

The Hospital and Health Care Facility Management Education Partnership

Mozambique, 2014-2018

An Innovative Academic Twinning Project to Transform Education for the Next Generation of Leaders in Hospital and Health Care Management



Summary

- Modernizing the education of hospital, clinic, and health service managers and administrators was a top priority for the Mozambican Ministry of Health (*Ministério de Saúde*, MISAU).
- The United States Agency for International Development (USAID) supported an academic twinning partnership between the *Instituto Superior de Ciências de Saúde* (ISCISA) in Mozambique and Columbia University Mailman School of Public Health.
- Specialists from the Columbia Mailman School Health Policy and Management Program and ICAP brought the latest expertise in health management and administration to Mozambique and strengthened faculty and organizational capacity within ISCISA.
- The Columbia Mailman / ICAP / ISCISA team developed and implemented a new, four-year undergraduate Hospital Administration degree curriculum with state-of-the-art content, teaching methods, course materials, and practica.
- The project will have significant and lasting impact on the functioning of Mozambique's health system and will set the standard for curricula in other training areas (e.g., nursing and physician-leader education).





"ICAP and Columbia Mailman helped us design a strong curriculum that has provided our teaching staff at ISCISA with excellent training, as well as teaching materials and tools that cultivate students with exceptional health administration skills and hands-on experience. The new curriculum encourages our students to apply change management techniques and quality improvement strategies to serve as resourceful agents for change within Mozambique's national health service."

Dr. Alexandre Manguela,
ISCISA Director



The Management Education Partnership

The USAID-supported Management Education Partnership was a unique initiative designed to address Mozambique's critical shortage of health care management and administration skills. Under a four-year project led by ICAP at Columbia University, the Columbia Mailman School and ISCISA developed a new, competency-based health management and administration degree program grounded in the needs of the National Health Service.

Historically, almost all health care management roles in Mozambique have been held by doctors, most of whom have little or no management training. This has exacerbated the country's dire shortage of doctors (7.7 per 100,000 population) by taking them away from clinical practice. As the health service expanded and decentralized, its need for appropriately trained managers became even more urgent. MISAU identified updating management education as a strategic priority with the potential to transform the functioning of the health system.

Future health sector managers and administrators for the whole country are educated at ISCISA. However, its previous Hospital Administration degree curriculum (established in 2005) did not produce graduates with the competencies required by MISAU, and ISCISA did not have the capacity to create a new curriculum.

The solution: a first-of-its-kind academic twinning program between ISCISA and Columbia Mailman. Columbia Mailman offers one of the world's foremost Health Policy and Management programs while ICAP is transforming pre-service, health-related education in developing countries and has a long-term presence in Mozambique. Together, Mailman School and ICAP faculty and staff have extensive experience in academic collaboration and institutional capacity building.

ISCISA, ICAP, and Columbia Mailman all took part in a detailed, inclusive, and intensive process to redesign the four-year hospital administration curriculum. The partnership approach ensured that the new curriculum was owned by ISCISA's leadership and faculty, and that ISCISA would be able to sustain and continuously update the program moving forward.

A World Class, Competency-Based Curriculum

The twinning partnership was created to establish a state-of-the-art health management and administration curriculum at ISCISA and build sustainable capacity within ISCISA to deliver the program and update it pedagogically, technologically, and academically. The project focused on incremental progress toward this goal using two core strategies: transfer of knowledge, skills, and technologies to ISCISA; and organizational learning and development by ISCISA. Shared leadership, joint decision-making, and direct working relationships between Columbia Mailman / ICAP and ISCISA personnel were key to the twinning partnership's success.

Beginning in 2014, the project team developed an entirely new curriculum for ISCISA's four-year undergraduate degree in hospital administration, as summarized in Figure 1. It is designed to equip graduates with the competencies needed in the national health system, and integrates the latest content and teaching methods from the globally renowned Health Policy and Management program at Columbia Mailman.

