Training Medical Technologists in the Caribbean - a Cross-institutional Model for Collaboration in Distance Education

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INTRODUCTION

The Caribbean region is arguably the most geographically complex and culturally diverse in the world. With national literacy rates ranging from 48% to over 84% and poverty levels from 0% to about 76%, the Caribbean presents many conflicting realities.

Caribbean nations share two realities - a below average enrollment in tertiary education and a growing dependence on tourism. Tourism is now the mainstay of Caribbean economic development. Sustaining a globally competitive tourism market has become an immediate goal for the Caribbean and maintaining the appropriate public health environment is high on the list of Government priorities. Countries today run the risk of global isolation at a moment's notice if disease outbreaks or other public health issues arise. This could severely impact unemployment, poverty rates and social stability. Ensuring that medical laboratories provide reliable information has thus become critical to the regional economic drive.

The Caribbean Epidemiology Centre (CAREC) referred to hereafter as the Centre, is the premier public health centre in the Caribbean, established by Caribbean Governments to be a watchdog for maintenance of the health and wellbeing of Caribbean populations. For over 30 years, The Centre has assisted its 21 member governments to deliver laboratory services and to manage the control and prevention of public health diseases.

A 4-year project entitled "Strengthening of Medical Laboratory Services in the Caribbean, implemented by the Centre from 2002-2007 and funded by the European Union, sought to address the deficiencies detected by the Centre in medical laboratory operations in the region. Evaluations of laboratory services identified the lack of preparedness of the medical laboratory workforce to implement standards. Knowledge and skills gaps contributed to the frequent occurrence of laboratory error. Facilitating development of a well trained laboratory workforce in 23 countries was a major project focus.

This paper describes the first attempt in the Caribbean to develop a collaborative cross-institutional model for joint development and delivery of distance training for medical technologists. It describes the global and regional context in which this collaboration was initiated, briefly describing institutional environments and the process used to forge partnerships and define interventionist strategies for expanding distance training.

CONTEXT FOR COLLABORATION

- The Global Distance Education Context

Knowledge-driven economies are recognised as essential to economic power and global competitiveness today. Computers are more accessible and distance education increasingly a viable alternative to traditional education. Distance education has had its problems but has been critical to the expansion of access to education in the developing world.

- The Caribbean Distance Education Context

Regional Governments have committed to driving tertiary level enrollment figures up. Education institutions are striving to expand access in response to Government and student pressure. In Trinidad and Tobago, for example, the Government initiated free tertiary level education for all citizens. Marrett (Marrett, 2006) noted that by 2006, distance programmes were being offered by at least eight tertiary-level institutions.

The Caribbean Knowledge and Learning Network (CKLN) is a regional foundation endorsed by Caribbean Heads of Government in 2004 to enhance regional competitiveness and strengthen regional collaboration and connectivity. The Commonwealth of Learning has partnered with countries to promote joint development of materials, improved communication and collaborative research.

For medical laboratories in the Caribbean faced with the limitation of resources; limitation of access to training; increasing shortages of human resources, geographical and functional isolation; increasing client demands; pressures of globalisation, accreditation and rapidly improving technology - the expansion of education for staff through distance has become urgent.

- Historical View of Caribbean Collaboration

Examples of successful Caribbean collaboration exist in every sphere of Caribbean life as illustrated below. This tradition was instructive to defining the process to be used:

- Governance: Establishment of the Caribbean Community (CARICOM) in 1973, a collaboration of 15 member states and 5 Associates to develop regional policies on health, finance, education and trade
- Economic Development: The Caribbean Community Single Market and Economy (CSME), a collaboration aimed at allowing the free movement of goods, services and labour within the region

- Education: The University of the West Indies (UWI), a regional institution, established in 1948 by 15 countries
- Health: The Pan Caribbean Partnership against HIV/AIDS (PANCAP), established in 2001 by Governments to advocate and mobilise resources
- Sport & Arts: The West Indies multinational cricket team established in 1890, representing 12 countries and the Caribbean Festival of Arts promoting all forms of Caribbean culture

- Training Institution Collaboration

The Caribbean Universities Project for Integrated Distance Education (CUPIDE), brought together 5 regional institutions from 2003-2007, to build institutional capacity for distance education, better use information and communication technology, improve competitiveness and strengthen inter-institutional links. This Project stopped short of addressing the joint delivery of courses. In her doctoral dissertation, Marrett (Marrett, 2006) concluded that while collaborative distance education initiatives with international institutions significantly increased in this decade, collaboration among local institutions was limited. Thus local institutional capacity to develop and deliver distance programmes was not substantially improved.

