The need for transformation of medical education

Shah Ebrahim
London School of Hygiene & Tropical Medicine
&
University of Bristol

Overview

- A brief history of medical education
- Doctors are not the only solution
- Models of education
- The Cuban contribution
- Future trends

A time line for medical education

500 BC: Ayurveda; Hippocrates

5 BC: School of Medicine established in Italy

The apprentice model – “find a good teacher”

150 AD: Galen, anatomy, dissection

900 AD: Salerno School of Medicine established

Tradition of Greek, Roman, Arabic and Jewish medicine, library. Theory and practical skills. Women also accepted.

1300 AD: Mogul Dynasty, China – examination, Licenses to practice

1500 AD: Padua, Bologne, Pisa; Royal College of Physicans of London

Scuola Medica Salernitana, Salerno, Italy, 9th century

Illness caused by God, by evil spirits, by witches... and exploited by charlatanes

- Blood letting
- Leaches
- Exorcising evil spirits
- Spells and potions
- Trephining the skull
- Magentic rollers

Hieronymus Bosch. La operación de piedra. 1475-1480.
Óleo sobre tabla. Museo del Prado, Madrid, España

Forces that shaped medical education: 1500 - 1950

- Understanding of human biology

Anatomy
Physiology
Biochemistry

- Understanding of the causes of disease

Germ theory
Communicable diseases
Non-comunicable diseases

- Effective treatments

Analgesics
Antibiotics

20th Century: Disatisfaction with medical education

““Each day students were subjected to interminable lectures and recitations. After a long morning of dissection or a series of quiz sections, they might sit wearily in the afternoon through three or four or even five lectures delivered in methodical fashion by part-time teachers. Evenings were given over to reading and preparation for recitations. If fortunate enough to gain entrance to a hospital, they observed more than participated.”

Flexner, 1910

Is the ward round the best place to train medical students?

Flexner Report 1910: reform of medical education the USA

Problems

- Too many medical schools
- Production of too many doctors
- Badly trained and unable to deal with common medical problems
- Profit for the medical school
- Not for the community

Flexner Report:

Recomendations

- Reduce the number of medical schools (from 155 to 31) and poorly trained physicians;
- Increase the prerequisites to enter medical training;
- Train physicians to practice in a scientific manner and engage medical faculty in research;
- Give medical schools control of clinical instruction in hospitals
- Strengthen state regulation of medical licensure

Goodenough Report, 1944

- Overhaul of under-graduate training: social medicine, promotion of health, prevention and cure, children's health and mental health
- Co-educaton in all medical schools (sexual equality),
- Increased grants for education and research, and for students
- Reform of the examination system.
- Compulsory hospital appointments after qualification
- Changes in medical schools and teaching hospitals;
- A comprehensive system for training specialists
- London world centre for postgraduate education & research
- Linking all major hospitals with teaching centres.

Todd Report, 1968

- Increase in the number of doctors
- New medical schools
- Curriculum changes: BSc degree;
- Changes in health care: health centres and primary care
- General professional training after qualification

A result of the Todd report: a new medical school in Nottingham

The first intake: 1970

Guess who?

Similar ideas in India, 1968

“Call it by whatever name the need is for a new breed of physician, who have a broad understanding of human biology, who is imbued with the ingredients of rural and periurban societies and their way of life, who can communicate effectively… tackle prevention… be an effective leader… use knowledge to stimulate community development. We need a social biologist. Mass public health and hospital patient care… cannot fill this gap.”

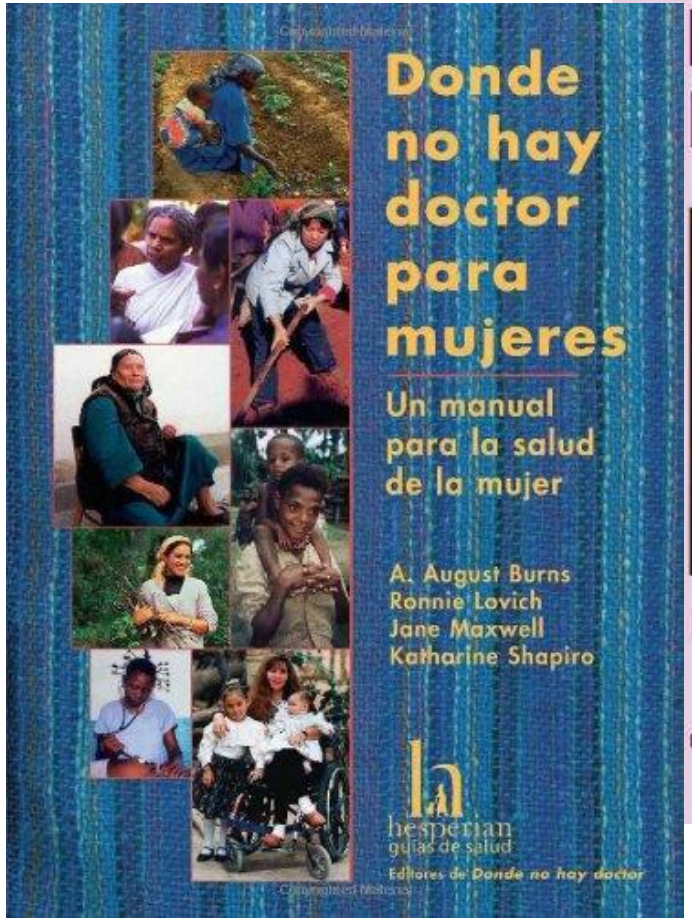
Ramalingaswami

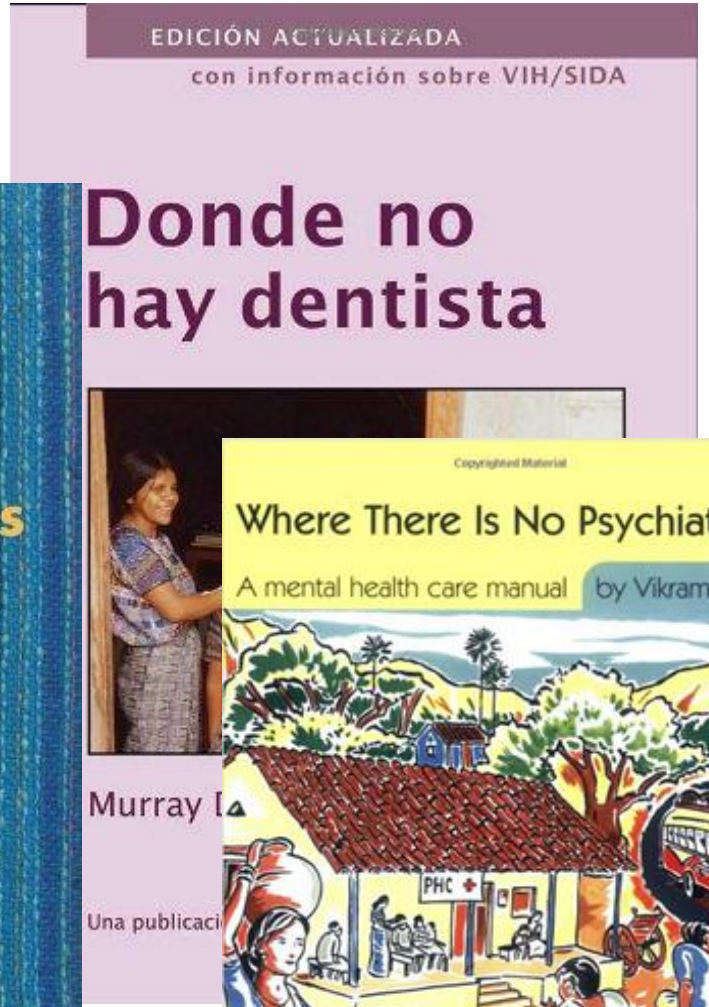
Forces that have shaped medical education since 1970

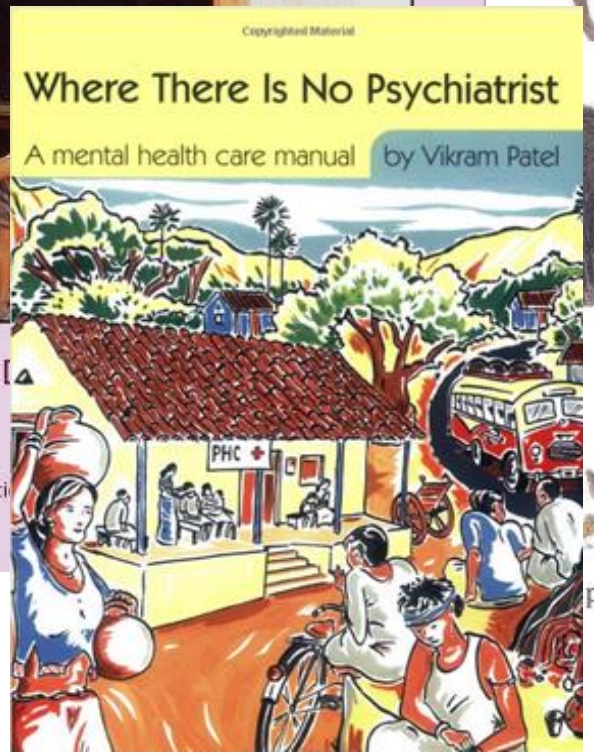
- The lack of doctors in rural areas
- The increase in biological science knowledge
- Increase in discovery of effective treatments
- The rise of new specialities
- The changes in the health care system
    - increase in primary care
    - centralization of secondary/teriatry care

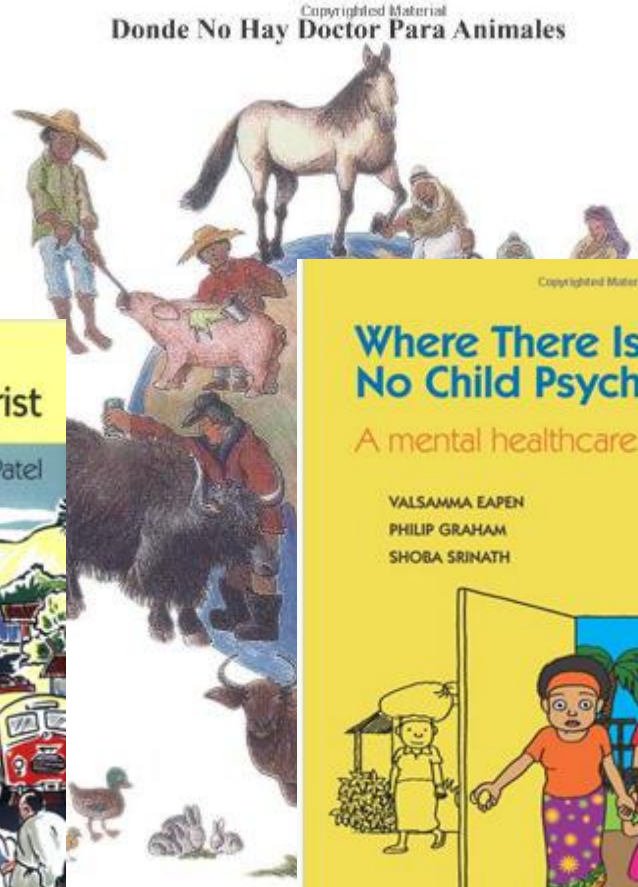
More radical ideas
- doctors are not the only solution

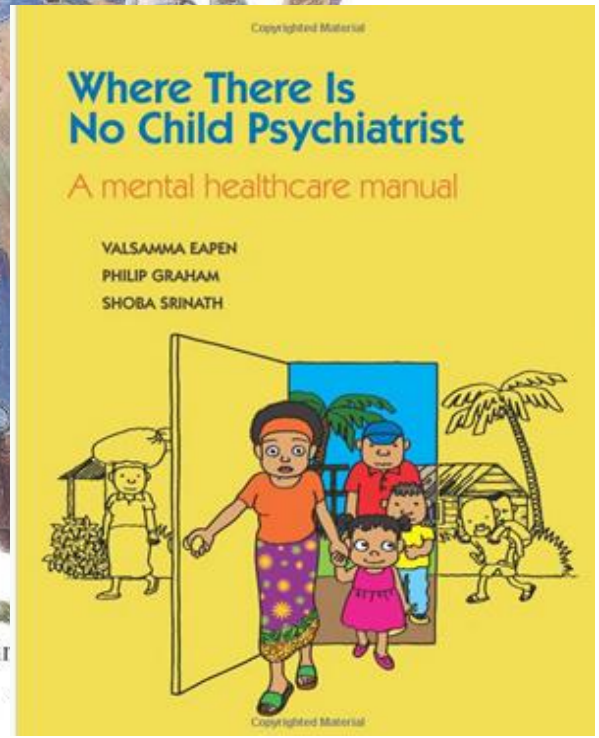
But… is there space for yet more specialists….?











An experiment in medical education

University of Chulalongkorn, Bangkok, Thailand

- Three tracks of study
- Traditional
- Community Orientated
- Problem based learning (PBM)

Suwanwela C. Strategy for change in an established medical school: A case study of the Faculty of Medicine at Chulalongkorn University, Thailand Teaching and Learning in Medicine. 1991;3 (4): 210-4 http://www.tandfonline.com/doi/abs/10.1080/1040133910953951 5?journalCode=htlm20)

An experiment in medical education

University of Chulalongkorn, Bangkok, Thailand

- Three tracks of study
- Traditional: the best students; higher social class
- Comunity orientated: poorer school exam results, rural dwellers
- Problem based learing: Bachelor degree graduates, mixed social backgrounds

An experiment in medical education

University of Chulalongkorn, Bangkok, Thailand

- At the end of 5 years, all students took the same final examination.
- Students from all the three tracks got similar exam results

The Cuban model: 0bjectives

1) scale up physician training to meet the needs of the whole population;
2) recruit and train scientifically prepared and socially committed students; and
3) match competencies, knowledge base, and scope of responsibilities to the concrete health needs of people in Cuba and other countries where these future physicians may serve.