ICAP and Columbia Mailman specialists led the curriculum development process, in collaboration with a technical working group comprising the course director, other ISCISA faculty, and MISAU staff. The team engaged stakeholders from the Ministry of Science Technology and Higher Education, and the MISAU Directorates of Human Resources and Medical Assistance to ensure consensus.

Key steps in the curriculum development processes included:

- **Assessment** to identify gaps in the competencies of hospital administrators and deficits in the composition, content, recommended bibliography, and structure of the existing ISCISA curriculum.
- **Definition of competencies** and a scope of practice for hospital administrators, reviewed by experienced practitioners and technical experts as well as ISCISA's Governing Council.
- **A curriculum design workshop** at Columbia Mailman to define courses and practica, and prepare a model course syllabus and practicum description. During their visit to Columbia University, ISCISA participants gained a detailed understanding of organization, structure, and teaching strategies within the Columbia Mailman Health Policy and Management program.
- **Development of the curriculum**, including 38 draft course syllabi and eight draft practicum descriptions, for review by the technical working group and other experts.
- **Implementation**, which began in February 2015. ICAP and Columbia Mailman staff provided intensive, hands-on support until graduation of the first cohort of students in late 2018.
- **Final approval** in 2016 by ISCISA's board of directors and the Ministry of Science Technology and Higher Education. Minor updates were made to the curriculum in 2018.

By the Numbers

83
faculty
trained
to teach
the new
curriculum

84%
pass rate
(in line with
international
standards)

29
students
graduated
in 2018

161
students
across
five cohorts
enrolled
by 2018





Figure 1
ISCISA's New Hospital Administration Curriculum



Capacity for Consistent, High-Quality Teaching

In addition to creating the new curriculum, Columbia Mailman and ICAP developed the technical expertise of ISCISA faculty and their competency to deliver new teaching materials and methodologies. The capacity-building strategy was designed to overcome the ongoing constraints of high turnover and reliance on part-time faculty. As a result of incremental transfer of responsibility throughout the course of the project, ISCISA was poised to independently manage the program by 2019.

By the Numbers

475
lesson
plans
created

108
classroom
observations
conducted

697
class
handouts
produced

86
assignments
developed



Key innovations included:

Standardized course materials to ensure that faculty adhere to the new curriculum. For each course, faculty received a package of standardized teaching materials, including lesson plans, handouts, assignments, and bibliographic materials.

Regular training to increase skills and confidence with course materials. Columbia Mailman instituted a new practice of providing 14–22 hours of orientation and training on upcoming courses at the beginning of every semester. The training was required for all faculty members teaching a course for the first time and was available to others as an optional, refresher training. As part of the project’s sustainability strategy, ISCISA staff were also trained to deliver these sessions directly.

Mentorship and monitoring to assure quality. Columbia Mailman introduced classroom observations of every ISCISA faculty member at least once per semester. Conducted using an objective assessment tool adapted from Columbia Mailman, observations covered class organization and content, teaching methods and materials, and student-teacher interaction, and enabled the provision of both supportive feedback and recommendations for improvement. Project director, Professor Paul W. Thurman of the Health Policy and Management Department at Columbia Mailman, held remote mentoring sessions with ISCISA faculty every semester and guest lectured during semi-annual technical assistance visits to Mozambique. He also provided additional distance support to faculty teaching higher-level management courses.

A user-friendly, online learning management system for the Hospital Administration degree program to reinforce quality and consistency. The system—which is hosted and managed by ISCICA and accessed via their website (<http://lms.iscisa.ac.mz/>)—is seen by ISCISA’s leadership as a model that can be replicated for other courses. It allows faculty and students to access course outlines, lesson plans, class handouts, assignments, and reading materials online, with different levels of access (e.g., permissions to edit, hide, view, and download content). By 2018, usage by students was 92 percent and faculty usage had reached 69 percent (with the time lag among faculty due to the order of curriculum modules).

