Introduction
In 2012 the Medical School began a review of the MBChB curriculum with a view to designing and implementing a new curriculum based on feedback from key stakeholders, GMC reports, NSS data and medical education literature. The purpose of this report is to announce the philosophy, framework and structure of the new curriculum and provide details of how and when it will be developed. The opportunities for involvement in content development will also be outlined.

Background
A review of the secondary data from GMC reports, External Examiner reports, literature published by those in the Medical School, the NSS, ASR, medical education literature and Tomorrow’s Doctors has been conducted. This has been enhanced by the collection of primary data gathered through face to face engagement with key stakeholders. Views have been sought from students, clinicians, patients and University staff through the use of World Café events, focus groups and discussion at grand rounds events. 18 events were held and between 500- 600 people consulted. The data from each of these sources has been analysed individually into themes, then each source compared to identify commonalities. Those themes that appeared regularly throughout the evidence sources have been used as the basis on which to develop the new curriculum and were identified in the preliminary curriculum review report published in June 2013.
Since the preliminary report was published we have been developing the philosophy, framework and structure of the new curriculum outlined in this report.
A number of decisions have been made based on the evidence gathered which have informed this development. These decisions are discussed below.

Teaching Methods
Problem-based Learning will be discontinued as the mainstay of the Liverpool curriculum. During the review students, clinicians and some University staff all expressed confusion and concern regarding the level of depth required within the PBL process. The vast majority of clinicians we engaged with found that the current dependence on PBL as the driver for learning extremely challenging. There were numerous concerns expressed over the basic science knowledge of the students that seemed to be inadequate at times, and very variable. Also the lack of clarity regarding placement learning objectives leaves clinicians essentially guessing what they feel the students should be learning.
Students and clinical staff believe that in the early years of the curriculum PBL is not delivering the outcomes they require in terms of anatomy and physiology. This leads to a lack of confidence from students and a perception that Liverpool students do not have sufficient basic science knowledge to underpin their clinical practice from clinicians. Neither of these attitudes contributes to a particularly positive learning environment. The original spiral curriculum was designed so that the integrated
curriculum would cover basic sciences throughout the five years. On a practical level, busy clinicians do not have the time to cover all the relevant basic sciences from scratch. This dictates a need for a solid foundation in basic sciences at the start of the course.

PBL has increasingly become unsustainable within the course due to the following reasons:

- Increased medical students numbers
- Variation in quality of PBL facilitators
- Lack of clinical academics and NHS consultants offering to become PBL facilitators
- Difficulties in designing learning outcomes and assessment blue print due to the lack of structure in the curriculum

However aspects of the PBL approach, such as early patient contact, learning in small groups and case based learning will be retained as these have received positive feedback from students and staff.

Within the new curriculum the learning objectives will drive the adoption of the most suitable teaching and learning methods; using combinations of TEL, case based learning, lectures and tutorials as appropriate.

**Clinical Skills**
At the moment the front loading of clinical skills in Year 1 means that many students do not have the opportunity to practice these skills once on placement within a timely manner. By spreading the coverage of clinical skills throughout the course we can ensure students have the skills they need, when they need them and have the opportunity to practice skills that in reality they have little opportunity to do so when on placement.

We will also be expanding the remit of the clinical skills department to include simulation training that encompasses clinical decision making and team working as well as practical skills. We will be shifting the focus of physical examination skills from University to practice to address the feedback from students that clinical examination skills are practiced and assessed differently.

**Assessment**
A new assessment strategy will be implemented when the curriculum content is agreed. There will be an increased emphasis on assessment for learning through the use of subject specific tests such as quizzes, anatomy spotters etc. We are reviewing the current load of assessment and considering the balance between assessment for and assessment of learning. Emphasis will be placed on developing an accurate assessment blueprint, rigorous methods of standard setting and psychometrics of written and clinical assessment.

On placements, we will be introducing the use of appropriate workplace assessment methods, using an e-portfolio to record and monitor placement learning. Reflective practice will be a key component of students’ workplace learning.
Philosophy of the new curriculum
The new MBChB curriculum at Liverpool has been developed around a core set of values and educational principles.