Ileana del Rosario Morales Suárez, José A. Fernández Sacasas, Francisco Durán García. Cuban Medical Education: Aiming for the Six-Star Doctor. MEDICC, Fall 2008; Vol 10; 1-9

The six star Cuban doctor

- Care giver
- Decision maker
- Communicator
- Manager
- Community leader

PLUS

- **Teacher** – to fill the health profesional gap

Ileana del Rosario Morales Suárez, José A. Fernández Sacasas, Francisco Durán García. Cuban Medical Education: Aiming for the Six-Star Doctor. MEDICC, Fall 2008; Vol 10; 1-9

THE LANCET

EDUCATION OF HEALTH PROFESSIONALS FOR THE 21ST CENTURY: A GLOBAL INDEPENDENT COMMISSION

Health professionals for a new century: transforming education to strengthen health systems in an interdependent world

Julio Frenk, Lincoln Chen*, Zulfiqar A Bhutta, Jordan Cohen, Nigel Crisp, Timothy Evans, Harvey Fineberg, Patricia Garcia, Yang Ke, Patrick Kelley, Barry Kistnasamy, Afaf Meleis, David Naylor, Ariel Pablos-Mendez, Srinath Reddy, Susan Scrimshaw, Jaime Sepulveda, David Serwadda, Huda Zurayk*

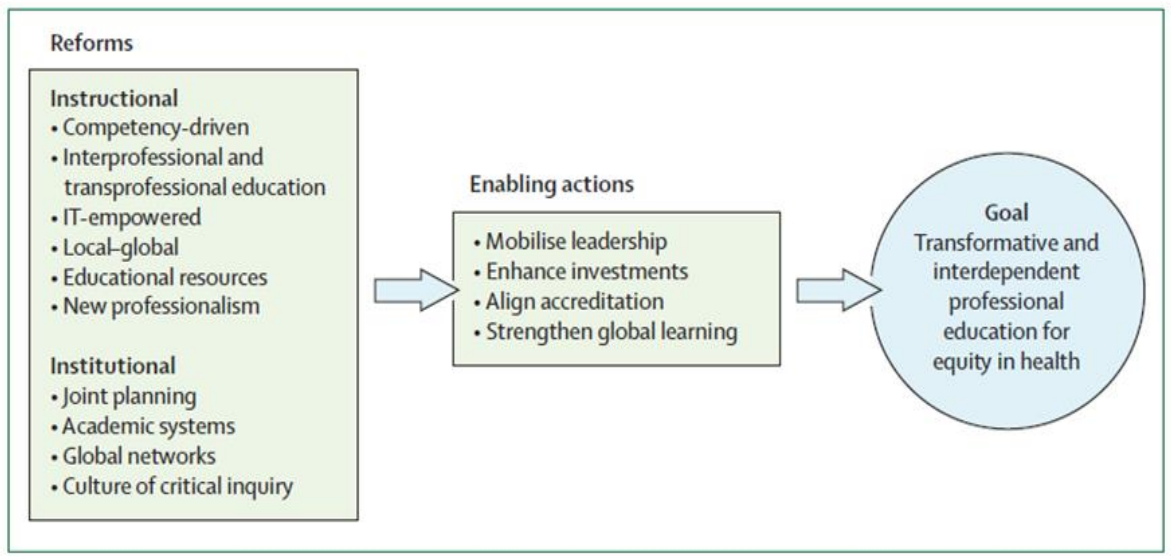
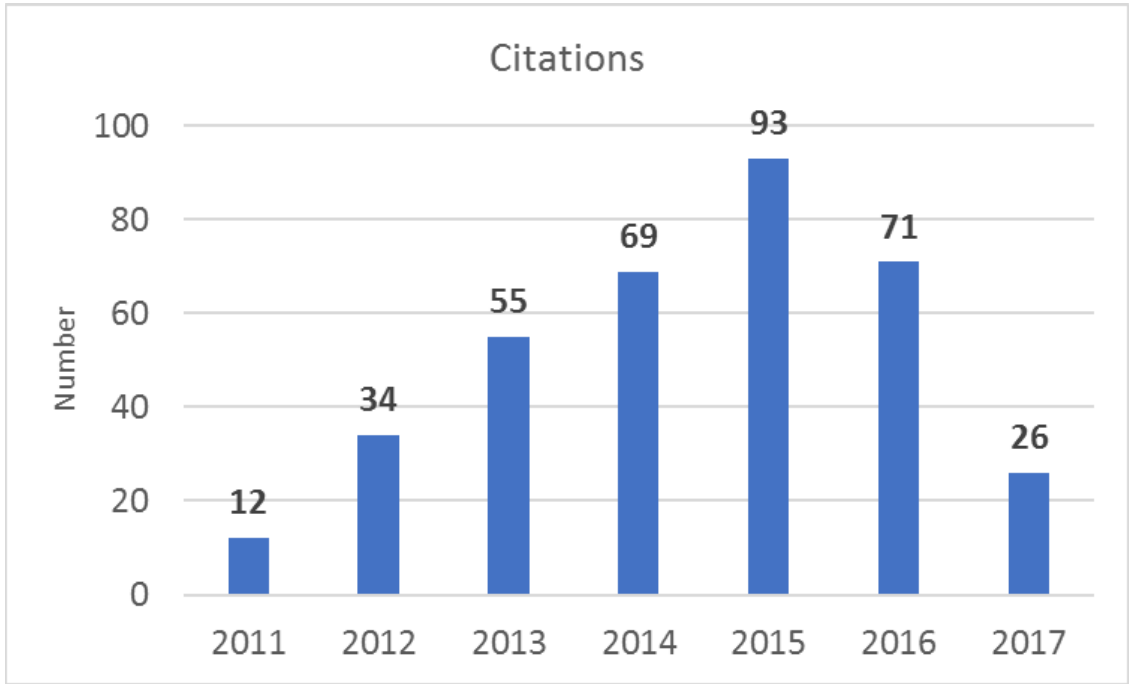


Figure 12: Recommendations for reforms and enabling actions



The future of medical education

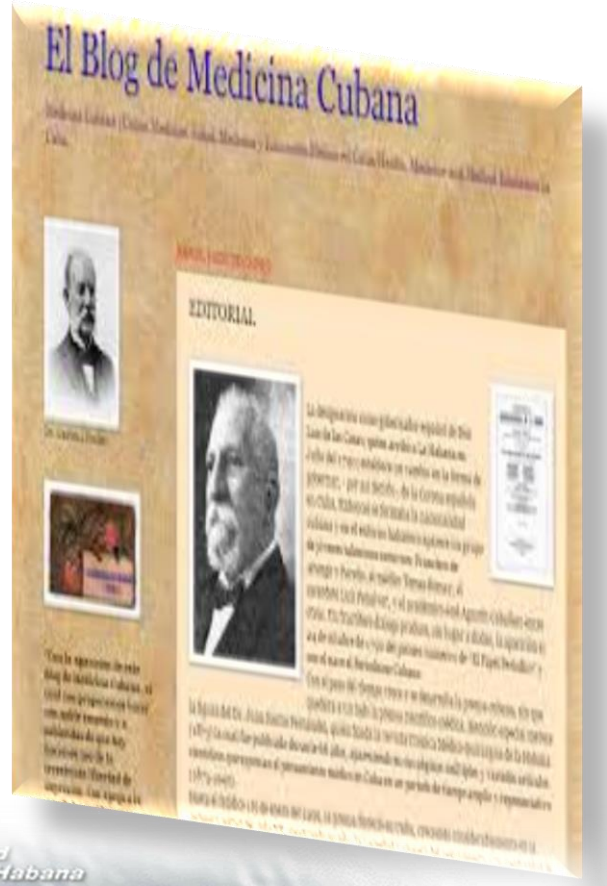
- Global health requires a major integration between public health and medicine
- Problems with Access to and quality of health care
- Lancet Comission 2010 on the Production of Health Professionals for the 21st Century: global perspective; systems thinking; transprofessional educación – based on competencies; alignment of the education with the health system
- Universities are not very good at interdisciplinary teaching
- But new innovative education is possible

Summary

- Education responds to new knowledge, health care system, the diseases that exist and new effective treatments
- Dissatisfaction with medical education has existed for centuries
- Reforms have never been sufficient – but have worked
- Motivating teaching faculty: change and innovation help
- The Cuban model has implemented many proposed reforms
- In the future more integration of education of all health professionals is needed
- Integration across disciplines will also be needed to solve global health problems

END

Cuban Medical Education: Past, present and future



Dr. Ileana Morales Suárez

National Director, Science and Innovation, Ministry of Public Health, Cuba

Professor and Researcher, National School of Public Health, Cuba

CUBAN PUBLIC HEALTH
Background

History Will Absolve Me (1953)

Platform:

- Extreme poverty
- Lack of access to health care
- Overcrowding and inadequate housing
- Children dying for lack of medical attention

FROM THAT MOMENT, HEALTH HAS BEEN A FUNDAMENTAL COMPONENT OF OUR SOCIAL PROJECT.

Cuba's Constitution enshrines the principles of humanism and solidarity that have characterized Cuban public health.

Article 50:

Everyone has a right to health care and health protection. The State guarantees this right.

Public Health Law (Law 41) is the expression of the political will of an entire people, without discrimination or social exclusión.

“Our country’s future must necessarily be a future of scientists.”

Fidel Castro Ruz, January 15,1960

Fig. 1. Fidel Soldado de las Ideas.

The beginnings…

Literacy
Agrarian reform
Bringing health care to every corner of Cuba
INTERNATIONAL COLLABORATION

- Higher Education Reform Law proclaimed January 10, 1961
- New medical curriculum with social and humanistic focus
- Free tuition and textbooks
- Establishment of a system of free university residences
- On October 17, 1962, a strategy to develop Cuban public health and health human resources was announced.

PRINCIPIOS DEL SISTEMA NACIONAL DE SALUD

SISTEMA ÚNICO

ESTATAL Y SOCIAL

ACCESIBLE Y GRATUITO

PROMOCIONAL Y PREVENTIVO

COMUNITARIO

INTERSECTORIALIDAD

COLABORACIÓN INTERNACIONAL

ADELANTOS CIENTÍFICO-TÉCNICOS

UNIVERSAL Y REGIONALIZADO

5

Individual medicine → social medicine

Curative medicine → preventive medicina

Medicine focused on disease → medicine focused on health

Principles of the National Health System

A SINGLE, STATE-OPERATED SOCIAL SYSTEM

FREE AND ACCESSIBLE

BASED ON PROMOTION AND PREVENTION

COMMUNITY-BASED INTERSECTORAL

INTERNATIONAL COLLABORATION

SCIENTIFIC AND TECHNICAL PROGRESS

UNIVERSAL AND REGIONALIZED

How to Improve Health Status?

Accessibility, Quality, Equity, Outcomes

1. **Havana ► provinces ► rural and mountains**

2. **Social determinants / multisector actions ► agrarian reform ► literacy campaign ► social programs**

3. **Hospitals ► community clinics ► family doctor-and-nurse**

4. **Curative practice ► preventive ► integration of prevention, treatment and research**

History

1960s
-Care model focused on disease
-Private medical practice eliminated
- Creation of a single health system
- Comprehensive polyclinics
- Vaccination campaigns

1970s
- Basic Health Programs
- Creation of Medical Universities
- Community medicine model
- Development of hygiene and epidemiology

1980s
-Comprehensive Family Health Program
-Introduction of high tech
-Creation of medical science faculties in all provinces

1990s
-Improving Primary care
- Maintaining health indicators

Decade beginning 2000
- Investments
- Research and technology development
- Increased collaboration

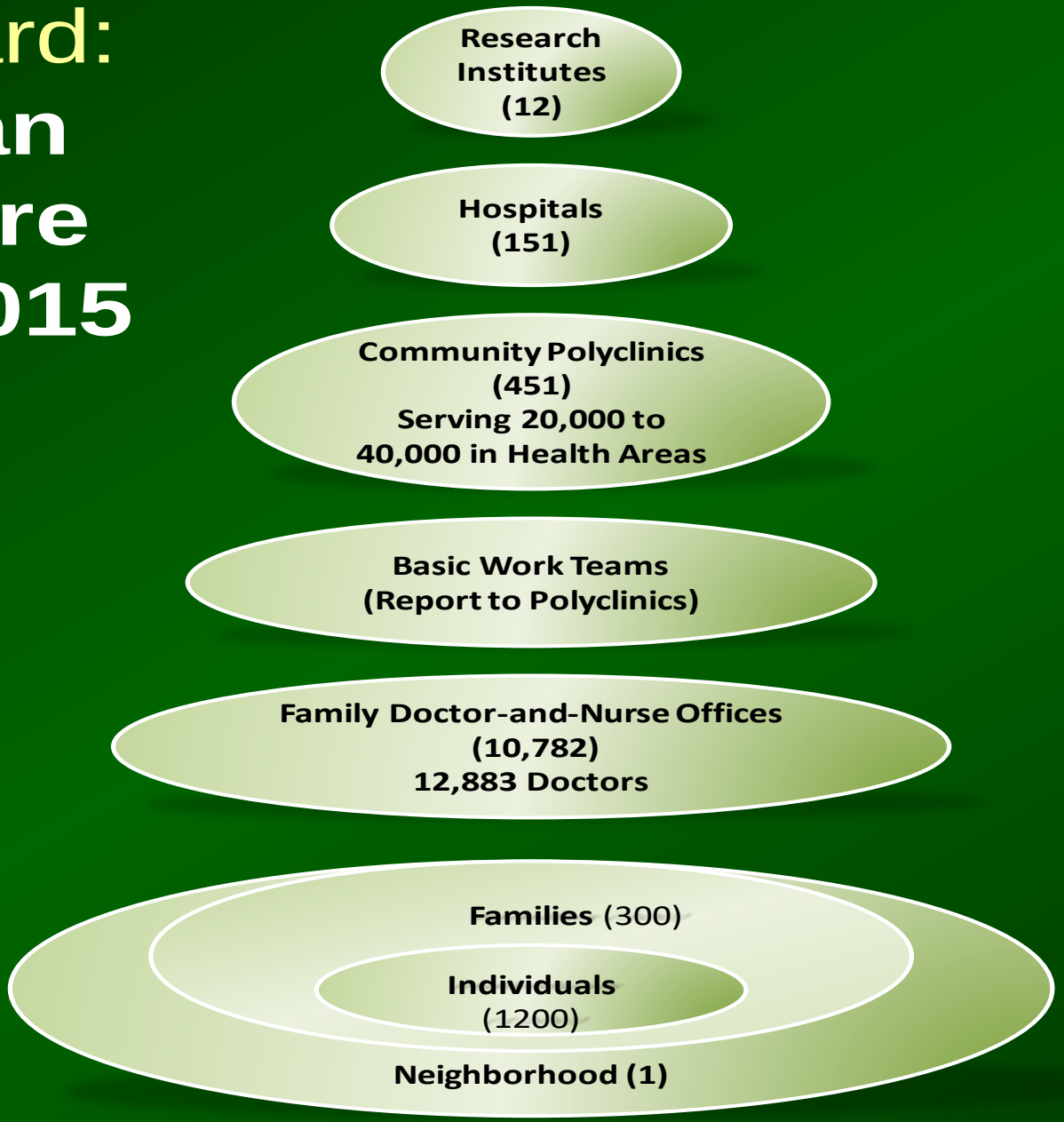
Decade beginning 2010
Transformation
-Reorganization
-Rationalizaton
-Regionalization

6000 doctors

90,161 doctors
(80/10,000 population)

2010–2017: Deepening the process of rationality and efficiency in the health system Transformation

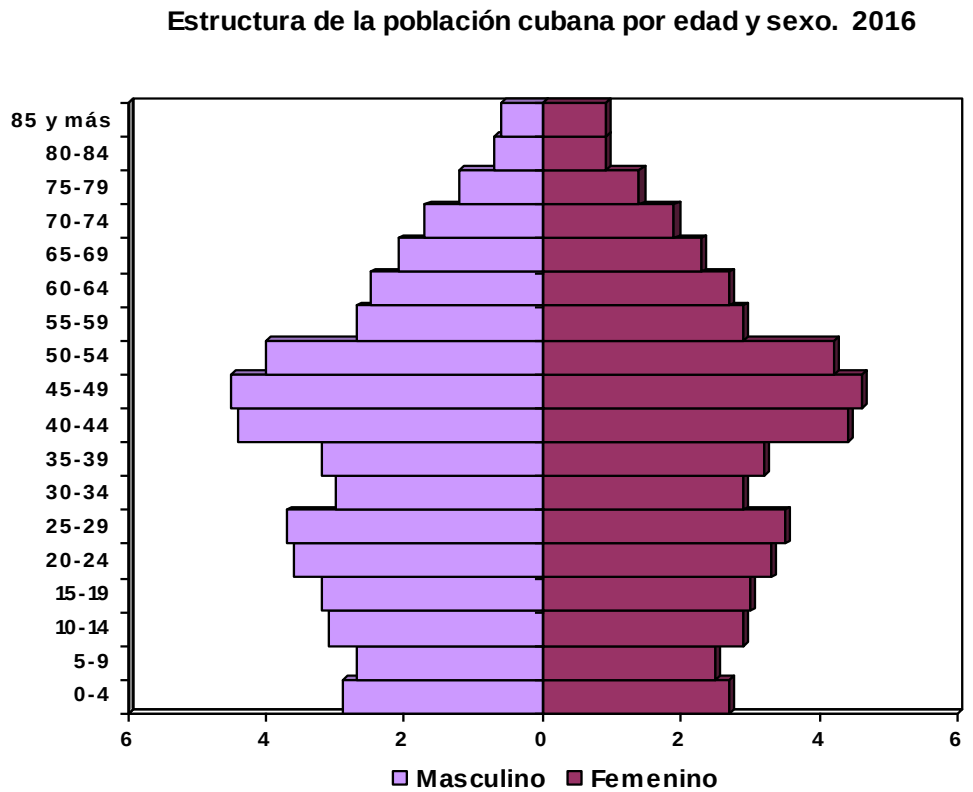
Fast Forward: The Cuban Health Care Pyramid 2015



POPULATION

- **population 11,239,315**
- 38,219 more women than men
- **19.8%** aged ≥60 years

Cuban population structure by age and sex, 2016



Fuente: Sistema de Información de Demografía. ONEI.