- Institutional Profiles and Distance Education Initiatives

Structures; systems; agendas; values, beliefs and experiences are among factors that drive the culture and operations of an institution and influence its readiness to participate in collaborative initiatives. Political imperatives also influence institutional priorities, especially if Government financing is significant. A brief overview, shared by staff or obtained from published material, provides some insights into the five participating institutions - the Barbados Community College (BCC); the University of Belize (UB); the College of Science and Applied Arts of Trinidad and Tobago (COSTAATT); the University of Technology (UTECH), Jamaica; The University of the West Indies (UWI) (Table 1). A general trend towards merging of institutions to increase size, scope and market advantage is evident. Government funding, policies and mandates significantly impact the operations of all of these institutions. Collaborative experiences and distance preparedness vary considerably across institutions.

Table 1

Characteristic	BCC	COSTAATT	UB	UTECH	UWI
Established	1968	2000	2000	1995	1948
General	Impending Merger of 3 institutions	Merger of 6 institutions	Merger of 5 institutions	precursor Institution 1958-1995	3-Regional campuses
Enrollment (approx.)	4000	5000	4000	7000	32000
Governance	Unicamaral	Unicamaral	Unicamaral	Bicamaral	Bicamaral
Type	Public National	Public National	Public National	Public National	Public Regional
Public Funding	Partial	Partial	Partial	Partial	Partial
Key Influences	Govt policy & mandates	Govt policy & mandates	Govt policy & mandates	Govt policy & mandates	Govt policy
Accreditation	No	registration for accreditation in 2008	under discussion	many programmes accredited	under discussion
Guiding principles	Dynamic;	Dynamic;	Self-sustaining;	Creativity;	Relevance

Characteristic	BCC	COSTAATT	UB	UTECH	UWI
	Responsive	innovative; student-centered	Leadership; Teamwork; Participatory management	Innovation; Research; Service; Business development	Flexibility; Research; Regional networking
Type of graduate	Spiritual, intellectual & social skills; contributing to national development	Lifelong learners; Globally competitive; Employable	Entrepreneurial patriotic; Socially conscious	Prepared for job market	Lifelong learner; Critical thinker
Collaboration	Limited	Limited	Extensive	Extensive	Extensive
Distance education preparedness	Limited courses	No courses	e-learning infrastructure; many courses; aggressive expansion	Distance and open learning unit; Institutional priority	Distance Education Centre; (4th) Open campus to be created
Medical technology	Associate degree	Associate degree	Associate Degree	Bachelor's Degree	No training offered

THE PROCESS

The Strengthening of Medical Laboratory Services Project - A Case Study

The Centre's Laboratory Manager and Advisor for the HIV/AIDS programme developed this project based on data collected through on-site evaluations and training interventions. At the start of the Project in 2003, laboratories in 23 Project countries conducted a self-evaluation. This revealed significant gaps in knowledge, skills and practices. The need to strengthen training became evident.

Working with training institutions to better prepare laboratory staff for the workplace was important. However, previous to the project, the Centre had little formal interaction with institutions and thus initially had a limited concept of the resource implications and level of difficulty to be expected. Experience dictated however, that a stepwise, incremental, collaborative approach to identifying issues, developing feasible interventions and building trust would be critical to achieving desired outcomes.

The Project's initial objectives were threefold: 1) to identify a feasible approach to expanding distance training for regional technologists 2) to recommend strategies for strengthening distance education infrastructure, programme and/or course structure and delivery 3) to foster collaboration and collegiality among training institutions

As a first step the Training Manager sensitised senior administrative and academic personnel in participating institutions to this initiative, through telephone, e-mail, written communication and and/or brief visits.

Following this, a Distance Education Advisory Committee, comprising a wide spectrum of stakeholders from relevant institutions/organisations in the public and private sectors, representing a wealth of relevant expertise, shared best practices and brainstormed solutions in a meeting convened in March 2005. Considerable efforts were made to identify and invite appropriate professional representation through direct contact with institutional heads and clear

explanations about the objective of the initiative. All participants attended with full support from institutional Heads. The Project bore all costs.

The Committee was tasked with identifying key issues, challenges and feasible approaches to the delivery of distance education for technologists and also explored the need for distance training partnerships.

Significant meeting outcomes included a listing of key issues for consideration and a collective enthusiasm for the initiative. Stakeholders agreed that a critical first step would be the immediate conduct of a regional needs and situation analysis to identify the opportunities and gaps, existing resource and other needs related to the delivery of and access to distance and continuing education. Project staff provided objective facilitation and mediation and ensured continued focus on the objectives.