Our belief is that a successful undergraduate curriculum must:
- Have the student and the patient as its main focus
- Be underpinned by rigorous educational principles and evidence-based practice
- Be fit for purpose in a modern healthcare context
- Be delivered in an environment of guided learning, using outcomes to determine its content and delivery

We want to build a curriculum that
- Encourages students to become active learners and reflective practitioners
- Encourages students to become holistic, patient-focused medical practitioners
- Integrates scientific principles of medicine with workplace learning in clinical settings
- Ensures a spiral curriculum in which themes are revisited throughout the length of the course, encouraging students to build on prior knowledge and skills.
- Helps students develop the lifelong learning skills required in professional practice.
- Promotes academic and leadership aspirations among our students to become more than competent practitioners

Structure of the curriculum
The curriculum framework is based on the three main outcomes of Tomorrow’s Doctors (GMC 2009): the Doctor as Scholar and Scientist, the Doctor as Practitioner and the Doctor as Professional. Each of these outcomes has a series of vertical themes to create a truly spiral curriculum. Four horizontal themes will cut across the vertical themes to provide stage appropriate coverage of these important themes within each vertical theme.

Vertical themes
Doctor as Scholar and Scientist

The Science of Medicine
There is considerable evidence to support a greater emphasis on basic sciences within the curriculum. The Science of Medicine theme will run with incrementally complex clinical application during the first two years of the course.

- A systems-based approach will be used and delivery will be through a combination of lectures, tutorials, HARC sessions, case based learning, clinical skills sessions and relevant clinical placements.
The Science of Medicine theme will focus on biomedical sciences, with Psychology and Sociology as Applied to Medicine (PSM), Population Perspective (Public Health, Epidemiology and Evidence) (PP) and Therapeutics from the horizontal themes contributing to it.

It is envisaged that PSM, PP and Therapeutics will continue to be covered in later years, building in complexity and clinical relevance as students become more clinically mature.

Clinical science in the later years of the curriculum will be covered through placements.

Research and Scholarship
Teaching and the ability to critique and make best use of research are core skills for doctors. This will be reflected throughout the spiral curriculum.

- The theme will be designed in a way to allow students to develop core research knowledge and skills in the first two years, followed by opportunities to either further build on these skills or follow a more focused pathway in a specific area of interest. This theme will incorporate the principles of existing SSMs and CTM but seek to expand the type of research activity undertaken and assessed in innovative and creative ways.
- This theme will also introduce students to basic principles of medical education. We hope to provide interested students with an opportunity to work in an area of scholarly interest (research or teaching), with a possibility of graduating with an MBChB and an additional Master’s degree or diploma in a subject of interest (e.g. Medical Education, Business Management, Biomedical Science).

Doctor as Professional

Leadership and Management
University Undergraduate Medical Schools are required by the GMC to nurture and develop the clinical leaders of the future. The NHS is currently under financial constraints and undergoing a major reorganisation based on a clinically led management structure. If our young doctors do not have the leadership and management skills to meet these challenges then there will be a direct consequence for patient care.

- Leadership development is not about hierarchs but managing the everyday problems of medicine within the multi-professional teams that all doctors now work. The essence of a doctor is the ability to manage and lead, within a team structure, the uncertainties, ambiguities and complexities of diagnosis and treatment. Effective leadership requires judgment, professionalism, compassion, honesty, courage, risk assessment, self-awareness and above all a set of shared behaviours and beliefs within the team.
- In 2010 The Academy of Medical Royal Colleges provided guidance about Integrating the Medical Leadership Competency Framework into
Undergraduate Medical Education. The document provides an extensive list of skills and suggested assessments. These concepts and documents will be incorporated into the new curriculum in a systematic and structured way.

**Professionalism**
A theoretical framework of professionalism as a complex system will be used to address professionalism at an individual, team and organisational level. This will cover:
- Understanding values in medicine – Good Medical Practice; Ethical and legal frameworks;
- Attitudes and behaviour; compassion, empathy and respect for patients; respect for colleagues; appropriate attire, digital professionalism
- Communication with patients, their families and other professionals;
- Personal attributes - life-long learning, career management, reflective practice, self-regulation, self-assessment, insight.