Male Female

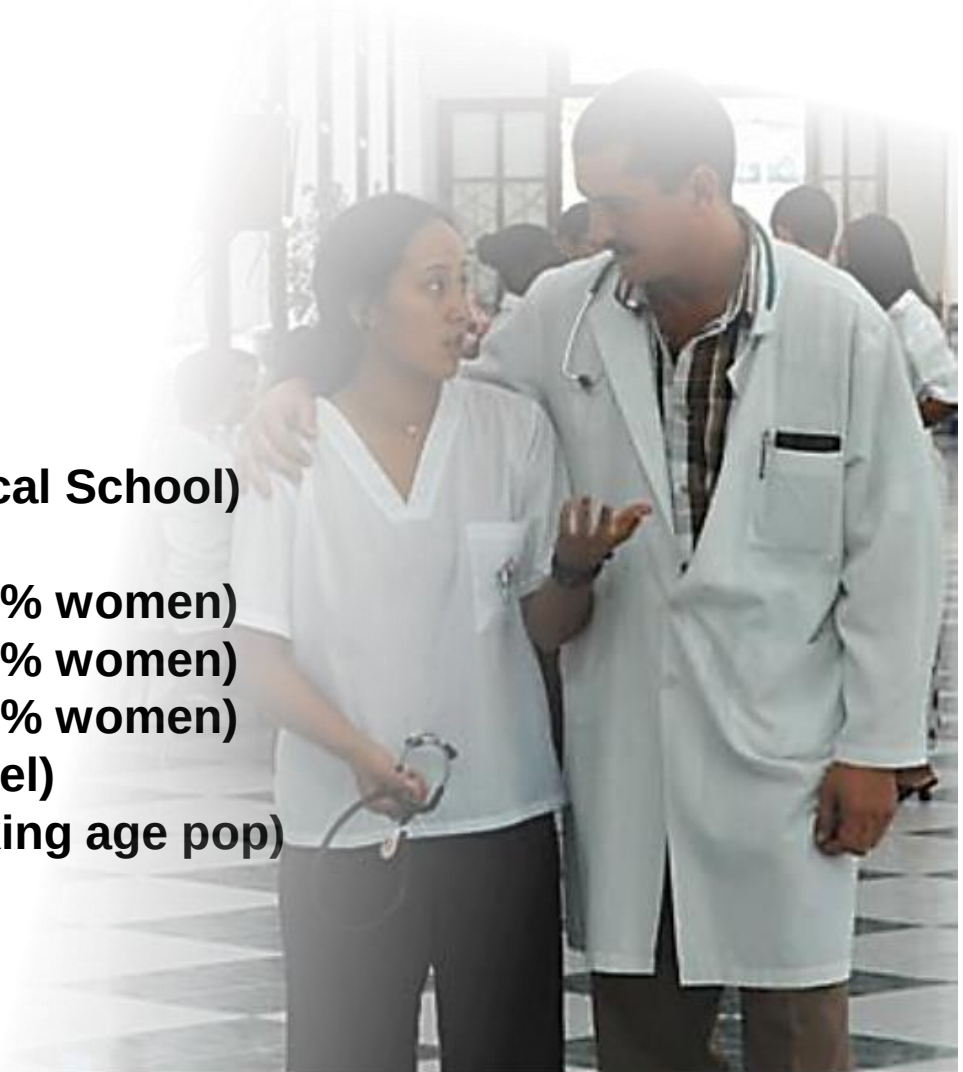
Source: Demographic Information System, ONEI

Fast Forward:
Health Outcomes
2015

Literacy	**100.0%**
Improved water source	**95.2%**
Infant mortality	**4.3/1,000 live births**
Under-five survival	**99.4%**
Maternal mortality	**41.6/100,000 live births (24.8 direct/16.8 indirect)**
Life expectancy	**79.4 years (women 81)**
Main causes of death	**Heart disease/cancer**

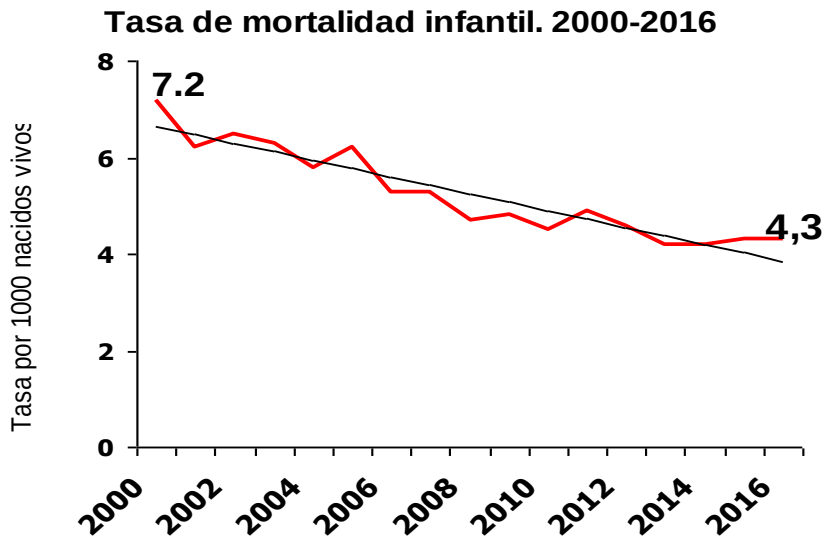
Fast Forward:
Resources at Hand
2016

Hospitals	**150**
Polyclinics	**451**
Dental clinics	**110**
Family docs in neighborhoods	**12,883 (of 44,000+)**
Maternity homes	**136**
Nursing homes	**147**
Seniors day homes	**265**
Medical sciences universities	**14 (including LA Medical School)**
Research centers	**37**
Physicians	**90, 161 (1/125 pop) (63% women)**
Dentists	**16, 852 (1/640 pop) (75% women)**
Nurses	**89.999 (1/123 pop) (88% women)**
Allied health professionals	**229,417 (university level)**
Total health personnel	**493,609 (6.8% of working age pop) (71% women)**

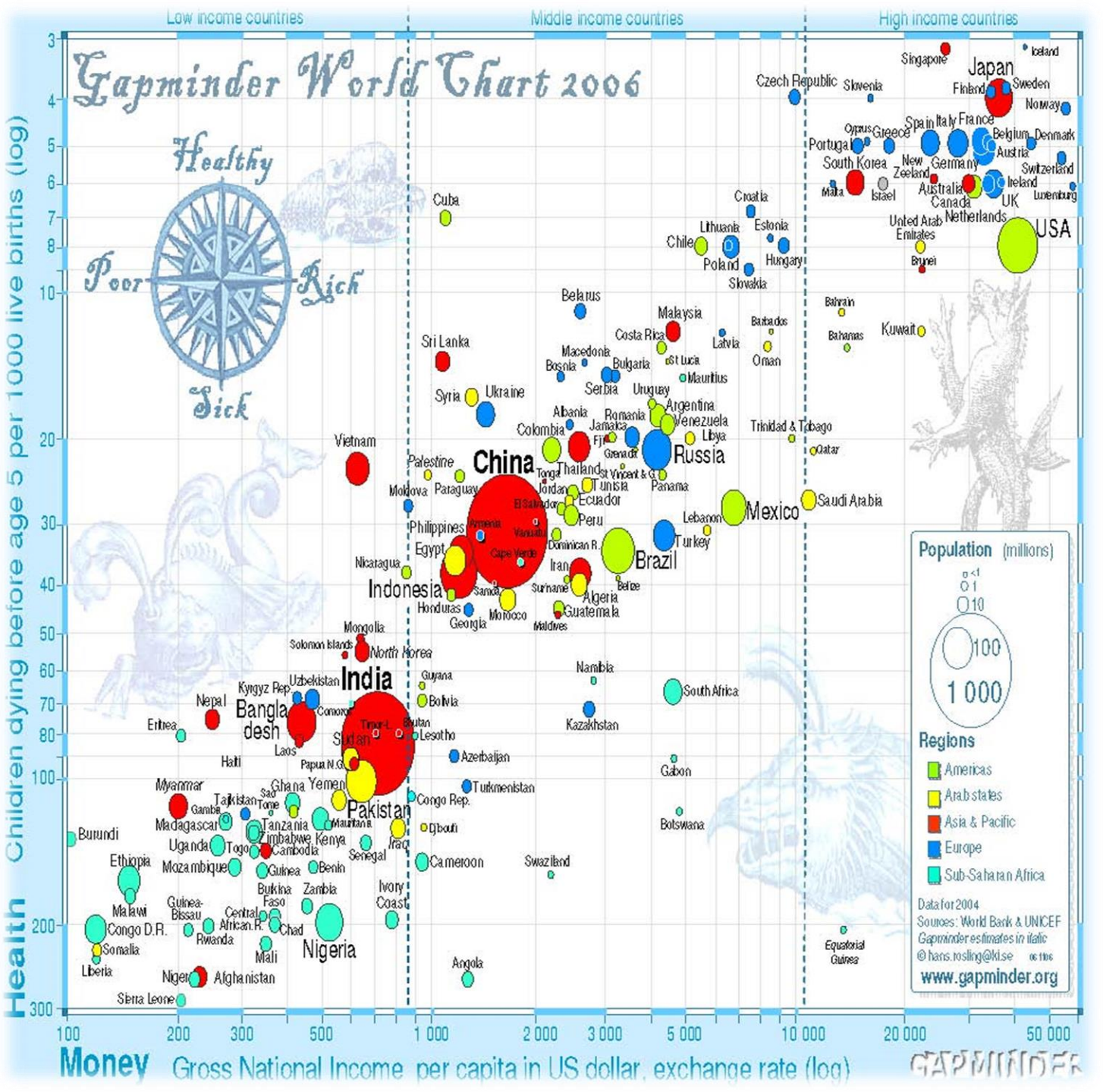


Infant mortality rate, 2000–2016

Per 1000 live births



- Infant mortality <5/1000 live births for 8 years
- 27 municipalities with no infant deaths
- Congenital birth defects down to 0.8, the lowest in history



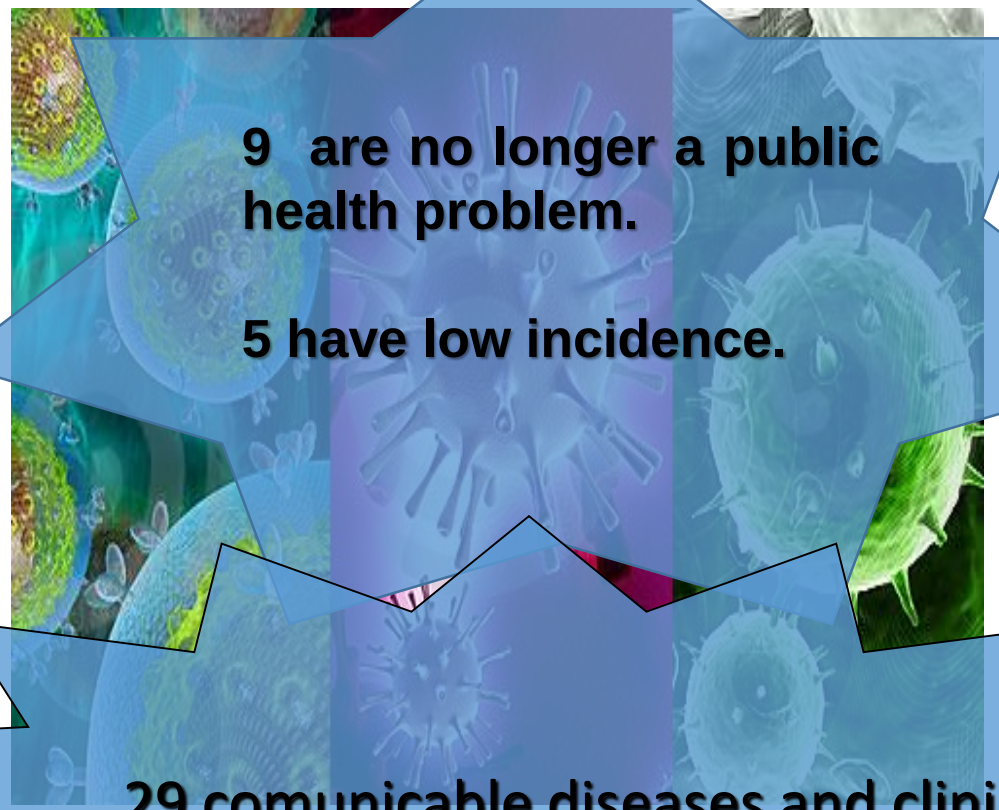
VACCINES

- **98%** vaccination coverage
- 13 vaccines used, 8 of which are produced in Cuba
- Some Cuban vaccines are unique.

COMMUNICABLE DISEASES

14 ELIMINATED

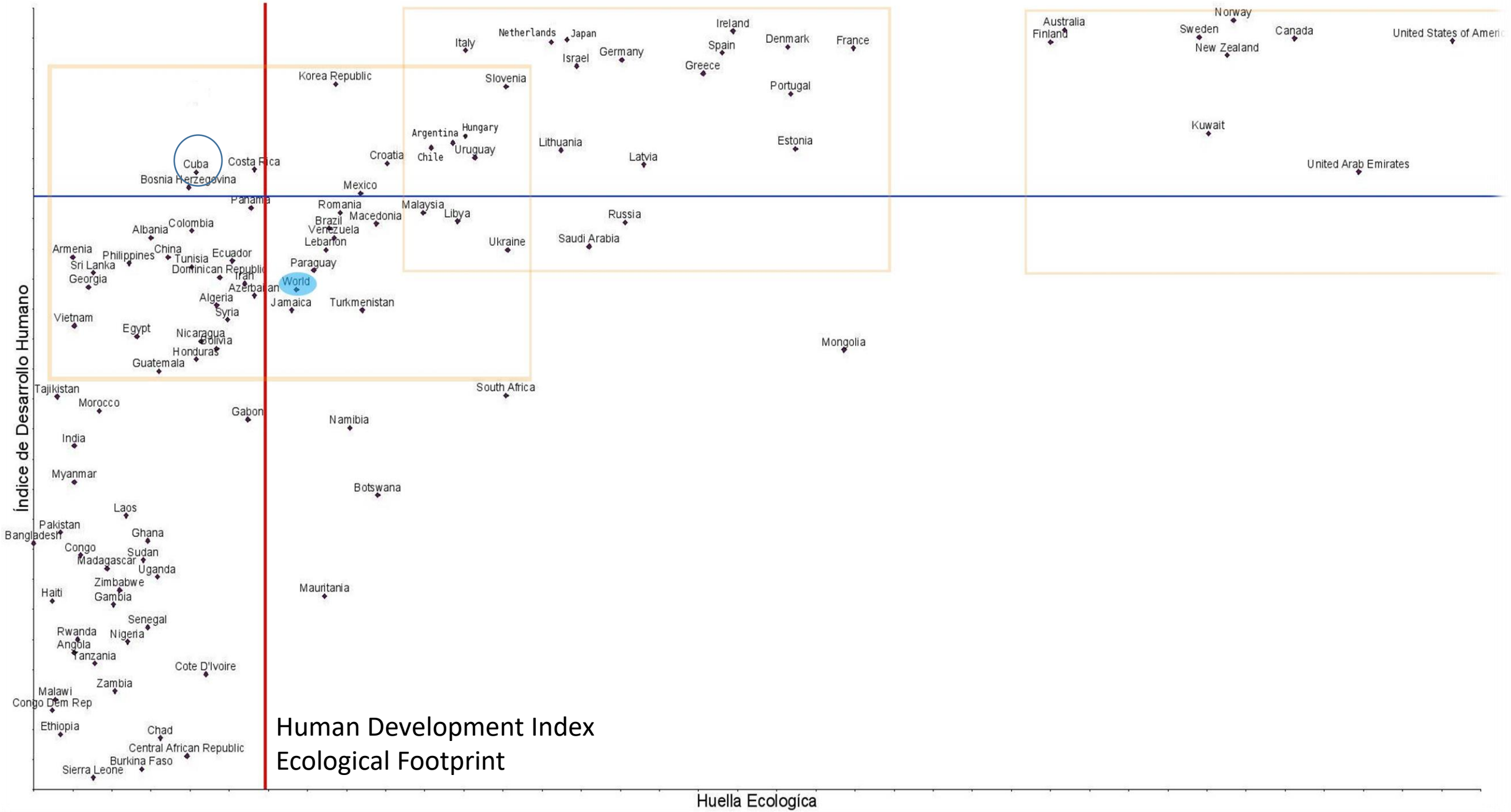
- Polio
- Diphtheria
- Neonatal tetanus
- Adult tetanus
- Measles
- Rubella
- Mumps
- Post-mumps syndrome
- Congenital syphilis
- Typhoid fever
- Tubercular meningitis
- Whooping cough
- Pediatric HIV/AIDS
- Human rabies



9 are no longer a public health problem.