Campus to Clinic: Regular, Focused Practicum Placements

One of the project's most significant and successful innovations was the introduction of four-week practica at the end of semesters one through seven (see Figure 2). These short, focused placements reinforce classroom teaching with practical application, ensuring that students understand real-world hospital administration by the time they graduate. Their clear structure and well-defined objectives represented a paradigm shift from previous practica.

Practica take place at ten sites in Maputo, which include six hospitals, the Health Directorates, and pharmaceutical and medical supply warehouses for Maputo City and Maputo Province. Students rotate weekly through different departments, sectors, and services, where they observe and participate in administrative activities. They keep daily activity journals and are evaluated weekly by preceptors. At the end of each practicum, students prepare a report in which they describe their activities and present detailed analyses of specific problems.

ICAP, Columbia Mailman, and ISCISA staff provided intensive, hands-on support to all practicum sites.

By the Numbers

83 preceptors and practicum supervisors oriented and supported

160 supervisory visits conducted during four-week practica

118 supervisory visits conducted during final 18-week practica

Figure 2

Structured Practicum Placements, Semesters One Through Seven

1	<ul style="list-style-type: none"> • Rotation: main administrative, clinical, and support sectors of the hospital • Collection of data on teams, activities, roles, equipment, materials, and each sector's specific administrative and material support needs
2	<ul style="list-style-type: none"> • Rotation: laundry service, inpatient ward, outpatient services, and archives • Visits to operating rooms, the waste management service, incinerators, and sterilization services (i.e., areas with specific infection control needs or functions).
3	<ul style="list-style-type: none"> • Rotation: accounting, catering, clinical records, and human resource departments • Proposal of a detailed solution to one specific problem identified
4	<ul style="list-style-type: none"> • Rotation: human resource department, planning and statistics department, procurement unit, and warehouse and supply chain management service (non-pharmaceutical supplies)
5	<ul style="list-style-type: none"> • Orientation on annual planning and budgeting processes • Group work estimating annual needs for equipment, consumables, and human resources within specific departments, sectors, and services at Maputo Central Hospital • Students' estimates are taken into consideration for planning and budgeting
6	<ul style="list-style-type: none"> • Rotation: pharmaceutical and medical supply warehouses for Maputo City or Maputo Province and hospital drug and medical supply depots • Participation in planning and logistical support for public health campaigns conducted by the Maputo City or Maputo Province Health Directorates
7	<ul style="list-style-type: none"> • Inventory of one department, sector, or service • Study of the hospital layout and recommendation of design changes • Preparation of a transport report for the hospital's vehicle fleet from source documents • Assessment of administrative flows and documentation associated with mortality • Familiarization with maintenance services and processes for their requisitioning and reporting

What was the most valuable part of your experience completing the health management and administration program?

I really enjoyed the program. We had excellent support from ICAP staff and our professors, including both theoretical and practical learning experiences, which is what I really needed to enhance my skills and success as a pharmacy technician. In particular, my practicum at the emergency ward pharmacy at Maputo Central Hospital made me feel like a true professional! I gained a better understanding of completing and tracking requisition forms for pharmacy supplies and materials, and I had the opportunity to adapt existing tracking tools for improved management performance. Our primary practicum assignment allowed me to identify a problem, collect real-time, tangible data, and adopt solutions that were aligned with the quality improvement tool that we learned and discussed in class.

When I started the program, some of my colleagues thought that I was moving away from a pharmacy career track, but I believe that the skills I've obtained here have helped my work immensely. If I could repeat it, I would!



18-Week 'Final Professionalizing Practicum'

During the last semester of their degree, students undertake final professionalizing practica. They implement 18-week projects that involve analyzing a hospital system, assessing problems, and systematically implementing quality improvement. The final practicum is designed to be challenging as students apply their learning at sites that include Mozambique's largest and busiest tertiary and quaternary hospitals.

The strategic focus on quality improvement ensures that graduates are well-prepared in this critical aspect of health services. Before the practicum begins, students receive training and a quality improvement toolkit to enable them to identify and analyze problems, develop and prioritize

solutions, and measure improvement. This training was adapted from a course developed by ICAP / Columbia Mailman for house officers in Sierra Leone.

