The Evolution of Undergraduate Medical Training at The University of the West Indies, 1948–2008

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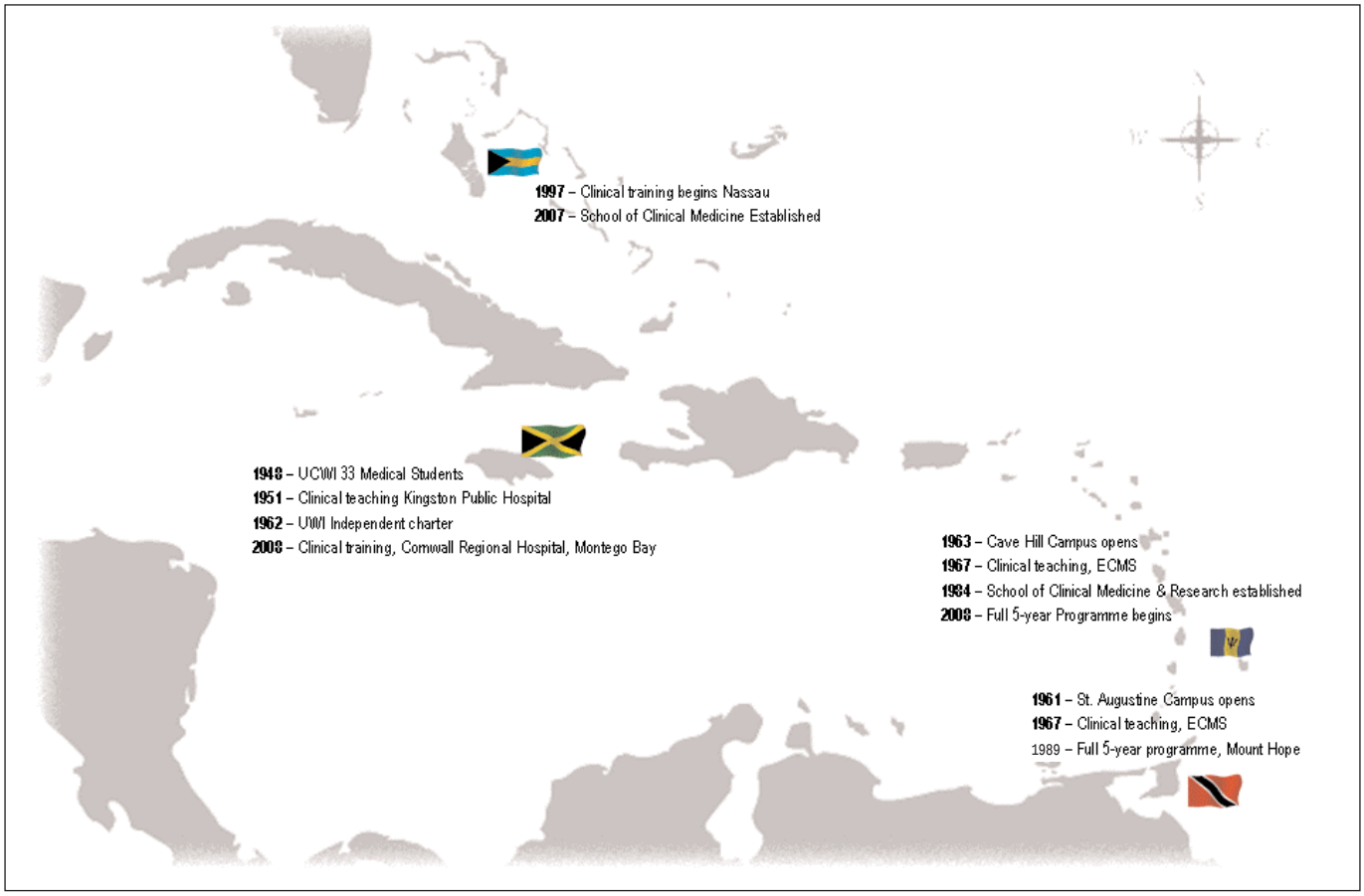

Figure: Evolution of Medical Training at The University of the West Indies – Some important dates

1948–1977 (Following tradition)

The story of the early development of The University of the West Indies (UWI) and the first 33 medical students who entered the fledgling University College back in 1948 is well documented (1–3).