A team comprising a consultant, Dr Lya Visser, and two Project staff, conducted a rapid 10-day fact-finding mission to 7 Caribbean countries in June/July 2005 to assess available resources, needs, barriers and existing attitudes and opinions about distance education. This information was critical to assessing the preparedness, training capacity, connectivity and available training opportunities in the region. Study targets included Ministry of Health decision-makers, education institutions, laboratory managers and staff, medical organisations, internet service providers and electronic support service providers. Attempts to gather reliable information at a distance from 16 countries proved logistically challenging. Country liaisons were hired at minimum cost to manage in-country logistics. This worked relatively well in spite of a few reports of difficulty with completion of questionnaires - 927 questionnaires were returned.

Analysis of this data identified key gaps in access, structures and systems, highlighted technologists' training needs and barriers to training and provided other information to guide the continuation of the process (CAREC report, 2006). Data indicated that no mechanism for the joint cross-institutional development and delivery of distance education training existed.

Senior representatives of the five participating institutions formed the hub of continued Advisory Committee activity.

Three additional meetings were held in January, April and July 2006. The process was lengthy. Allowing for varying perspectives to be discussed and compromises negotiated takes time. There were significant differences and similarities in views on curriculum structure, pedagogical orientations and institutional values. However, though the drivers of change differed - Government pressure in several instances and protection of market share and status in another - there was consensus that collaboration was unavoidable. Skepticism about successful collaboration among local institutions, given the history of failure, was always an underlying thread in discussions. No participant, however, sought to abandon or subvert the discussions, group dynamics were positive and full participation from the five institutions continued to the end.

An environment of trust among institutional partners was developing. There was a willingness to frankly agree or disagree with positions taken, to share information on institutional strengths and weaknesses and to support the search for common positions. The Project's objective facilitation may have helped to assure participants that all interests would be served. It should be noted here that at least one professional 'Champion' identified early in the process in each institution, navigated the process through the minefield of institutional politics - faculty resistance, institutional cynicism, schizophrenic support/non-support behaviours - even as they struggled to understand their own institutional cultures and those of others, manage their own doubts and concerns, shift beliefs and recognise benefits.

Committee recommendations included agreement that 1) a memorandum of understanding be established as a framework for collaboration in the shortest possible time 2) a Steering Committee comprising representatives of the 8 major training institutions currently providing

medical technology education and other relevant regional organisations, be appointed 3) a sub-committee structure be established with immediate operationalising of the instructional design and delivery committee. It became clear that, given the complexity, length of the process, project time constraints and resource limitations, expected outcomes would have to be revised. Thus the development of a proposed model for inter-institutional collaboration (Figure 1); the establishment of a cross-institutional network; initiating joint cross-institutional course development and documenting recommendations and a stepwise implementation plan, became the objectives for a final meeting held in November 2007.

The Committee agreed that a success strategy would be to use piloting of 3 courses for technologists to drive 1) structuring a collaborative mechanism for the joint development and delivery of programmes 2) ensuring integration of culture into course delivery 3) establishing an in-country mentoring and tutoring student support system and 4) developing change and opinion-leaders in countries. A cross-institutional sub-committee was selected, a production plan developed, institutional resources identified and the outline for 3 medical technology courses - basic microbiology; communication and people management - collaboratively developed using electronic media (e-mail).

Project resources were exhausted and negotiations with potential funders resulted in support for two additional meetings prior to the Project end (December 2007). Heads of the four training institutions were invited to a stakeholders meeting in September 2006 to advocate for institutional support at the highest level and continuity beyond the Project's life. The Provosts and/or Principals of 3 institutions attended with senior representation from the other 2 institutions. They verbally committed to fully continuing the process.
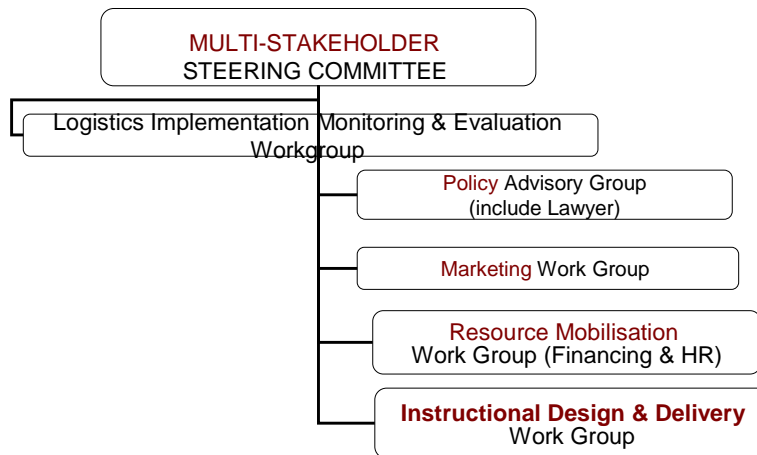
At the final Advisory meeting in November 2007, representatives endorsed an incremental 4-step approach to implementation of the proposed pilot - 1) Phase 1 - administrative arrangements required for course delivery, establishment of a Steering Committee with clear terms of reference, nomination of a neutral Chair, drafting of inter-institutional agreements, appointment of institutional focal points, costing of the pilot, establishment of sub-committees, development of a resource mobilisation plan, refining of course outlines 2) Phase 2 - consolidation of mechanisms for joint course delivery and review of infrastructures, available resources, agreements, contracts, student needs and a monitoring and evaluation plan 3) Phase 3 - negotiations on credentialing and credit banking 4) Implementation. Debate on appointment of a Steering Committee Chair was instructive. Participants view was that the Chair should be held by an objective institution in the start-up, to avoid the potentially damaging impact of inter-institutional jealousies