The first cohort of 29 students completed their final practicum in December 2018. During the experience, they designed and implemented key administrative improvements, such as: follow-up appointment cards to facilitate retrieval of patient records; protocols to reduce cross-contamination between clean and dirty laundry; and improved pharmaceutical requisition between outpatient dispensaries, wards, and the main drug warehouse. At the end of the final practicum, students presented both oral and written reports.

Reflections from Health Management and Administration Graduate and Student Leader, Marcelina Tambaco



What was your greatest challenge?

I was proud to serve as the student leader of my cohort, where I communicated questions, concerns, and provided updates between course instructors, ICAP staff, and my colleagues. As an intermediary between the groups, I learned that I wasn't always going to be able to please everyone, but I had the opportunity to build important professional and interpersonal skills and help make decisions that were in the best interest of myself and my fellow classmates. I am so proud to have served in that leadership role and practice my skills in diplomacy.

Post-graduation update: After graduating from ISCISA's first health management and administration cohort in July 2019, Marcelina was given a new opportunity with supervisory responsibilities at the pediatric pharmacy at Maputo Central Hospital. She believes that her supervisor selected her for this opportunity based on her practicum performance and the professional growth she exhibited, as well as her completion of the health management and administration program.

Lessons Learned

The four-year twinning partnership between ISCISA and Columbia Mailman / ICAP generated valuable learning for future collaborations that aim to improve health education.

- **The core competencies** required by the national health system were the foundation for content selection and curriculum design. It was important to identify gaps and weaknesses that hospital administrators could help resolve and administrative responsibilities that they should assume from other cadres.
- **The stakeholders** who define competencies should be different than those who develop the curriculum. Whereas technical experts, educators, and instructional designers are best poised to develop the curriculum, competencies should be defined by potential employers and professionals active in their field.
- **Transferability** of curriculum and course content is limited by the different roles played by hospital managers and administrators in low- and high-income countries. For example, hospital administrators in Mozambique manage functions such as catering or waste management that would be outsourced in the United States, so pre-service education must equip them with these competencies.
- **Intensive faculty development** was critical to implementing the new curriculum, as recruiting new faculty was not possible due to skills shortages. Hands-on support—including training workshops at the beginning of each semester, classroom observations early in the semester, and provision of standardized course materials—ensured the quality and consistency of teaching.
- **Keeping the twinning “current”** by having twinning partners meet frequently—either face-to-face or virtually—helps keep lines of communication open, information flows current, and best practices up to date. Semi-annual faculty visits, training sessions, and classroom observations helped improve curricula, ensure high-quality practica, and provide much-needed collaboration among faculty and administrators of both schools.
- **ISCISA’s long-term capacity** to teach the curriculum is key to the lasting impact of the project. Developing standardized training packages for faculty, co-facilitating training, and gradually handing training responsibilities over to ISCISA staff were effective approaches to ensuring sustainable teaching capacity.
- **Continuously reviewing** course content and practica in the context of the national health system is vital to identifying gaps and ensuring that graduates are well-prepared for the workforce. Practicum supervisory visits were the most effective strategy for gathering this type of information, with practicum reports and review meetings, faculty review workshops, and classroom observations providing additional insights.

“This was the first time that USAID has invested in the twinning concept here in Mozambique and we are very pleased with the results. Building exceptional teaching programs through a high-quality and collaborative approach such as this one is just as crucial as contracting strong educators who can convey and reinforce key competencies to future managers. In the future, we hope to replicate this approach across other key disciplines.”

Elias Cuambe, Health Sector Specialist at USAID Mozambique

This project was made possible by the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR) through the United States Agency for International Development (USAID) under the terms of Cooperative Agreement Numbers AID-656-A-14-00002 and AID-656-A-17-00006. The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the U.S. Government.

For more information, contact
icap-communications@cumc.columbia.edu