The plans which led to the development of a medical school in the colonies began in London during the turbulent years of World War II. Against a background of reconstruction and development, the United Kingdom Universities established a special commission in 1944 to see about the promotion of higher education, learning and research, and the development of universities in the colonies.

In January 1947, at the first meeting of the University College's Provisional Council, it was decided to site the new college at Mona in Jamaica on lands encompassing the original boundaries of three sugar estates, remnants of which can still be seen. The first students were housed and taught in the wooden buildings of the Gibraltar Camp which had been constructed during World War II to house refugees from Gibraltar and Malta as well as German and Italian prisoners of war. In 1947, it had been agreed that the Camp should be vacated and handed over for the use of the new university.

The University College of the West Indies was only one of several colonial medical schools to be established by Britain at that time. The same pattern and thinking was applied to schools established in the Gold Coast, Nigeria, Rhodesia and Uganda, though ours was the first to produce graduates.

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The new College at Mona was specially developed as an overseas college of the University of London and epitomized the European concept of medical training as part of a university experience. As expected in the development of these schools, current trends in medical education were employed and any differences were based on local needs and limitations. In the case of the University College of the West Indies, the curriculum followed the existing system at the London school with the 'novel' inclusion of 'preventive' and 'tropical' medicine in the second clinical year.

The first students, who began classes in October 1948, were selected from almost 800 applicants and came from across the Caribbean. The curriculum followed by those early students was essentially that inherited from the University of London which administered the programme, provided the teaching staff, conducted the assessments and, until 1962, also granted the degree.

1948 MB BS Curriculum

Year	Oct–Dec	Jan–Mar	Apr–Jun	Jul–Sep
1	Chemistry, Physics Biology	Chemistry, Physics Biology	Chemistry, Physics Biology **1st MB Examinations**	Vacation
2	Anatomy Physiology	Anatomy Physiology	Anatomy, Physiology Biochemistry	Vacation
3	Anatomy, Physiology Biochemistry	Anatomy, Physiology Biochemistry, Pharmacology	Anatomy, Physiology **2nd MB Examinations**	Vacation
4	Pharmacology Introduction to Clinics	Junior Medicine	Junior Surgery & 4 Weeks Anaesthesia	Surgery
5	Medicine Ophthalmology	Paediatrics Venereal Disease Preventive Medicine	Pathology Dermatology Preventive Medicine	Obstetrics & Gynaecology Preventive Medicine
6	Obstetrics & Gynaecology	Medicine, Antenatal, Mental, Dentistry **Part 1 Final Exam (Path.)**	Surgery ENT	Revision **Part 2 Final Exam.** **Medicine, Surgery, Ob/Gyn**

At the beginning, the five-year programme was supplemented by an additional science year since the background of many of the early students was based in the arts. Two years of discipline-based study (Anatomy, Physiology and Biochemistry) preceded 2nd MB examinations and was followed by three clerkship-based clinical years. Pharmacology was taught shortly after 2nd MB and Pathology (and Microbiology) teaching began in the penultimate year.

Teaching in the first two years was based primarily on didactic lectures and practical laboratory work including cadaver dissection in anatomy while the clinical years were hospital-based, comprising a series of clerkships in the medical and surgical disciplines and the specialties, a course in Pathology/Microbiology and lectures in Preventive Medicine.

The academic year at that time was comprised of three 'terms': Michaelmus (October – December), Hilary (January – March) and Trinity (April – June). Teaching in the clinical years, however, followed the calendar year with shortened Christmas, Easter and summer vacations.