Practicing laboratory personnel, allied health professionals and interested persons were agreed targets. Pilot countries were selected.

The revised objectives - a model (Fig 1); a cross-institutional network; 3 course outlines; recommendations and an implementation plan - were achieved. The expectation is that continued implementation will be coordinated through a recently established Caribbean Med Lab Foundation.

Figure 1

Proposed Collaborative Programme Management Structure

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┌─────────────────────────────────┐
│      MULTI-STAKEHOLDER          │
│      STEERING COMMITTEE         │
└─────────────────────────────────┘
┌──────────────────────────────────────┐
│ Logistics Implementation Monitoring & Evaluation │
│              Workgroup                 │
└──────────────────────────────────────┘
        ┌──────────────────────────────┐
        │    Policy Advisory Group      │
        │      (include Lawyer)         │
        └──────────────────────────────┘
        ┌──────────────────────────────┐
        │    Marketing Work Group       │
        └──────────────────────────────┘
        ┌──────────────────────────────┐
        │   Resource Mobilisation       │
        │  Work Group (Financing & HR)  │
        └──────────────────────────────┘
        ┌──────────────────────────────┐
        │ Instructional Design & Delivery │
        │        Work Group             │
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Key Reflections, Remarks, Observations, Lessons Learned

Issues arising during this collaboration effort should be noted and used to guide the continuing process. Some key issues follow:

- The Project's hands-off approach - remaining in the main non-committal about selected strategies and allowing participants to negotiate agreements - facilitated continued institutional participation and collegiality. This was absolutely the stakeholders' process.
- Timing is important. Existing political and economic pressures helped to drive interest
- Appropriate institutional representation and periodic contact with 'Heads' were important to continued institutional interest, buy-in and momentum as was the identification of institutional 'Champions' to promote the collaboration message
- Bringing institutions face-to-face initially, in a common space external to their institutions, helps to forge harmonious, collaborative relationships and agreements.
- Provision of funding to initiate this process was key to initiating discussion and generating enthusiasm.
- Using facilitators whom institutions trust to be objective and fair, supports frank, respectful discussions, building of trust and the development of realistic agreements.
- Estimating timelines and costs for an exercise like this is difficult and dependent on many variables
- While some participants may become impatient, allowing the process to move at the pace of the most resistant, within reason, is useful to eventual buy-in of all institutions
- Professionals make the time to be involved if they are interested and committed to a process
- Geographic challenges are not insurmountable and inter-institutional communication and tasks can be effectively managed electronically

Possible Barriers and Pitfalls to Collaboration

- In the Caribbean there is an institutional pecking order that could stimulate jealousies and must be sensitively facilitated
- Territoriality pertaining to curriculum and pedagogical beliefs - the "I'm Ok you're not" factor
- Accreditation drivers - the "My quality is better than yours" factor
- Traditional positions of mistrust
- Competing institutional priorities and lobbies for resources
- Incompatible governance structures and systems
- Resistance to change - curricula, teaching methods, course structures
- Avoidance of individual responsibility and failure to deliver on commitments

Discussion

There are strong indicators that the Caribbean region is committed to expanding access to education through distance. Relevant projects have been endorsed by Heads of Government and tertiary level institutions have created new campuses or units for expanding distance education. Regional publics are demanding greater access as competition for jobs increases. Many examples of distance education collaboration with international institutions exist.

Issues of student and teacher preparedness, cost of new programmes, small student populations and inferior technology are institutional realities All institutions agree that collaboration is key to overcoming these challenges. Accommodation of differing structures and cultures continue to challenge the drive towards collaboration. CUPIDE and this Project have set the stage for a multi-institutional effort. Implementation of a structure to jointly develop and deliver programmes is timely. A workable model for managing such an enterprise has been developed by this Project. The strategy of creating a collaboration structure from the bottom up, that is, the piloting of courses, could accelerate what could be a very lengthy process.

The facilitator sensed some hesitation by institutional representatives to take personal responsibility for continued implementation and there was a call for the Project or CAREC to continue to support during a transition period. This may be due to an existing lack of trust in their institutions' willingness to deliver on their commitments if not coerced by external forces.

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