5 have low incidence.

29 comunicable diseases and clinical syndromes are under control,
18 by vaccination.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Huella Ecológica
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Congo Dem Rep
Ethiopia
Chad
Central African Republic
Burkina Faso
Sierra Leone

"An evaluation of 25 countries in the Americas measuring relative inequalities in health revealed that **Cuba** is the country with the best health situation in Latin America and the Caribbean. It is also the country which has achieved the most effective impact with resources, though scarce, invested in the health sector"

(Study on Human Development and Equity in Cuba, UNDP, 1999)

INTEGRATION:

Cuban medical education is the intersection of Cuba's model of higher education with its model of public health.

ACADEMIC–OUTREACH

- Health service settings are learning settings.
- Guiding principle: education in the workplace
- Early linkage community/family/patient

COMPREHENSIVENESS

- The medical university is a concept, not a building.
- The medical university is the health system itself.
- It is an open and inclusive University.

SYSTEM FOR TRAINING HEALTH HUMAN RESOURCES IN CUBA

TRAINING PROCESS

Professional training
Specialty and postgraduate training
Continuing medical education

ENTRY

- Vocational training
- Professional guidance
- Selection process

Curricular component
Extracurricular component
System of educational influences

EXIT

Graduates

- Doctors
- Dentists
- Nurses
- Health technologists

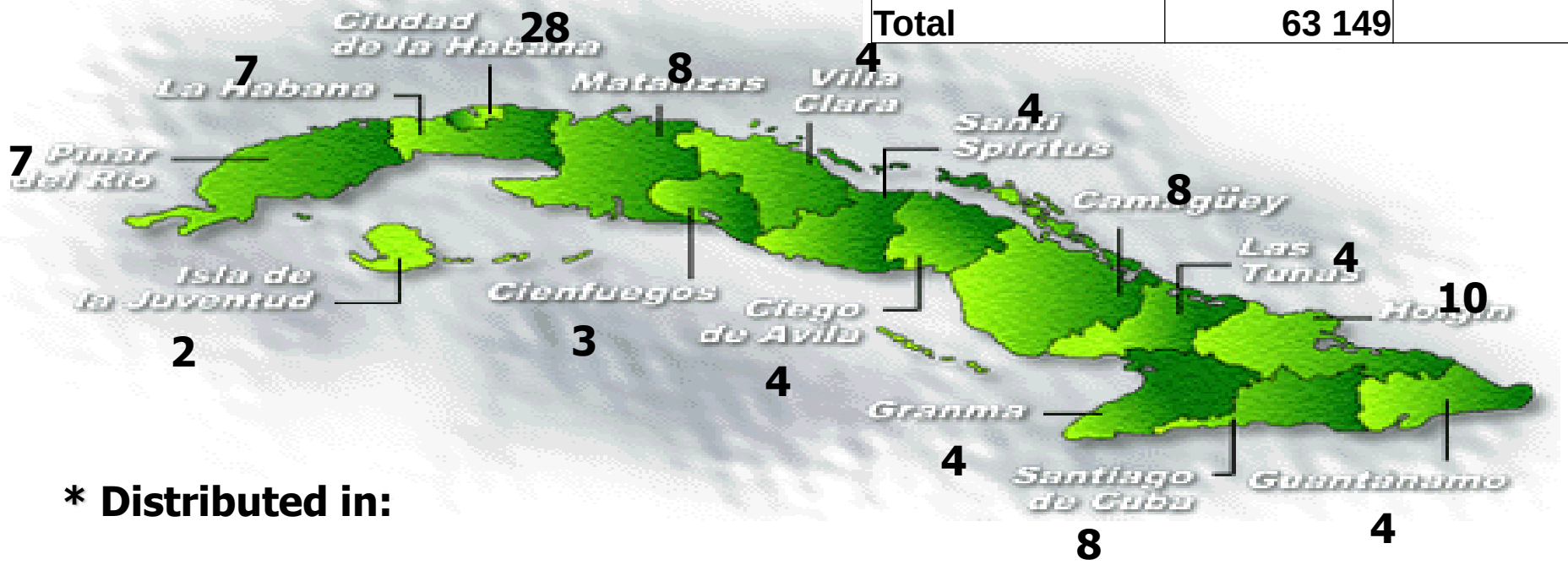
- Postgraduate training

Evaluation and Feedback

TEACHING SETTINGS / HEALTH SERVICES

Educational Institutions National Health System

Students	Cuban	Foreign	Total
Medicine	51 152	8 941	60 093
Dentistry	8 245	44	8 289
Nursing	3 752	11	3 763
Total	63 149	8 996	72 145



*** Distributed in:**

- 24 Medical Faculties
- 1 Latin American School Medical School
- 1 School of Public Health
-

>36,000 professors

- 4 Dental Faculties
- 4 Faculties of Nursing and Technology
- 13 Branch campuses
- 3 Paramedical Schools

Professional Model

General Practitioner

Solid scientific and humanist training

3 Profiles

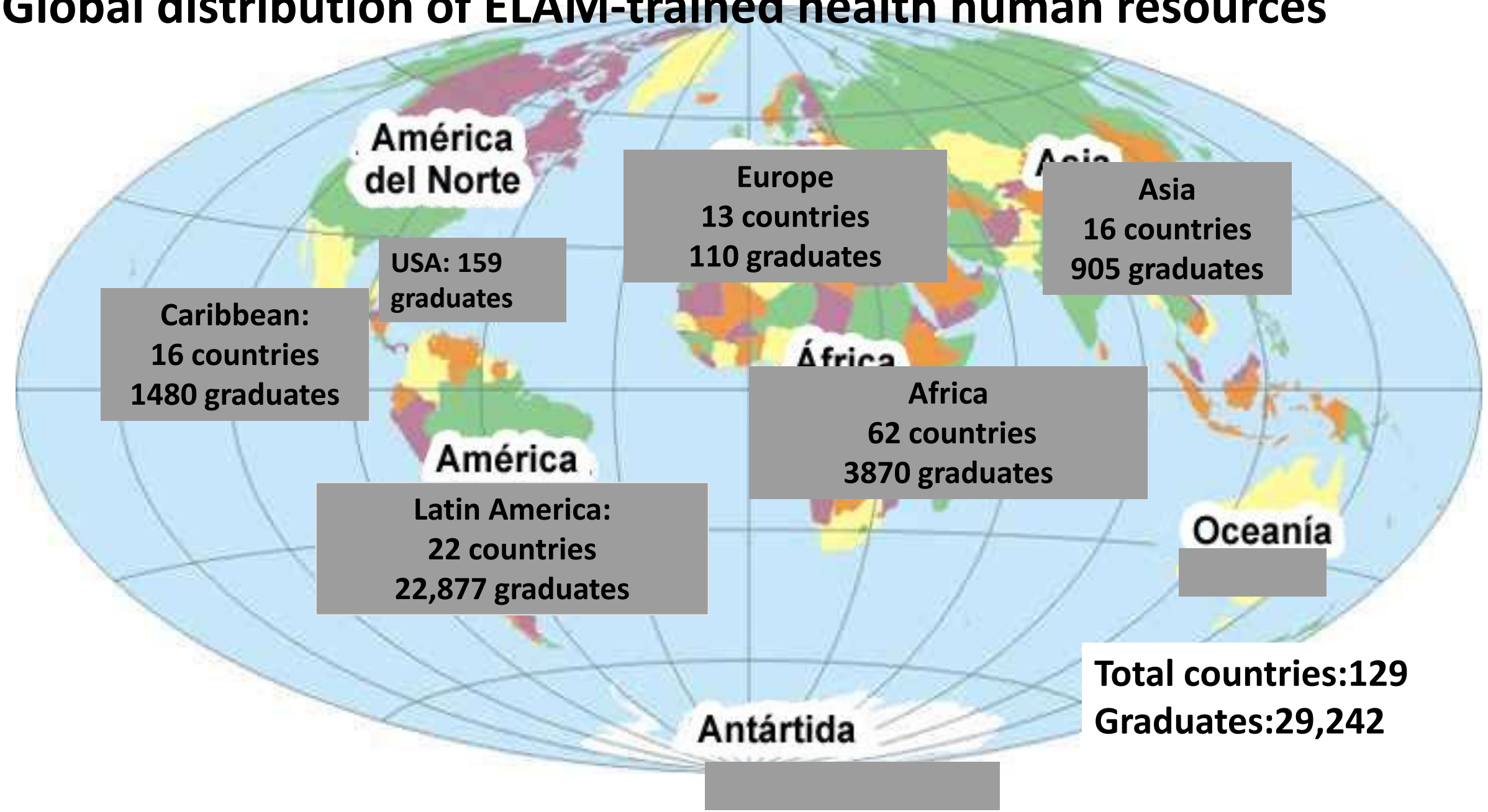
Political and ideological
Professional and academic
Occupational

5 Funciones

Family medicine
Teaching
Administration
Research
Specialized

277 Professional problema
189 Major health problems

Global distribution of ELAM-trained health human resources

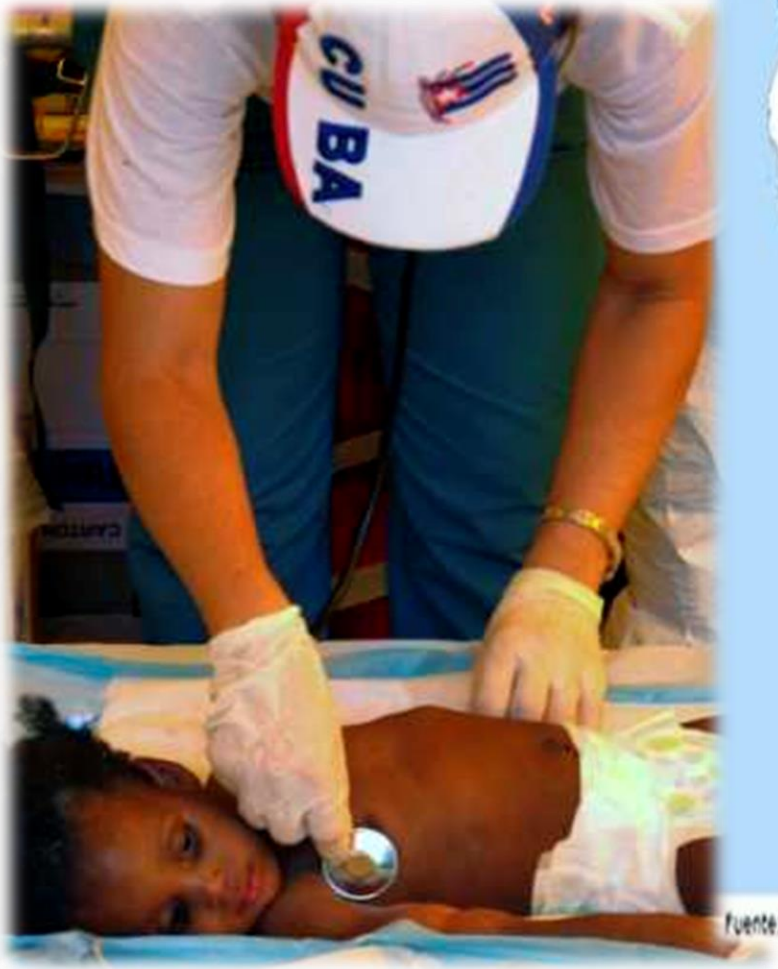


Total countries:129
Graduates:29,242

Available at: http://www.redelam.elacm.sld.cu/redelam/

From Solidarity to Sustainability

The Henry Reeve Contingent



325,000 Cuban health cooperants in 158 countries

Cooperation in 65 countries in 2015

Source: 2015 Statistical Yearbook, Minstry of Public Health, Havana

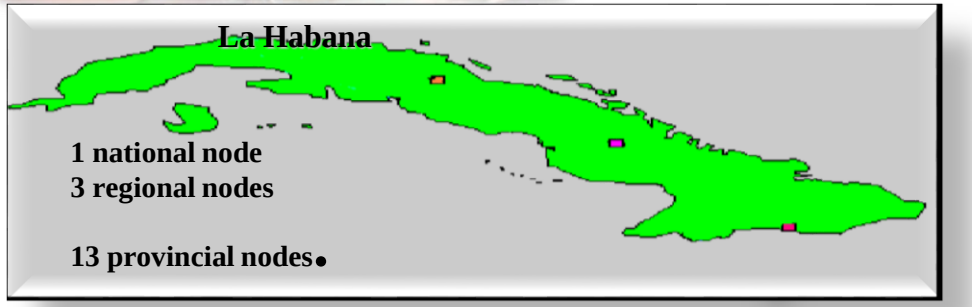
April 24–28, 2017
Medical University of Santiago de Cuba
Program Accreditation
Medicine, Faculty 1
Medicine, Faculty 2
Dentistry

Cuban university accreditation system.

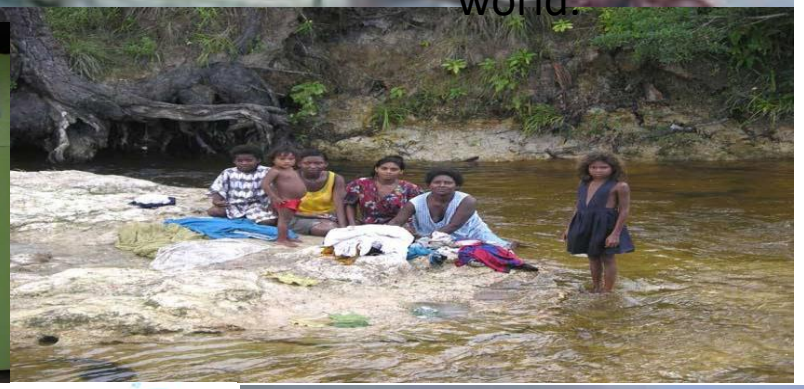
INFOMED

Cuba's health information network

http://www.sld.cu/



More than doctors, they will be zealous guardians of the most precious human attributes; apostols and creators of a new world.