There was little need for significant major curricula reform in the first twenty years. The early graduates established a reputation for excellence both regionally and internationally, particularly in terms of clinical skills. Expansion in student numbers had incrementally increased to approximately sixty with modest increases in staff but with very little change in structure or delivery of content.

At this time, the medical training programme was still based entirely at a single university campus situated at Mona in Jamaica with a 'Caribbean' student body made up primarily of nationals of the fourteen contributing member states of the existing British colonies.

In the mid 1960s, the regional governments saw the need to increase the number of doctors trained and annual student intake was increased for the first time to approximately one hundred. This increase demanded expansion of clinical training and it was decided to develop additional teaching sites outside of Jamaica. Teaching staff were appointed at the Port-of-Spain General Hospital in Trinidad and Tobago and at the Queen Elizabeth Hospital in Barbados. Unfortunately, plans to expand teaching to Jamaican Government hospitals outside of Kingston did not materialize as the Jamaican Government reneged on its promise to establish the necessary staff posts and student facilities. Nevertheless, commencing in 1962, the Eastern Caribbean Medical Scheme, as it came to be called, gave final year students at Mona the option of doing their senior clerkships in Jamaica, Trinidad and Tobago or Barbados.

In 1962, Jamaica and several other former colonies gained political independence from Britain. In that same year, the University also became independent with authority to grant its own degrees. However, despite the three-fold increase in student numbers, the structure, delivery and assessment of the MB BS curriculum at Mona remained relatively unchanged. This is not to say that it was entirely static. There were limited infusions of new content based on expansion of medical knowledge and some tweaking of

course content occurred but there was little real change in overall structure or philosophy. Discipline-based teaching and assessment continued to be organized and delivered by Departments, our graduates continued to excel and formal accreditation of the programme continued to be granted by the General Medical Council (GMC) in the United Kingdom. There seemed no reason to change a winning game.

As a satellite of the University of London, the first administrators, members of academic staff and examiners were appointed on contract from overseas. The first teachers were highly motivated by the challenge of establishing the new overseas medical school and many stayed on to contribute to its development. It was not until 1961, however, that the first West Indian, Harry Annamunthodo, was appointed to a Chair in the University College. A native of what was then British Guiana, he became Head of Surgery and was later knighted by the Queen for his services to the institution and to surgery in the region.

1978–1997 (Innovation and individuality)

This static position regarding delivery of the curriculum would not much longer persist. The advances in medical knowledge alone would soon have resulted in the need to adapt the programme of training to cope with the demand to include more and more in an already heavy educational programme. Coupled to this were the wider social changes taking place globally and regionally. Political independence and the emergence of 'third-world' thinking amongst the emerging nations of the Caribbean began to influence the perceptions of the sort of doctor that was needed to serve the people of the region.

The first really significant reform of the medical curriculum began to take shape at Mona in the 1970s and was triggered by a number of related events that fuelled a desire for change. These catalysts focussed on the need to improve training in primary medical care with a shift of emphasis from hospital to community-based medicine. The regional governments at the time were strongly influenced by the apparent success of the Cuban healthcare model and sought a redefinition of the medical graduate who could better serve the needs of their populations. This position was to be enhanced by the World Health Organization's declaration that encouraged "urgent action by governments, health-workers, and the world community to protect and promote the health of all the people of the world" [WHO, 1978] (4).

In their quest to adopt the principles of primary healthcare training, Caribbean Governments looked to its regional university to adapt its training programme to meet the demands for providing new doctors to serve the wider community. The result was the phased implementation of a new curriculum at Mona in October 1978 with a greater emphasis on Community-based medicine.

Using a 1-3-2 model, the main features of this new curriculum were a truncation of the time spent in preclinical training, infusion of 'community medicine' into both phases of the programme and a 24-month 'internship' that included a period of mandatory service in a rural community health-setting.

