S, Mattick K: **What biomedical science should be included in undergraduate medical courses and how is this decided?** *Medical teacher* 2010, **32**:360-367.
2. Kern D, Thomas P, Howard D, Bass E: **Curriculum Development for Medical Education: A six-step approach** The John Hopkins University Press; 1998.
3. Wilkinson T, Perez D: **Review of Curriculum: Oceania University of Medicine.** In.: Univ of Otago; 2013.
4. Jones R, Higgs R, De Angelis C, Prideaux D: **Changing face of medical curricula.** *The Lancet* 2001, **357**(9257):699-703.
5. Laurence C, Newbury J, Wilkinson D: **Increasing rural activity and curriculum content in the Adelaide University Medical School.** *The Australian journal of rural health* 2002, **10**(4):220-228.
6. Coria A, McKelvey TG, Charlton P, Woodworth M, Lahey T: **The design of a medical school social justice curriculum.** *Academic medicine : journal of the Association of American Medical Colleges* 2013, **88**(10):1442-1449.
7. Graber DR, Bellack JP, Musham C, O'Neil EH: **Academic deans' views on curriculum content in medical schools.** *Academic medicine : journal of the Association of American Medical Colleges* 1997, **72**(10):901-907.
8. Sales C, Schlaff A: **Reforming medical education: A review and synthesis of five critiques of medical practice.** *Social Science & Medicine* 2010, **70**:1665-1668.
9. Howe A, Champion P, Searle J, Smith H: **New perspectives—approaches to medical education at four new UK medical schools.** *BMJ: British Medical Journal* 2004, **329**(7461):327.
10. van Weel-Baumgarten E, Bolhuis S, Rosenbaum M, Silverman J: **Bridging the gap: How is integrating communication skills with medical content throughout the curriculum valued by students?** *Patient education and counseling* 2013, **90**(2):177-183.
11. Kitzes J, Savich R, Kalishman S, Sander J, Prasad A, Morris C, Timm C: **Fitting it all in: integration of 12 cross-cutting themes into a School of Medicine curriculum.** *Medical teacher* 2007, **29**:437-442.
12. Otago Uo: **Batchelor of Medicine and Batchelor of Surgery: A guide.** In.; 2011.
13. Von Fragstein M, Silverman J, Cushing A, Quilligan S, Salisbury H, Wiskin C: **UK consensus statement on the content of communication curricula in undergraduate medical education.** *Medical education* 2008, **42**(11):1100-1107.
14. **MBChB Portal** [<https://wiki.auckland.ac.nz/display/MBChB/MBChB+Portal>]
15. General Medical Council: **Tomorrow's Doctors.** In. Manchester; 2009.
16. **Australian Curriculum Framework for Junior Doctors** [<http://www.cpmec.org.au/ACF-2010/introduction.cfm>]
17. **The Foundation Programme** [<http://www.foundationprogramme.nhs.uk/pages/home/about-the-foundation-programme>]