HEALTH FOR ALL IS POSSIBLE

END

Experiences of Cuban trained doctors returning to South Africa

Dr Sanele Madela (CEO, Pomeroy, CHC)
Dr Nhlakanipho Gumede (CEO, Pholela CHC)

(Department of Health, KZN, South Africa)

Outline of presentation

1. Recruitment into the Cuban training programme
2. Cuban curriculum
3. The bridging programme based at SA medical schools

Cuban training and its uniqueness

- Recruited from the rural South Africa
- Shortage of Human Resources in the Medical field
- South African Medical Universities with limited intake
- Late President Fidel Castro opened his hands to Late President Mandela through Dr Nkosazana Dlamini Zuma (former Minster of Health)
- Little did they know about the Health System in Cuba (based on primary Health Care)
- While, SA wanted to increase numbers of doctors trained for SA poor communities. The unplanned consequence was the value of the emphasis on Primary Health care in the medical training.

Cuban training and its uniqueness

- Learning in Cuba meant you become automatically the master in Public Health as this was their main focus (Curriculum).
- Disease spectrum was different from that of South Africa.
- Preventative Medicine (Cuba) vs Curative Medicine (SA), providing quality health care with minimal resources.
- Taught by people who want you to be a doctor (strong beliefs in individuals).
- Most of the teaching takes place in the community.
- Medicine is the same in in the world, what makes Cuba different is the constant emphasis on the health problems that are situated in the community context, with a strong focus on public health.
- The disease was always linked to what was happening in the community, it made us realise that closing the tap was more important than mopping the floor.

Cuban training and its uniqueness

- The medical education on epidemiology needs to take the context and environment into consideration.
- Epidemiology in Cuba differs from South Africa: e.g. HIV/Aids, and TB
- The comparison of the Cuban trained students on their entry to south African universities with South African trained Students is somewhat invalid.
- The perfect level to compare the competency of these doctors will be the evaluation of the outcomes of the internship and further in their career.
- The Government program was never internalized by our very own South African Universities. Hence there is resistance in forming part of the solution.
- Otherwise they would do their very best in making sure that they produce competent doctors out of the Cuban trained students.

Cuban Curriculum

University Polyclinic Medical Training Program (UPMTP), Cuba, 2008-2009 Academic Year*

YEAR ONE			
Semester 1	Morphophysiology I: Cellular & Tissue Level, Prenatal Development (10 weeks)	Morphophysiology II: Integumentary and Musculosekeletal Systems (8 weeks)	Morphophysiology III: Nervous System (1 week)
	Comprehensive General Medicine (Family Medicine) I (20 weeks)		
	Philosophy & Health I, Health Information Technology I, English I, Physical Education (17 weeks each)		
Semester 2	Morphophysiology III: Nervous System (11 weeks)	Morphophysiology IV: Metabolism, Endocrine and Reproductive Systems (10 weeks)	
	Family Medicine II (22 weeks)		
	Philosophy & Health II, English II, Physical Education II (22 weeks each)		
YEAR TWO			
Semester 1	Morphophysiology IV (continued), History (6 weeks each); Family Medicine III, English III, Physical Education III (16 weeks each)	Morphophysiology V, History of Cuba (10 weeks each)	Morphophysiopathology I (1 week)
Semester 2	Morphophysiopathology I (continued, 9 weeks)	Morphophysiopathology II (12 weeks)	
	Family Medicine IV, Psychology of Health Care I, Health Information Technology II, English IV, Physical Education IV (21 weeks each)		
YEAR THREE			
Semester 1	Introduction to Clinical Medicine and Medical Semiology, Clinical Laboratory, Imaging, Psychology of Health Care II, Pharmacology I, English V (20 weeks each)		
Semester 2	Internal Medicine, Pharmacology II, English VI (20 weeks each)		

YEAR FOUR			
Semester 1	Family Medicine V (6 weeks)	General Surgery (10 weeks)	Obstetrics & Gynecology (10 weeks)
	English VII (24 weeks)		
Semester 2	Pediatrics (16 weeks)	English VIII (13 weeks)	
YEAR FIVE			
Semester 1	Public Health (9 weeks)	Family Medicine VI (7 weeks)	Psychiatry (6 weeks)
	English IX (10 weeks)		
Semester 2	Traumatology & Orthopedics (6 weeks)	Urology, Otolaryngology, Ophthalmology, Dermatology, Tropical Medicine (3 weeks each)	English X (11 weeks)
	Forensic Medicine (12 weeks)		
YEAR SIX - INTERNSHIP ROTATIONS			
	Internal Medicine (12 weeks)	Pediatrics (12 weeks)	Obstetrics & Gynecology (8 weeks)
	Surgery (8 weeks)	Family Medicine (8 weeks)	

*Does not include elective or examination periods. Internship is followed by state licensing examination.
Source: Ministry of Public Health, Havana. Vice Ministry for Medical Education and Reseach. September 1, 2008.

- What would be the explanation of the South African trained student failing in a South African University?

- Why are we comfortable to define the failure of the individual student with the failure of the Cuban programme?

- How would you make sure a SA trained doctor catches up on the medical curriculum that focuses on primary health care that is relevant in the SA National Strategic Plan?

The bridging programme based at SA medical schools

The length of this programme varies between SA medical schools:

1. University of Pretoria is 3 months;
2. Stellenbosch is 6 months;
3. Wits is 6 months;
4. University of Cape Town is 18 months.

***The length of course determines financial reimbursement to the University.

The bridging programme based at SA medical schools

- From Cuba to South Africa – failure was set up as an expectation by the status quo.
- One knew that we were starting our final year on a negative mark.
- Discrimination became the dominant experience.
- We were victims of exceptionalism
- The idea of doing Final year in South Africa was the best idea ever as this taught us about the Epidemiology of South Africa

- **The qualifying process involved**:

1. First train in Cuba
2. The prerequisite for writing the Cuban final exam (ESTATAL) is to pass in an exam from a South African Medical Institution.

The bridging programme based at SA medical schools

- Our medical knowledge was assumed to be inferior and all future interactions were based on such. We were often told our knowledge of Medicine is in the level of 4th year South African Students.
- Psychologically, one has to prepare oneself to be resilie
- "*Why did we choose to go study in Cuba?"* We were often asked.
- Our experience is that, even though, we did well in the exam, this did not correspond with the final result.
- We needed to adjust as quickly as possible to be able to pass our final year.
- The whole program was used to fight political battles, not viewed as part of a solution in Human Resource improvement in our Country.

Proportions of Cuban Trained Doctors working in Urban vs Rural areas in KZN

Total trained	Total working for DoH	Urban % (n)	Rural % (n)	Internship outside KZN % (n)	Deceased	Private sector
N= 104	86% (n=86)	17% (n=15)	78% (n=67)	4.65% (n=4)	4.8% (n=5)	13% (n=13)

END

Cuban medical education in South Africa

Shah Ebrahim,Priscilla Reddy, Kalipso Chalkidou, Alicia Sui, Anam Nyembezi, Neil Squires, Charles Hongoro

London School of Hygiene & Tropical Medicine, Imperial College London, Human Sciences Research Council, Public Health England

What’s the big question?

- What can we learn from the Cuban approach to medical education that might be useful for transforming our existing curricula and approach?

Why are we doing this?

- NICE Internatinal visit to Cuba to scope NICE Cuban government partnership opportunities (Nov 2013)
- Proposal to explore Cuban medical education in Africa, Health Technology Assessment approach
- Grant application made to DfID, UK policy research programme (Feb 2014)

“Learning from the Cuban experience in Medical Education:
A collaborative Cuba/UK/RSA proposal for using evidence of the effectiveness and cost-effectiveness of the Cuban model to drive policy change for Universal Health Coverage”

DFID Department for International Development

HSRC Human Sciences Research Council

Policy research programme

- Reviewing previous research on Cuban medical education
- Multiple discussions with key stakeholders
- Examining the political environment and opportunities for leverage
- Engaging with existing collaborations between UK and RSA
- Exploring potential for linking initiatives to gain coherence
- Finding common purpose through High-Level Commission on Health Employment and Economic Growth

Objectives

- Does the Cuban training provide an appropriate set of skills and competencies for the intended role of the trainees (i.e. is the training fit for purpose?).

- How do the quality of teaching, competencies of graduates in their role as primary care practitioners, and the cost of training at Cuban Medical Universities overseas, compare with Universities following the Western training model?

Economic appraisal objectives

- To establish the costs of training medical doctors in Cuba
- To establish the costs of training medical doctors at selected South African universities
- To asses the **value-added** contribution of the Cuban doctors training programme in South Africa , in terms of: human resources capacity; primary health care & UHC programmes; economic benefits to Cuban trained doctors; Perceived impact
- To compare the costs and benefits of the Cuban medical training programme against the traditional South African medical university training

Research activities…

- Mapping of Cuban medical education presence in Africa
- Overview of Cuban medical education
- Systematic review of existing research
- Country case studies
- Cross-sectional survey; interviews; focus group discussions
- Develop costing structure and cost-effectiveness analysis
- Report for policy makers

Content of self-filled online questionnaire: students and graduates

- About you: nationality; gender; marital status; age; dependents; parents' education; school leaving grade
- Choice of medicine
- Choice of medical school
- Career plans and ambitions
- Experience of education: basic sciences; quality of facilities; adequacy of teaching; examinations; learning with other health professions;
- Knowledge, skills acquired: communication skills; clinical skills; procedures without supervision; well-being before and after med school
- Career planning
- Current job, additional training

An example:

2. Choice of medicine as a career:

When deciding to study medicine, how important were the following considerations? Use the scale from 1 (not important at all) to 5 (extremely important). Please select the number.

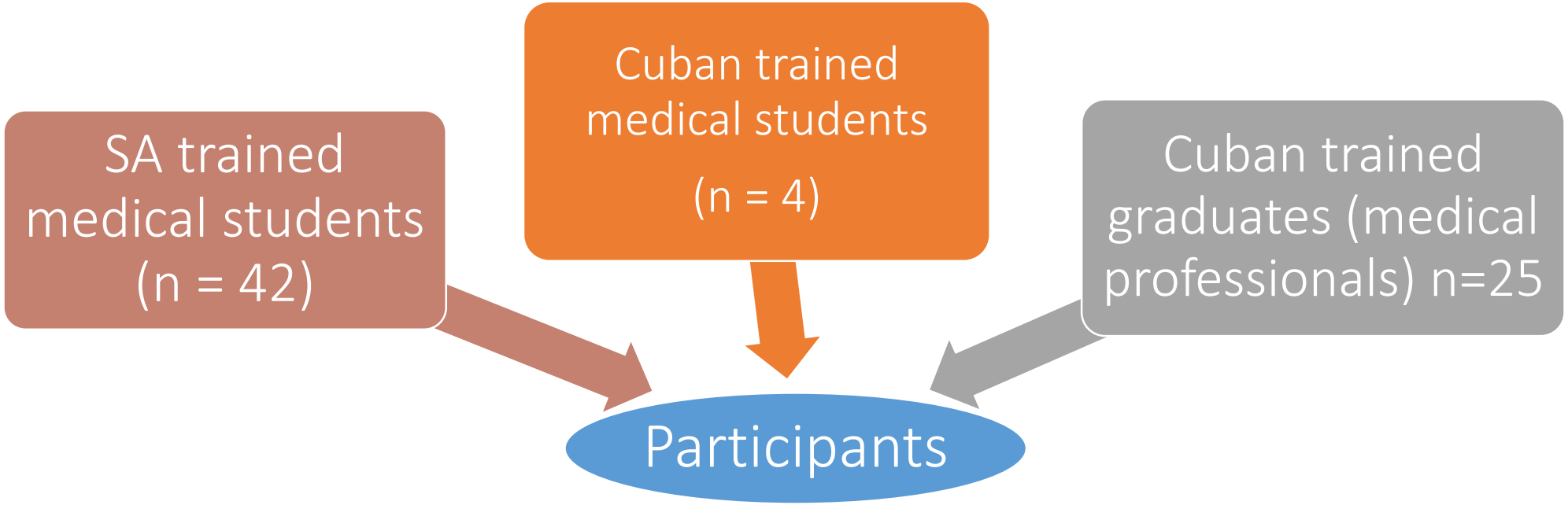
*

	1 Not important at all	2 Of little importance	3 Moderately important	4 Important	5 Extremely important
1. Family wanted me to be a doctor	○	○	○	○	○
2. Good at sciences	○	○	○	○	○
3. Working for social change	○	○	○	○	○
4. High income potential	○	○	○	○	○
5. Desire to work in a rural/underserved area	○	○	○	○	○
6. Desire to work in another country	○	○	○	○	○
7. Social recognition or status	○	○	○	○	○
8. Stable, secure future	○	○	○	○	○
9. Creativity and initiative	○	○	○	○	○
10. Availability of jobs in the future	○	○	○	○	○
11. Work/life balance	○	○	○	○	○
12.Could not do my preferred subject/option	○	○	○	○	○
13. Desire to help other people	○	○	○	○	○
14. Improve health in my country	○	○	○	○	○
15. Become a community leader	○	○	○	○	○

Study participants

- Cuban trained medical students, South African trained medical students, and Cuban trained graduates (Total sample size n= 71; 49.3% females, 50.7% male.)

- Four South African universities:
  - Sefako Makgatho University
  - University of Pretoria
  - Stellenbosch University
  - University of Kwazulu Natal



- Cuban trained students (n=4) and Cuban trained graduates (n=25) were combined (n=29)
- Comparisons made of South African trained students (n=42; mean age M = 24; SD = 1.44) and Cuban trained students and professionals (n=29; mean age M= 35; SD = 4.06).
- Cuban trainees were asked to refer to their Cuban medical education experience; South Africans trainees were asked to refer to their South African education experience.

Analysis

- Due to the non-normal distribution in sample, Mann-Whitney U tests were conducted to examine the differences between Cuban trained and South African trained participants.

- Median scores were reported * p<.05, **p<.01, ***p<.001

What are the key findings?

Reason for choosing medicine as a career

"When deciding to study medicine, how important were the following considerations?"

*Cuban trainees reported importance for the education's relevance to changing and improving health in others and in communities.

*SA trainees reported importance for social status, opportunities of working in another country

	Cuba	SA
Working for social change**	5,00	4,00
Desire to work in a rural/underserved area***	5,00	2,00
Creativity and initiative***	4,00	3,00
Work/life balance*	4,00	3,00
Desire to help other people**	5,00	4,00
Improve health in my country***	5,00	4,00
Become a community leader***	5,00	3,00
Desire to work in another country*	1,00	2,50
Social recognition or status *	1,00	3,00
Stable, secure future*	4,00	5,00

1 (not important at all), 2 (of little importance), 3 (moderately important), 4 (important), 5 (extremely important).

Blue Bar:

*Cuban trainees scored higher than SA trainees

Red Bar:

than Cuban trainees

Communication skills

Cuban trained participants in reported significantly higher confidence than South African trained participants in communicating appropriately in difficult circumstances, communicating health plans with local communities, and learning and working effectively within a multi-professional team

	Cuba	SA
Elicit patients' questions, their understanding of their condition and treatment options, and their views, concerns, values and preferences	5,00	4,00
Communicate clearly, sensitively and empathically with patients, relatives or other carers	5,00	4,50
Communicate appropriately in difficult circumstances (e.g. with difficult or violent patients, when breaking bad news, or with vulnerable patients)***	4,00	4,00
Communicate health plans with local communities***	5,00	4,00
Know when to seek help from a senior colleague	5,00	5,00

Competencies in practical procedures

Both Cuban and South African trained participants were similarly very confident in carrying out these practical procedures.

Cuban trained participants were more confident in prescribing dose and route of insulin.