History suggests that in their haste to implement the new structure, administrators did not seem to appreciate the need to achieve buy-in from senior teaching staff. And so, although the basis for change was well-founded and well-intentioned, implementation of the new curriculum was a stormy period in the history of the Faculty. There were scheduling difficulties resulting from the simultaneous delivery of two curricula of different lengths and, despite agreement to reduce core content in the preclinical years, very little cutting actually took place. As a result, there were complaints of overcrowding and stress on students from cramming the same or more material into the shorter time. In 1982, for the first and only time in its history two medical classes graduated in the same year.

Nevertheless, the first graduates who emerged were a special and resilient group who adapted well to the chal-

Plan for 1978 MB BS Curriculum

Year	Oct–Dec	Jan–Mar	Apr–Jun	Jul–Sep
1	Biochemistry, Community Health, Anatomy, Physiology	Biochemistry, Community Health, Anatomy, Physiology	Biochemistry, Community Health, Anatomy, Physiology	'Slip term' **Exams in Biochemistry and Community Health**
2	Anatomy, Physiology **Exam in Nov – Dec**	Pharmacology **Exam in April/May**	Pathology & Microbiology Introd. & Junior Clinical Clerks	
3	Pathology & Microbiology Introd. & Junior Clinical Clerks **Part 1 Path/MicroB Exam**	Rotating Specialty Clerkships (Orthopaedics, Anaesthesia, Ophthalmology, Obstetrics, Dermatology, Psychiatry, Community Health, Radiology, Otolaryngology, Pathology/Microbiology) **Part 2 Path/MicroB Exam**		
4	10-week rotating final year rotations (Medicine, Surgery, Obstetrics & Gynaecology, Child Health, Community Medicine/Elective)			
	Revision **Final MB BS Exams** **Medicine, Surgery. Ob/Gyn**	Internship (2 years)		

lenges that they had faced. And these challenges were not yet over. The commitment by governments to provide supervised training posts in the rural areas for the compulsory community health internship never fully materialized and this shortage of posts required 'modifications' to the mandatory rural health experience.

Not surprisingly, the GMC was unhappy with this arrangement and in their 1983 report, following an accreditation visit, stated: "*We do not think that the General Medical Council will feel able to continue to grant full registration to holders of the degree of MBS (sic) of The University of the West Indies under the conditions of the present curriculum*." They however agreed to reconsider this decision provided that certain of their recommendations were implemented by May 1986.

Faced with this ultimatum, the Faculty rapidly undertook a 'quick fix' that involved restoration of the 'lost time' in the preclinical programme through reintroduction of a 'fifth term' and abbreviation of the two-year internship to eighteen months. These changes were enough to satisfy the General Medical Council who in 1986 agreed to continue its recognition of the MB BS Degree.

However, the after-shocks of this period left many difficulties for the administrators. Failure to define a core and the tendency to continue to add 'essential' new elements resulted in overcrowding and adjustments to examinations. As a result, it took almost a decade for the Faculty to bring some stability to the new curriculum. Small changes continued to take place with the timing of clerkships and examinations – matters that were further complicated by the decision of the University during this time to adopt the semester system.

Nevertheless, although the curriculum upheaval of the 70s was unsettling, it had a most important and lasting end-result – the retained emphasis and continuity of the community medicine experience for students throughout the training programme. In this regard, it put UWI 'ahead' of many other medical schools that were still seeking ways to achieve this. By 1995, many began to breathe a sigh of relief that curriculum change was over and that a lasting and stable structure was once again in place.

The winds of change had already begun to blow however. A number of major curriculum retreats took place during these years. These not only grappled with fixing the problems resulting from the old 'taxidermy approach' to curriculum change but also noted trends taking place in medical education elsewhere. It should be recalled that it was in 1993 that the General Medical Council published the landmark document 'Tomorrow's Doctors" which contained recommendations for fairly radical changes in the training of doctors.

During this same period, the Government of Trinidad and Tobago began to plan implementation of a full five-year medical programme at the UWI St Augustine campus. The development team responsible for implementing the curriculum at St Augustine decided not to transfer the 'traditional' Mona curriculum but rather to adopt the problem-based approach that was receiving wide acceptance in medical education circles.