Professionalism will be taught and assessed throughout the course.

**Doctor as Practitioner**

**The chronically ill patient**
This theme reflects the changing population demographics and patient profile in the UK and worldwide. These include an ageing population, increasing numbers of people living with chronic conditions, the emergence of the informed patient and the increase in prevalence of obesity, diabetes etc.
- This theme will use a systems based approach and will be delivered in a combination of primary and secondary care settings, with the horizontal themes enriching the learning experience of the students. In addition, there will be opportunities to bring all the students back to the University at regular intervals to complement their learning with lectures, case based tutorials and TEL material.

**The acutely ill patient**
There is evidence that doctors are failing to recognise and appropriately manage the acutely ill patient.
- This theme will cover approaches to management including recognition, resuscitation, escalation and referral of acutely unwell patients. A systems based approach will be used to deliver this theme using combined methods and placements as discussed above.

**Patient Safety**
This theme reflects an international drive to incorporate principles of patient safety early in the curriculum. During the early years this will focus on developing core knowledge and skills related to understanding and managing clinical risks [e.g. healthcare related infection control and medication errors].
- The theme will be developed to provide students with an over-arching sense of patient safety in practice by understanding human factors engineering,
team behaviours and continuous quality improvement strategies. The framework will map onto recommendations from the *WHO Patient Safety Guide for Medical Schools [2008]* and the Academy of Medical Royal Colleges’ *Guidance for Undergraduate Medical Education: Integrating the Medical Leadership Competency Framework [2010]*

**Horizontal themes:**

- Psychology and Sociology as Applied to Medicine (PSM), Population Perspective, (Public Health, Epidemiology and Evidence) (PP), Therapeutics and Communication for Clinical Practice (CCP) will be integrated within each vertical theme reflecting the key role they play within all aspects of medical preparation and practice. These will be taught using a spiral approach to ensure relevance within each year of the course.
- The communication skills of Liverpool students were highly praised universally throughout the review by clinicians; and we should seek to maintain these high standards through embracing innovative and patient led techniques within the new curriculum.
- Therapeutics was an area of concern expressed by clinicians during world café events. The new curriculum will address this through this horizontal theme.

**Structure for Placements**

Placements will be structured throughout the curriculum under three key areas: Medicine, Surgery and Primary Care. The GMC has a number of core placements: Medicine, Surgery, Obstetrics and Gynaecology, Paediatrics, Psychiatry and General Practice. We intend to add medical and surgical specialities, Care of the Elderly, Emergency medicine and Palliative and Critical Care to the requirements of our course.

- All students during their 5 years at Medical School will rotate through the core placements and have the opportunity to pick from a “menu” of optional placements according to their area of interest.
- Placements will take place in uninterrupted blocks so that students are not travelling between the University for Taught Sessions, GP placements and hospital placements during the week. This decision has been informed by feedback from clinicians and students who find that placements become fragmented under the current system and that often students miss key clinics due to other commitments. The longer, uninterrupted blocks combined with a new approach to placement assessment will also allow clinicians to build relationships with students and improve their educational experience through clinical immersion.
- In between placement blocks students will return to the University for lectures, small group work and reflective practice during “consolidation weeks”. During the review students stated that they enjoyed the University Community Clinical Teaching (UCCT) sessions as they were relevant; thought
provoking and taught by clinicians. Within the new curriculum we are going to expand the model used by the UCCTs to all placements, so that all students after any placement will benefit from the same support. The sessions will also be expanded to include the vertical and horizontal curriculum themes.

- In order to ensure that the structure of placements does not disadvantage any students in terms of the opportunity to practice relevant skills prior to summative exams, the University will build in time for revision weeks where clinical skills sessions will be open to students as well as revision lectures.

**Development Plan**
Each vertical and horizontal theme within the new curriculum will have a working group. Clinicians, academics, students and administrative staff are encouraged to join the theme they feel they can contribute the most to. The themes will be developed by each working group with the overall final outcomes for each as a starting point. Once the content has been developed it will be split down into years in order to make delivery of the curriculum possible.

**Priorities and Timetable for Changes**
2014 – Major changes will take place in Years 1 and 3 of the curriculum to implement the new curriculum structure.