South African trained participants reported higher confidence in venepuncture, taking blood cultures, measuring blood glucose

Competency in practical procedures	Cuba	SA
[1. Provide cardio-pulmonary resuscitation]	4,00	4,00
[2. Carry out practical procedures: venepuncture, taking blood cultures, measuring blood glucose]*	5,00	5,00
[3. Establish peripheral intravenous access (set up an IV drip)]	5,00	5,00
[4. Carry out practical procedures: urinary catheterisation, skin suturing]	5,00	5,00
[5. Prescribe, set up and monitor a blood transfusion]	5,00	4,00
[6. Prescribe dose and route of insulin, including use of sliding scales]*	5,00	3,50

Confidence in clinical medicine

Cuban trained participants reported significantly higher confidence in a range of clinical skills without supervision than South African trained participants – this reflects the Cuban trained participants were more senior than SA trained.

	Cuba	SA
Diagnose and manage acute medical emergencies ***	5,00	4,00
Obstetrics: carry out a forceps delivery ***	4,00	2,50
Obstetrics: carry out a Caesarean section ***	5,00	2,00
Give an anaesthetic for minor surgery ***	5,00	3,00
Intubate and insert an endotracheal tube***	4,00	4,00
Give health promotion advice to mothers	5,00	4,00
Conduct a health survey in a local community	4,00	4,00
Manage a primary health care team ***	5,00	4,00

Career plans and interests

"When thinking about your career path AFTER medical school, how important are the following considerations?"

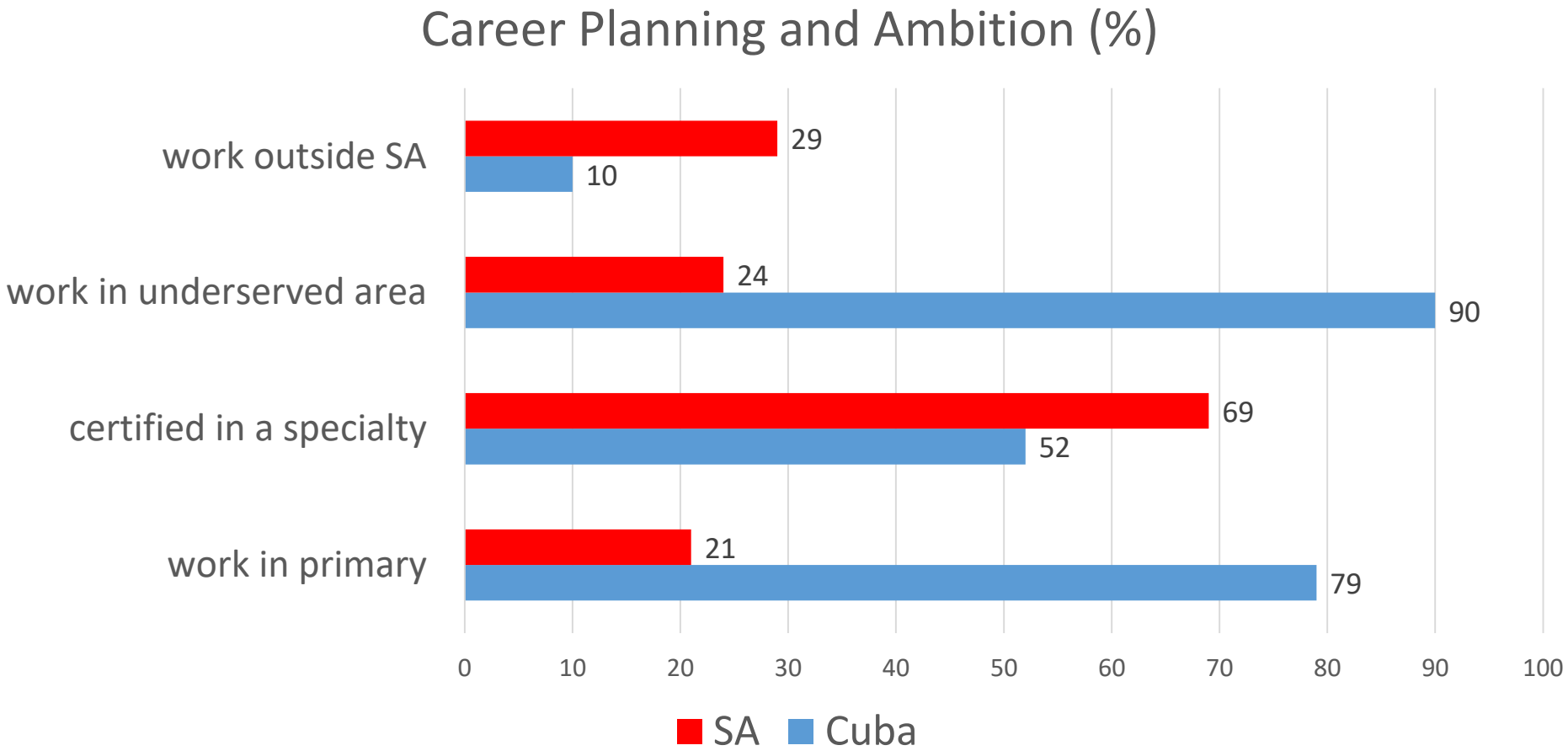
*Cuban trainees reported stronger desire for community engagement, rural experience, social change, creativity initiatives, and ability to make a difference.

*SA trainees indicated importance for high income potential and stable future for their career interest.

	Cuba	SA
[High income potential]*	3,00	4,00
[Stable, secure future]*	4,00	5,00
[Creativity and initiative]**	4,00	3,00
[Solidarity with disadvantaged people]***	5,00	3,00
[Leadership potential]***	4,00	4,00
[Ability to make a difference]*	5,00	4,50
[Work with poor people]***	5,00	3,50
[Improve inequalities in society]***	5,00	4,00
[Working for social change]***	5,00	4,00

1 (not important at all), 2 (of little importance), 3 (moderately important), 4 (important), 5 (extremely important).

Career plans and interests



Other findings

Cuban trainees:

- more opportunities for curricular activities with different health professions
- Importance for rural community and family medical practice experience, social change, leadership potential, and research opportunities
- more favourable attitudes towards the quality of their medical education topics in preparing for their clinical studies
- variety of learning areas covered in their medical education, including team management, and socio-, cultural-, political, and economic aspects of health care.

SA trainees:

- Reported higher academic stress
- SA trainees reported importance for the medical school's geographic location.

Interviews with Deans of Medical Schools: qualitative findings

- Strengths of Cuban training in disease prevention, health promotion, acting as agents of change, leadership skills and having empathy for patients
- Concerns about basic skills in anaesthesia, obstetrics and surgery.
- SA med students are not expected to be competent in surgery/anaesthesia/caesarean section - that is learned during internships
- Language difficulties – thinking in Spanish, translating into English

But…

- Small study, not representative samples, not all medical schools
- Possibility of response biases
- Comparability of South African trained and Cuban trained participants not well balanced
- Considerable unrest in South African universities during the field work
- Online survey methods used could be applied systematically to improve all students (as done in USA schools)

Conclusion

- Cuban medical education has a strong focus on PHC, early prevention and community health.
- It addresses individual health needs in the collective context of family and community.
- It provides an appropriate set of skills and competencies in students
- Cuban trained participants reported good quality of education
- Potentially contribute towards:
  - Meeting shortages of doctors in the public sector and retaining more doctors in underserved areas
  - Large scale rapid increase in medical school output
  - Key driver for re-engineering of the primary health care system to focus on preventive care and promote UHC

Policy recommendations on:

- Deployment of returning Cuban trained doctors in 2017
- Improving induction, support and re-integration programmes for cohorts training in Cuba
- Investment of new resources for medical training in SA
- Curriculum innovation

END

UNIVERSITY OF KWAZULU-NATAL ™

INYUVESI YAKWAZULU-NATALI

REFLECTIONS ON A TRANSNATIONAL EDUCATIONAL PROGRAMME

The Return to South Africa of the Expanded Intake: Nelson Mandela-Fidel Castro Medical Collaboration Programme

Richard Hift

Failures in health care currently

- Problems
  - workforce shortages
  - skills-mix imbalances
  - maldistribution
- Inequality and inequity
- Consequences
  - Communities trapped in health problems of previous century

1903 - South Africa's first serious motor accident occurs when a 24 hp Darracq, driven by Charles Garlick, is hit by a train on a level crossing in Maitland, Cape Town.

South Africa-Cuba Bilateral Co-operation Programme

- The first group of Cuban doctors arrived in February 1996, at the request of President Nelson Mandela, who brokered the government-to-government agreement for South Africa with President Fidel Castro.
- A further request by President Mandela led to the arrival of 11 Cuban medical academics in February 1997 with Professor Aguirre as their leader.

South Africa-Cuba Bilateral Co-operation Program

The South Africa-Cuba Medical Training Programme has expanded greatly, with a total of 976 students being admitted to medical training in Cuba in 2012. This brought the number of students currently studying in Cuba to 1344 in 2012.


If you could start over… Would you have two children again?


Yes… but not THOSE two…

THE LANCET

EDUCATION OF HEALTH PROFESSIONALS FOR THE 21ST CENTURY:
A GLOBAL INDEPENDENT COMMISSION

Health professionals for a new century: transforming education to strengthen health systems in an interdependent world

Julio Frenk, Lincoln Chen*, Zulfiqar A Bhutta, Jordan Cohen, Nigel Crisp, Timothy Evans, Harvey Fineberg, Patricia Garcia, Yang Ke, Patrick Kelley, Barry Kistnasamy, Afaf Meleis, David Naylor, Ariel Pablos-Mendez, Srinath Reddy, Susan Scrimshaw, Jaime Sepulveda, David Serwadda, Huda Zurayk*

The three big challenges

- Numbers
  - Expand the human resources for health
- Fitness-for-purpose
  - Train students in the “real” environment they are needed
- Make a real commitment to the PHC ideal
  - Move beyond urban, big hospital, specialist-led and rescue-orientated training

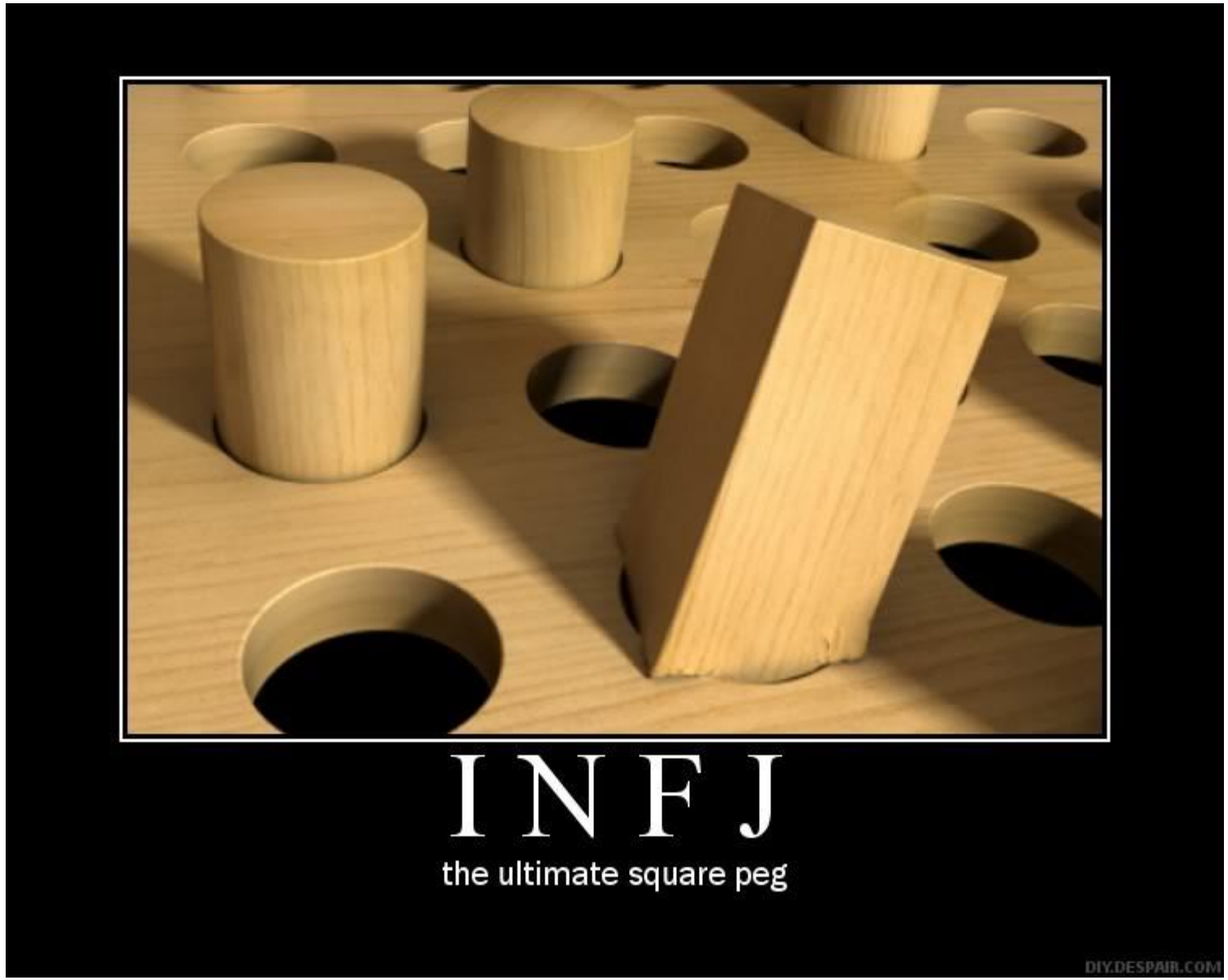
2018

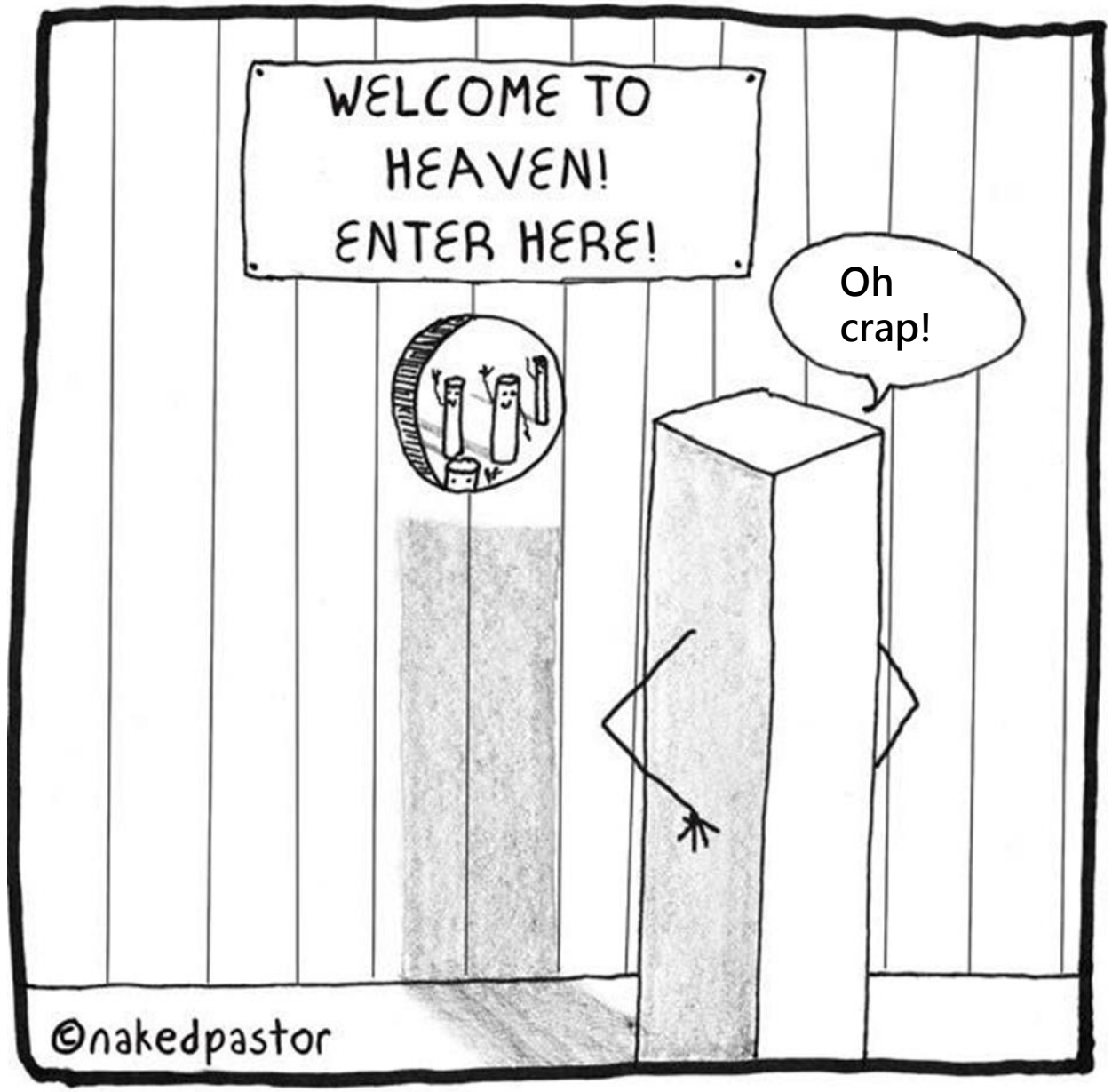
Competencies

Our graduates are required to show competence as communicators, collaborators, leaders, health advocates, scholars and professionals, and to combine these roles with biomedical knowledge and skill into the overarching role of medical expert.