The new medical sciences complex, the Eric Williams Medical Sciences Complex, in Trinidad and Tobago opened at the Mount Hope site in 1989 and for the first time, the UWI had two medical schools offering different curricula – one 'traditional', one modern – with students from both sitting a

1995 MB BS Curriculum

Year	Semester 1 (Sep–Dec)		Semester 2 (Jan–Jun)	
1	Anatomy, Physiology Community Health	**December Examination in Community Health**	Anatomy, Physiology Biochemistry	**June Examination in Biochemistry**
2	Anatomy, Physiology	**December Examination in Anatomy & Physiology**	Pharmacology	**Jun. Examination in Pharmacology**

	July					**June**
3	Introduction to Clinical Practice	Pathology Microbiology	Rotations in Medicine, Surgery, Community Health)	Pathology Microbiology	Rotations in Medicine, Surgery, Community Health)	Rotations in Medicine, Surgery, Community Health

	July						**March**
4	Psychiatry	'Specials' (ENT, Radiol. Derm.)	Applied Pathology Microbiology	Orthopaedics + Ophthalmology	Anaesthetics + Ophthalmology	Community Health	Obstetrics & Gynaecology

	April						**May/June**
5	**Final Exam Pathology Microbiology**	Medicine	Surgery	Obstetrics & Gynaecology	Child Health	Community Health/Elective	Revision period **Final MB BS Exam**

common 'traditional' final qualifying examination. While this provided some assurance that the final products to receive the MB BS (UWI) degree were comparable, the matter was complicated by the simultaneous development of Dental, Veterinary and Pharmacy programmes in Trinidad and Tobago. This necessitated a sharing of resources and a dove-tailing of teaching that would later complicate efforts to harmonize the medical undergraduate programme with Mona.

It is unclear in retrospect whether this divergence was a wise decision but the 'separation of the ways' that this caused was facilitated by other factors such as the abolishment of the post of University Dean and other changes in the overall governance of the University (5) that soon led to greater autonomy of the campuses and, in some cases, to an unhealthy degree of inter-campus rivalry.

1998–2008 (Quality, standards and competition)

Discussions that prompted the second significant curriculum reform began at Mona in 1997. By this time, differences in sequence, content and methodology between Mona and St Augustine made it virtually impossible for students to move from one campus to another except at the end of the third year.

This time, the drivers of curricula reform were more diverse and complex than those that led to the changes at Mona in the 70s. They included the continued explosion of new medical knowledge with easier access to information and attention to the recommendations given in the publication "Tomorrow's Doctors" by the GMC which, it must be recognized, was still responsible for accreditation of the UWI programme. Discussions at Faculty retreats and meetings had now begun to suggest that there might be a need to redefine the UWI graduate for the 21st Century.

It was also strongly suspected that accreditation of the UWI by the General Medical Council might soon cease to be carried out as a result of Great Britain's alignment with the European Union. Medical education research stressed the need for clearer documentation of learning outcomes and development of defensible assessment practices.

Faced with influx and proliferation of 'off-shore schools in the region and increasing competition from other local tertiary level (TL) institutions for Government funding, it could no longer be 'business as usual'.

Following on recommendations of a major cross-campus curriculum retreat in 1997, the newly appointed Dean asked the Curriculum Committee at Mona to undertake a thorough review of the medical curriculum commencing with the admission criteria. In keeping with the direction taken by other institutions that had been successful in bringing about significant reform, a Deputy Dean with training in Medical Education was appointed and a special task force was established.

The first review was completed in December 1998 and published along with the recommendations for changes to the entry criteria for acceptance to the medical school. In the ensuing two years, the new entry criteria were adopted and a restructured, modern curriculum was slowly developed largely based on the recommendations of 'Tomorrow's Doctors' and evidence from on-going curricular reform in North America and Europe.