2015- Major changes will take place in Years 2 and 4 of the curriculum, as well as some minor changes potentially to Year 5 in order to complete the roll out of the new curriculum. By 2015 all students within the Medical School will be on the new curriculum.

In order to deliver this scale of change over a short period of time we will need to prioritise our activity.
The first priority will be for each of the working groups to develop the overall objectives for each theme, then more detailed objectives for each year and module. This stage needs to be completed by January 2014.

Once this stage is complete we will need to focus attention on developing the detail, teaching and assessment methods and structure for each year of the programme. As we intend to change the first and third year in 2014 focus will be given specifically to these years initially followed by years 2, 4 and 5.

**Structure of Years**
Whilst the content of each theme is yet to be developed overall the structure of the curriculum will have a larger proportion of University based activity within the first 2 years with focused placement activity moving towards a more even balance within Year 3, and progressing to much heavier weighting of time spent in clinical practice within Years 4 and 5.
FAQs

I can’t see how my specialty is represented?
As part of the drive to widen placement experiences we are attempting to move students away from the idea that they only see certain conditions or presentations in speciality clinics. Therefore we want to encourage students to see placements as environments where they practice medicine rather than one specific speciality. All students in the new curriculum will rotate through the core placements at some point during their 5 years of training. This will allow us to open up other opportunities for students to select smaller specialities as per their areas of interest. If you do not currently have students allocated to your area and are interested in offering placements to students please contact us.

In terms of taught content some specialities will fit within the current curriculum themes. You may wish to become involved in one of the theme working groups. If so please contact the chair for this group.

It will not be possible for every speciality to be a core part of the new MBChB programme; otherwise the programme would be 10 years long! If your speciality cannot be represented in core teaching or placements we will be developing an online video/resource library for students to give them the opportunity to access webinars, short online courses or video diaries regarding sub specialities. If you would like to become involved with this please contact Paul Duvall, Technology Enhanced Learning Lecturer.

How are students already on the programme going to benefit?
Students in Year 5 at present will not benefit from the new curriculum as it will be implemented from 2014; but are encouraged to assist in development of the new curriculum as key stakeholders with useful experience.
Students in Year 4 at present will experience the new electronic portfolio approach to PETA in Year 5.
Students currently in Year 3 will also benefit from the new portfolio.
Students currently in Year 2 will go into the new curriculum in Year 3 and complete the rest of their training per the new curriculum model.
Students currently in Year 1 will enter the new curriculum when they start Year 3.

Are the philosophy, structure and plans outlined in this document final?
The philosophy for the curriculum as well as the overall curriculum map is final as this has been developed using evidence from the curriculum review. The structure of years and the content of each theme are not yet developed so there are plenty of opportunities to input into the development of the course. This content will be developed over the coming months through the working groups.

The timeline is tight- is it realistic?
The timeline is ambitious; however we believe that changes need to happen sooner rather than later. By phasing the changes to the curriculum over the next 2 years we
will allow students currently on the programme to benefit from the new curriculum too, which is important for student morale. It also limits the impact of running two different curricula over a 4 year period which is the alternative way to implement a new curriculum. Running two different curricula concurrently is extremely complex and often resources (human and physical) are thinly stretched during such a period which has a detrimental effect on staff and impacts on the student experience.

How do I get involved?
Each theme within the new curriculum will have a dedicated working group with a nominated Chair. Clinicians and students are encouraged to join the theme they feel they can contribute the most to. If you wish to contribute to more than one theme, please feel free to do so. The content of each theme will be designed by the group. Please contact Liz Moore, Curriculum Administration Lead and inform her of your name, specialty, contact details and which theme you would like to be involved with.

Key Contacts
Head of Undergraduate Medical School
Professor Vikram Jha
Vikram.jha@liverpool.ac.uk

Curriculum Lead
Ceri Coulby
coulbyc@liverpool.ac.uk

Curriculum Administration Lead
Liz Moore
lizmoore@liverpool.ac.uk

Paul Duvall
Technology Enhanced Learning Lecturer
duvallp@liverpool.ac.uk
## New MBChB curriculum

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