Competencies

To this we add an **eighth competency***: **that of*** **South African health care provider***, embracing comfort with, proficiency in and commitment to working in all South African contexts, rural and urban, district and regional level, community and hospital.*


INFJ
the ultimate square peg
DIY.DESPAIR.COM

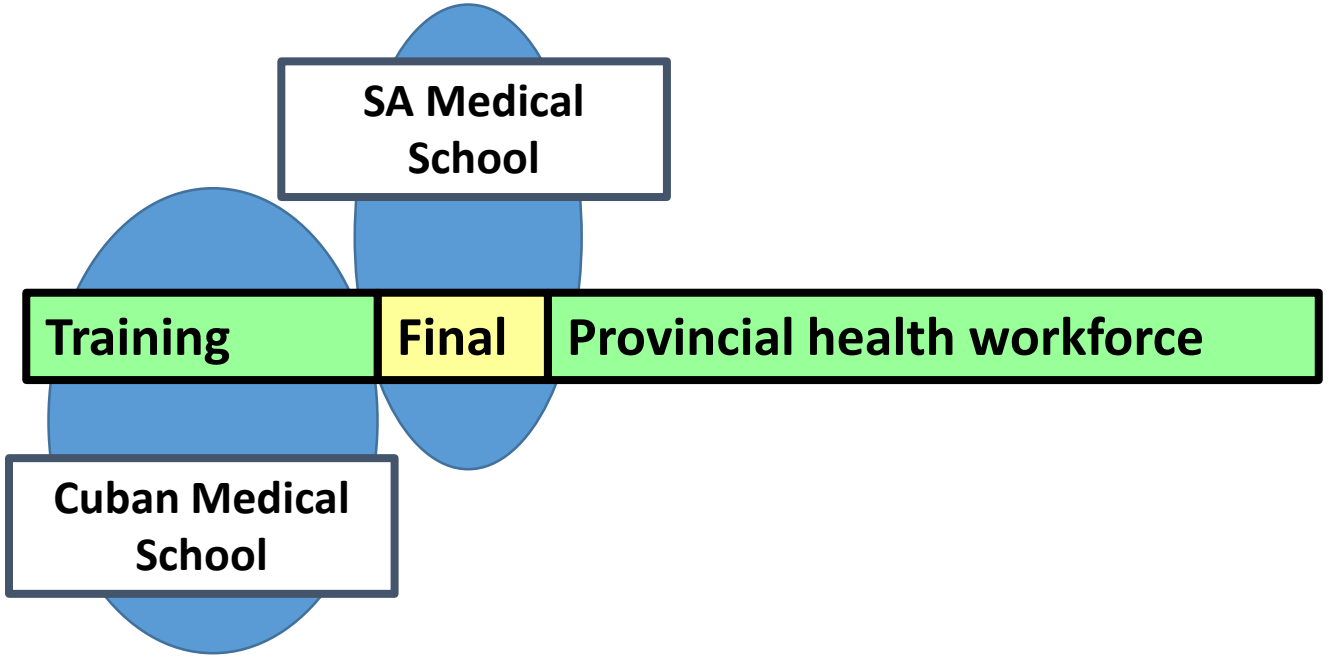

WELCOME TO
HEAVEN!
ENTER HERE!
Oh
crap!
©nakedpastor

The major causes

- “Transnational education”
  - Language
  - Cultural adjustment
- Different health paradigm
  - Different skill sets
- Different educational programme
  - Assessments
- Material factors
  - Funding
  - Accommodation

Transnational Education

- Successful transnational education has not been well studied **but is in general difficult**.
- The focus is usually on the foreign educational experience itself (Lindely et al, 2013, Smith, 2009), with **insufficient attention to the educational paradigms** within which the transnational student learns
- Many transnational collaborations are driven by **economic, political or social imperatives** rather than educational need, and are therefore frequently poorly coordinated with inadequate quality assurance (Summers &Volet, 2008


SA Medical School
Training
Final
Provincial health workforce
Cuban Medical School

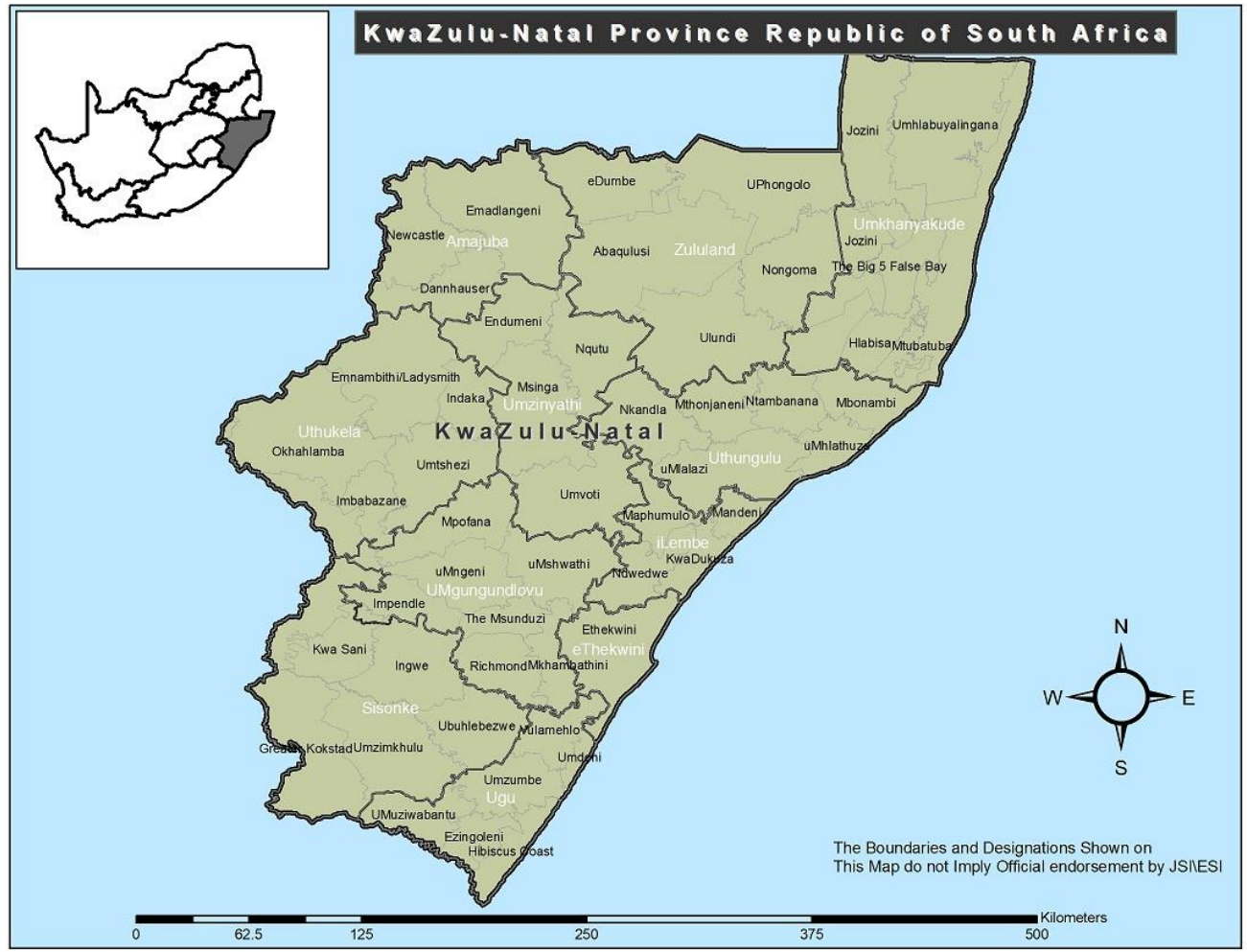
Transnational Education

- The lack of attention to educational detail **allows misalignment of both programme outcomes and curricula** (Lindely, 2013; Smith & Khawaja, 2011;)
- The problems associated with **learning in different languages** are also underestimated (Leask, 2009).
- Internationally it has been shown that the **performance of returning transnational students is problematic** (Fritz, Chin, & DeMarinis, 2008; Kwon, 2009; O'Reilly, Ryan, & Hickey, 2010; Sawir, Marginson, Nyland, Ramia, & Rawlings-Sanaei, 2009; Smith & Khawaja, 2011; Yen & Stevens, 2004

The Cuban curriculum

- is designed to graduate a "*basic general doctor after six years, who will staff a family doctor's office while pursuing a residency (specialist training) in comprehensive general medicine (family medicine).*"[13]

13. Suarez IDRM, Sacasas JF & Garcia Fd. Cuban medical education: aiming for the six star doctor. *Medic Review* 2011;10(4):6.


KwaZulu-Natal Province Republic of South Africa
Jozini
Umhlabuyalingana
eDumbe
UPhongolo
Emadlangeni
Umkhanyakude
Newcastle
Amajuba
Abaqulusi
Zululand
Jozini
Nongoma
The Big 5 False Bay
Dannhauser
Endumeni
Ulundi
Hlabisa
Mtubatuba
Nqutu
Emnambithi/Ladysmith
Msinga
Indaka
Umzinyathi
Nkandla
Mthonjaneni
Ntambanana
Mbonambi
Uthukela
KwaZulu-Natal
uMhlathuze
Okhahlamba
Uthungulu
Umtshezi
uMlalazi
Umvoti
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Kwa Sani
Ingwe
Richmond
Mkhambathini
Sisonke
Ubuhlebezwe
Vulamehlo
Greater Kokstad
Umzimkhulu
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Umzumbe
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Kilometers
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62.5
125
250
375
500


CRANSTON
FINE ARTS

British medical education model

as it used to be

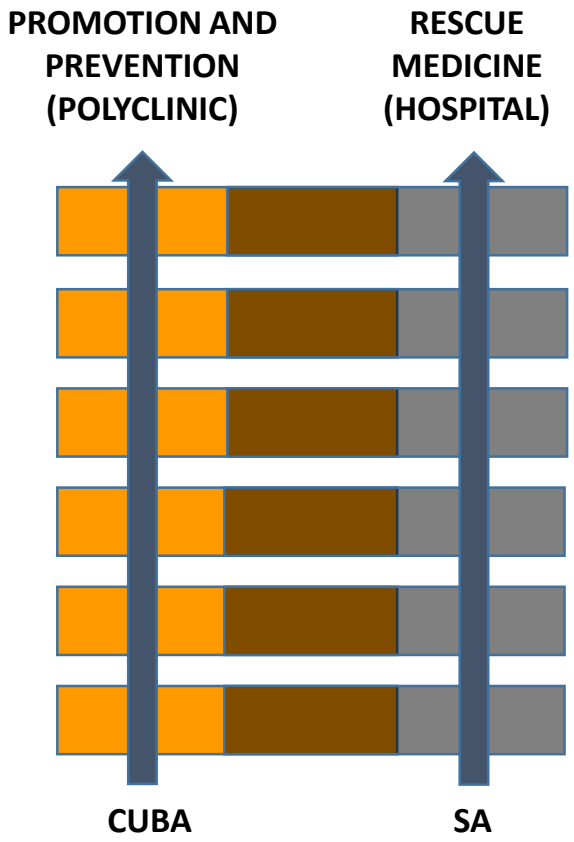
Infused with something of the

Frontier spirit

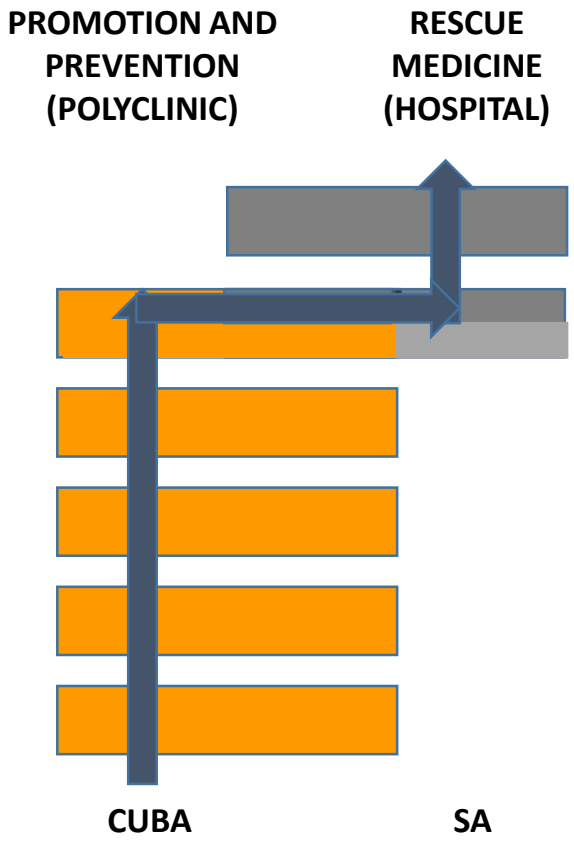
The South African curriculum

- The junior doctor in South Africa is expected to possess the skills required to manage in-patients in a district hospital
    - in South Africa is defined as a hospital dealing with primary care patients
    - that is those who may be managed by a generalist medical officer rather than a specialist.
    - includes **practical obstetrics, general anaesthesia, operative surgery and the diagnosis and management of life-threatening acute disease**.