While the mission of the Medical School remained unchanged, the restructured Mona curriculum introduced in 2001 was based on recognition that changes in the programme were needed to produce a UWI graduate capable of carrying out this mission in the 21st century. The primary changes involved a shift from a discipline-based to a systems-based approach in the first two years with early clinical-preclinical integration and multidisciplinary teaching. It continued to emphasize clinical skills and community health, both recognized as particular strengths of the UWI model.

Inherent in this approach was the definition of a 'core curriculum' and a list of expected learning outcomes with less emphasis on didactic teaching and greater use of on-going assessment. The management of change is often difficult but there were important lessons learned from the 1978 reform. It is clear that the strong support of the Dean and the appointment of an individual with training in medical education to lead the process were both important factors that contributed to the success of reform. There appeared to be a general dissatisfaction of staff with the *status quo* which contributed to the acceptance of change. The formation of multidisciplinary working groups to develop the new courses over many months facilitated a definition of the core of what the modern graduates would need and created a cooperative feeling of ownership of the process.

While acceptance of the new curriculum grew slowly, changes in the administrative structure for its management were more challenging and lagged behind changes in delivery and teaching. Nevertheless, as residual pockets of resistance were overcome, the reform process has gradually created a more stable central administrative structure with a capacity to adapt to change and developed management systems that make it easier to adapt to on-going and subsequent needs for modification. This is fortunate as already there have been several events requiring significant modification to the curriculum since its introduction. These include introduction of the GPA system and increased student intake based on demand and competition.

The Mona curriculum is now administered by a Programme Director and its own Curriculum Committee and Management Team with four sub-committees, one each to oversee the two stages of the programme, and two others to develop, supervise and regulate student assessment and to develop regular mechanisms for curriculum review and evaluation. A wider Undergraduate Curriculum Committee, chaired by the Dean has representation from this and each of the other undergraduate programmes offered by the Faculty.

2008 MB BS Curriculum

Year	Semester 1 (Sep–Dec)	Semester 2 (Jan–Jun)						
1	Orientation Week* Meiosis to Man Fundamentals of Disease & Treatment Introduction to Molecular Medicine Health Care Concepts The Locomotor System Cell Biology Pt 1 Introduction to Medical Practice Unit 1a	Cell Biology Pt 2 Basic Haematology Respiratory System Neuroscience 1 (Periph. n. system) Cardiovascular System Pt. 1 Introduction to Medical Practice Unit 1b						
2	Cardiovascular System Pt. 2 Health and the Environment Digestive System Endocrine System and Skin	Renal and Reproductive Pt 1 Neuroscience 2 (CNS) Introduction to Medical Practice Unit 2						
3	Renal and Reproductive Pt 2 Clinical Haematology Human Nutrition Understanding Research Health Services Management	8–week rotating 'Junior' Clerkships						
		Medicine	Surgery	Aspects of Family Medicine				
4	**July**	**Sub-specialty Rotating Clerkships**						**May/June**
	Psychiatry	Applied Pathology ~~Microbiology~~	'Specials' (ENT, Radiology ~~Dermatology~~)	Orthopaedics/ Ophthalmology	Anaesthetics/ Ophthalmology	Community Health/ Elective	Obstet./Gynae.	Emerg. Med./ Medicine & Humanities
5	**July**	**Rotating 'Senior' Clerkships**						**May/June**
	Medicine	Surgery	Community Health	Child Health	Elective	Obstetrics & Gynaecology		

* Includes: Registration period, Dean's Welcome Reception, Matriculation Ceremony and special sessions on: Study Skills and Learning Styles, Team building, Academic Advising, Stress Management, IT Support, Appropriate behaviour and introduction of a first year acculturation programme.

Students are represented on the Curriculum Committee and on a separate Faculty Staff-Student Liaison Committee.

In 2003, the General Medical Council informed the University that it would no longer be responsible for accreditation of medical schools outside of the European Union. Forewarned of this eventuality, the University was instrumental in lobbying for establishment of a regional accreditation body and in 2004 the Caribbean Accreditation Authority for Education in Medicine and Other Health Professions (CAAM-HP) was established through CARICOM. The MB BS degree of the UWI was the first and, at time of writing, is still the only medical training programme to have been fully accredited by this organization.

The issues of standards, regular internal quality assurance reviews and accreditation by an external body are of much greater importance today than in the past. In 1948, and for almost thirty years, the UWI was the only medical school in the English-speaking Caribbean. In 1976, the first off-shore medical school opened in Grenada and today there are over fifty institutions offering medical training in the region. Applications to establish others continue to be accepted by some Caribbean governments, often without consultation with accrediting agencies.

Based primarily on the demand to provide places for non-Caribbean nationals who are generally unable to gain entry to medical schools in mainland North America, the off-shore schools have flourished. While primarily geared to prepare doctors for the North American market, establishment of the schools within the territories offer significant benefits to regional governments. Inflow of capital for construction of buildings and the economic benefits of a large expatriate population of staff and students who contribute financially to the local economy, are hard to resist. In addition, there is the added 'carrot' of scholarships offered to Caribbean nationals which are an attractive option for the top local students who would previously have applied to UWI.

Despite the emphasis and purpose of the schools and the inevitable 'for-profit' management of their administration, some do offer acceptable pre-clinical educational programmes but their establishment has not been regulated and the standards of training are extremely variable. Between 1993 and 2007, the first-time pass rate for the USMLE Step

1 examinations across these schools was reported to vary between 19.4% and 84% (6). Although the UWI does not prepare its students for this examination, in the same period 744 candidates from the UWI Mona campus chose to sit it and achieved a mean first-time pass rate of 72.6%.

The acceptance of a regional accreditation authority to set standards for educational programmes in the region and close monitoring by the Caribbean Association of Medical Councils have assumed great importance. The UWI, no longer able to take its reputation for granted, has responded by carrying out relevant curricula reform, by maintaining international standards through quality assurance reviews and by achieving accreditation from CAAM-HP. Such continued accreditation is essential, especially since the regional body was recently recognized by the UK Government as the "official accreditation authority for New and Developing Medical Schools in the British Overseas Territories in the Caribbean" (7).

In response to demand and to counteract the withdrawal of funding by Caribbean Governments, student intake has been increased and major infrastructural developments are planned to cope with the larger numbers. At Mona, clinical teaching has been expanded outside of the Kingston region to Montego Bay and in September 2008, a full five year programme was implemented at Cave Hill in Barbados.

2009–2048 (Back to the Future)

During its 60-year history, there have been several challenges to the University. In the early years, there were questions about its birth and acceptance which were largely answered by the wisdom of its founders, the dedication of its teaching staff and the quality and reputation of its graduates. The transition to full university status in 1962 marked a transition from childhood to adolescence as West Indians began to take the reins of leadership.

But there were soon to be external events that required a response. The recommendations of the international medical community for a change in medical training put pressure on regional governments that was transmitted to the University and led to the challenges of the 1978 curriculum reform.

Unfortunately, the pride of success and gradual gain in reputation came with an unfortunate sense of complacency that would soon be shattered. The same impetus that had led to the independent charter had also created independent regional governments who began to question the need to maintain the regional nature of the institution. Internally, there were changes in governance that facilitated the establishment of a separate curriculum and a new school on another campus. The proliferation of off-shore medical schools could no longer be ignored and competition from other tertiary-level institutions for scarce funding is now compounded by the global economic downturn.

The 2001 curriculum reform was only the first in a series of necessary changes but it was important not only because it facilitated full accreditation by CAAM-HP but because it established a new management structure that assists future responsiveness and adaptation of the curriculum. This was fortunate as it has already had to adjust to significant increases in student intake and to the adoption of the GPA system.

One of the primary differences between UWI and the off-shore institutions has been its research activity. This will need to be strengthened even as the institution responds to increased demand, develops new marketing strategies and maintains high educational standards. The increasing pace of new developments has been challenging but a coordinated response is vital if the UWI is to continue to attract the brightest and the best and to lead the way as the premiere provider of quality medical training in the region.

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