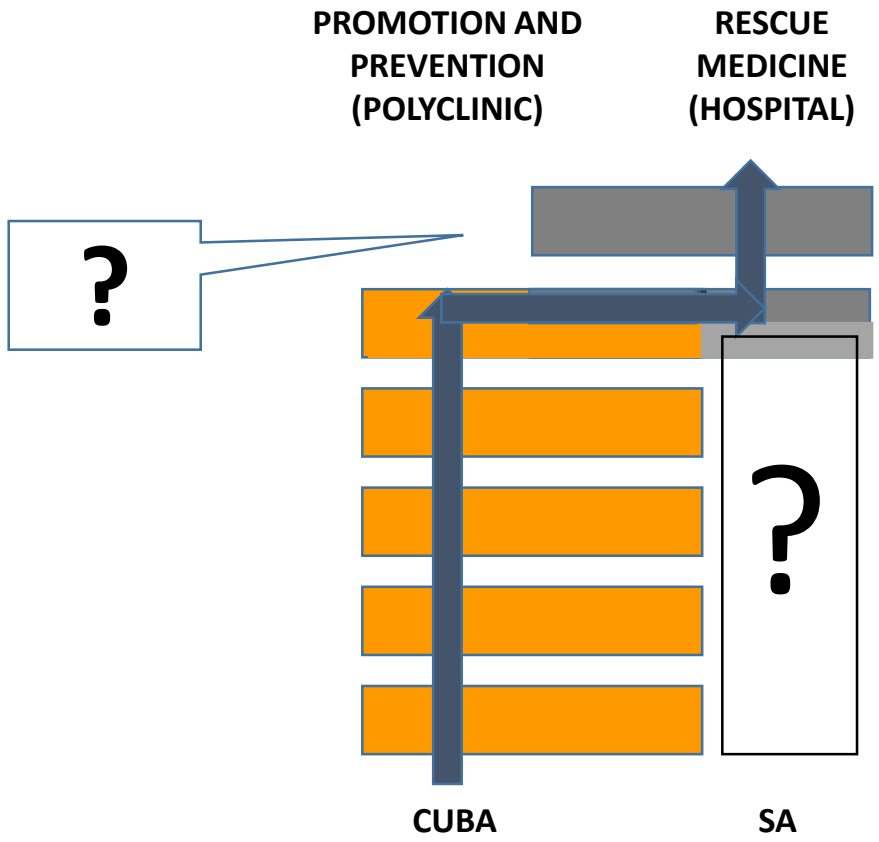
Parallel Paths to Graduation



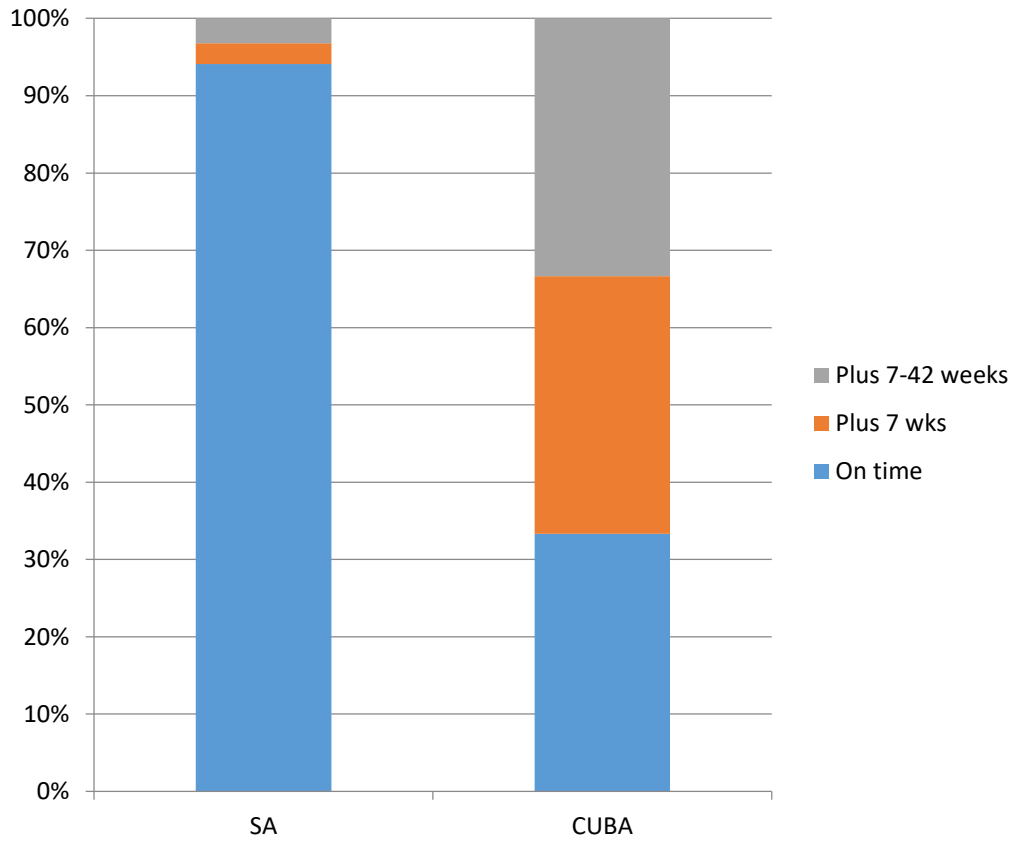
NMFCMC Students: Path to Graduation

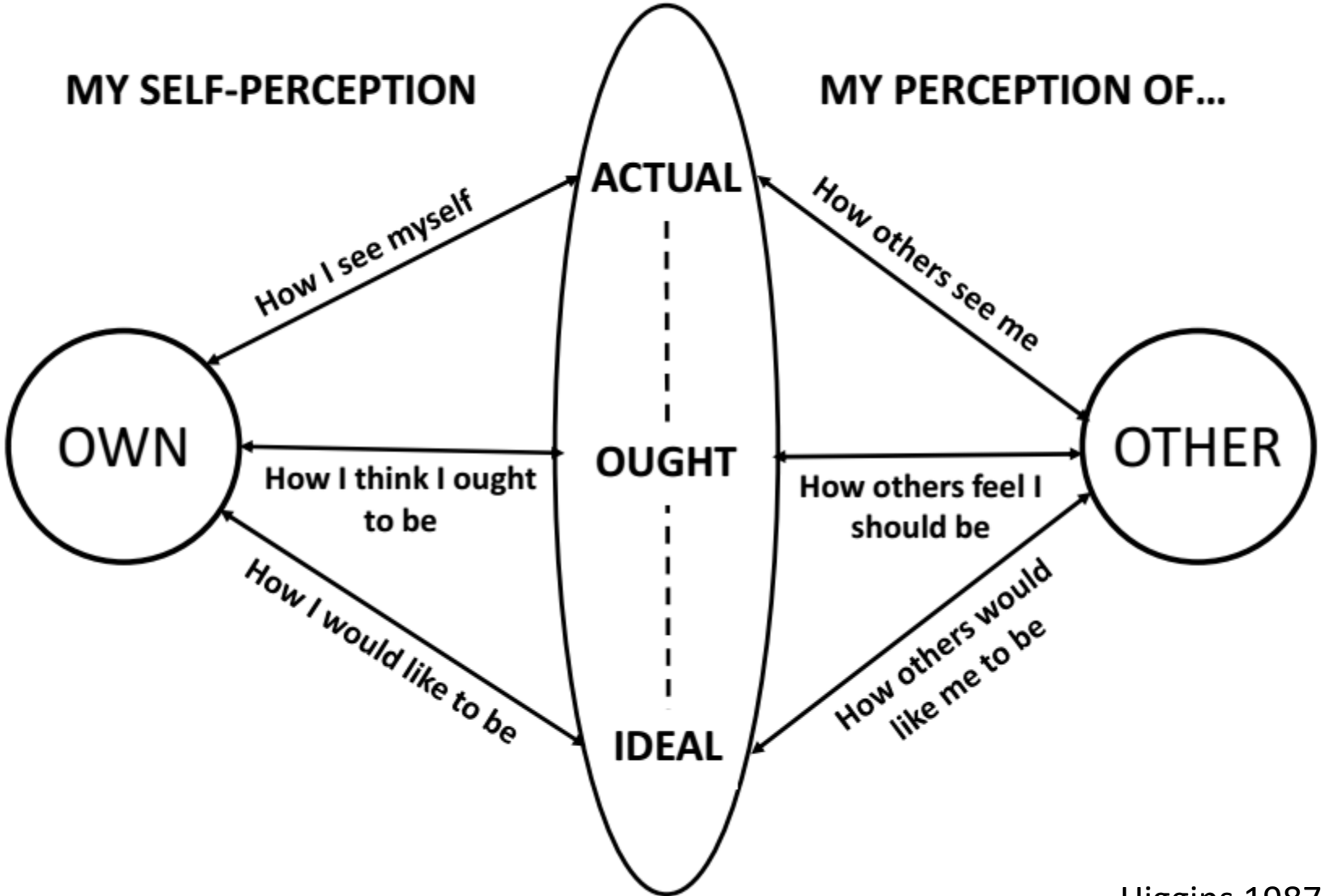


NMFCMC Students: Path to Graduation



Our experience





Higgins 1987

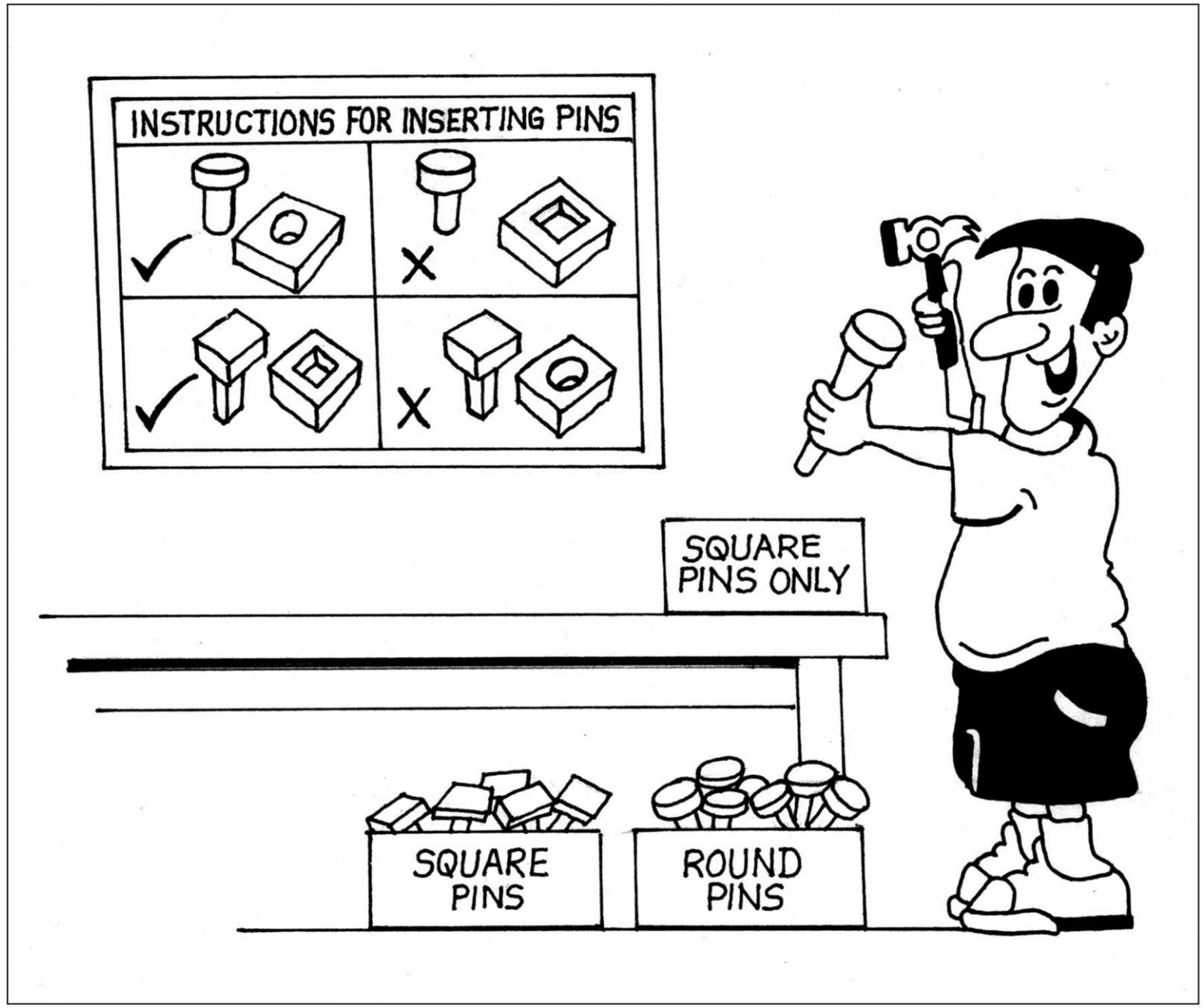
(Actual/own) I am a South African student, born and bred in and committed to South Africa.

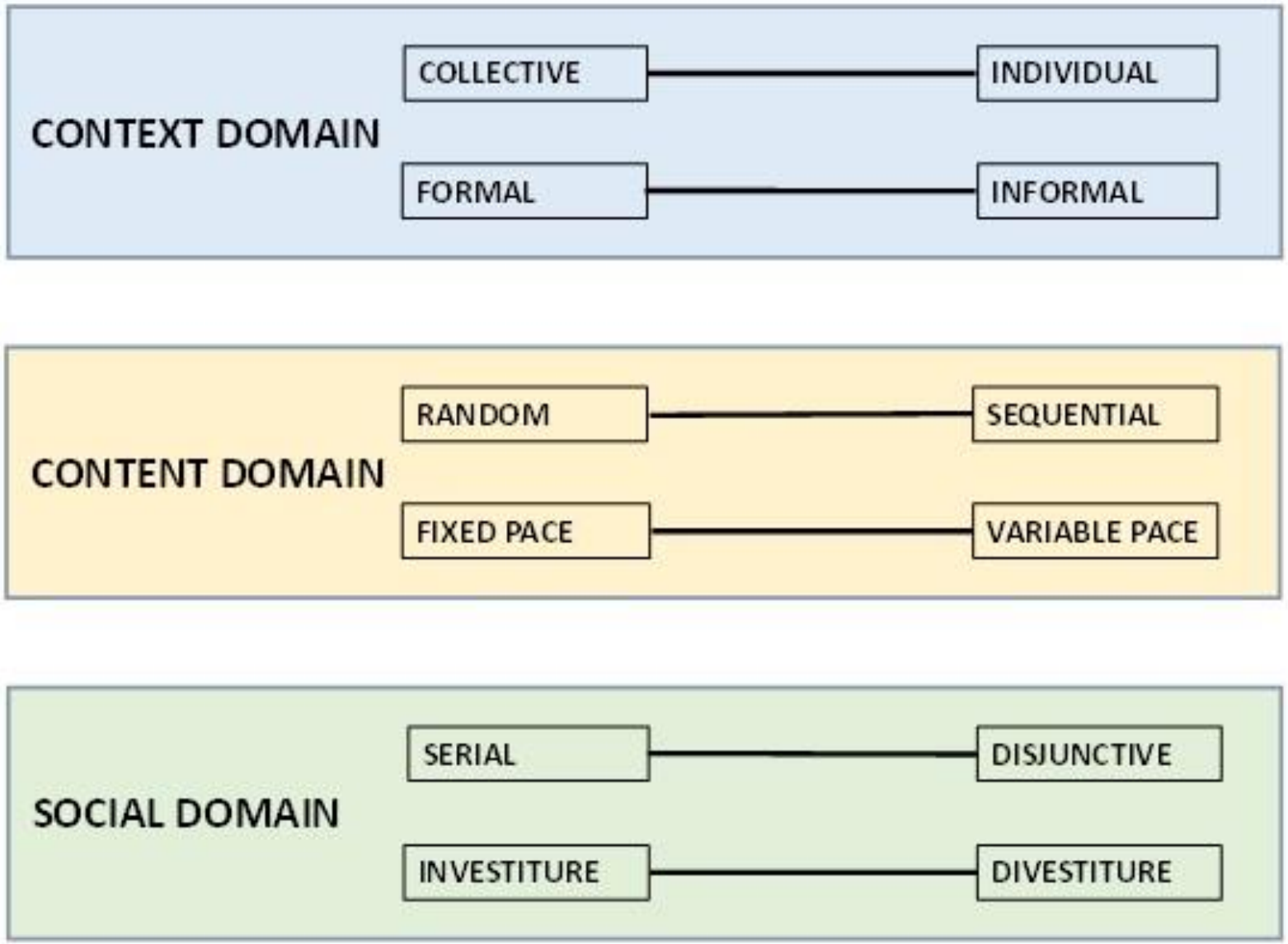
(Actual/other) My colleagues and teachers all refer to me as a “Cuban” student.

Consequence: Therefore I am no longer sure who I am, but I am obviously seen as something other than South African by my peers and teachers.

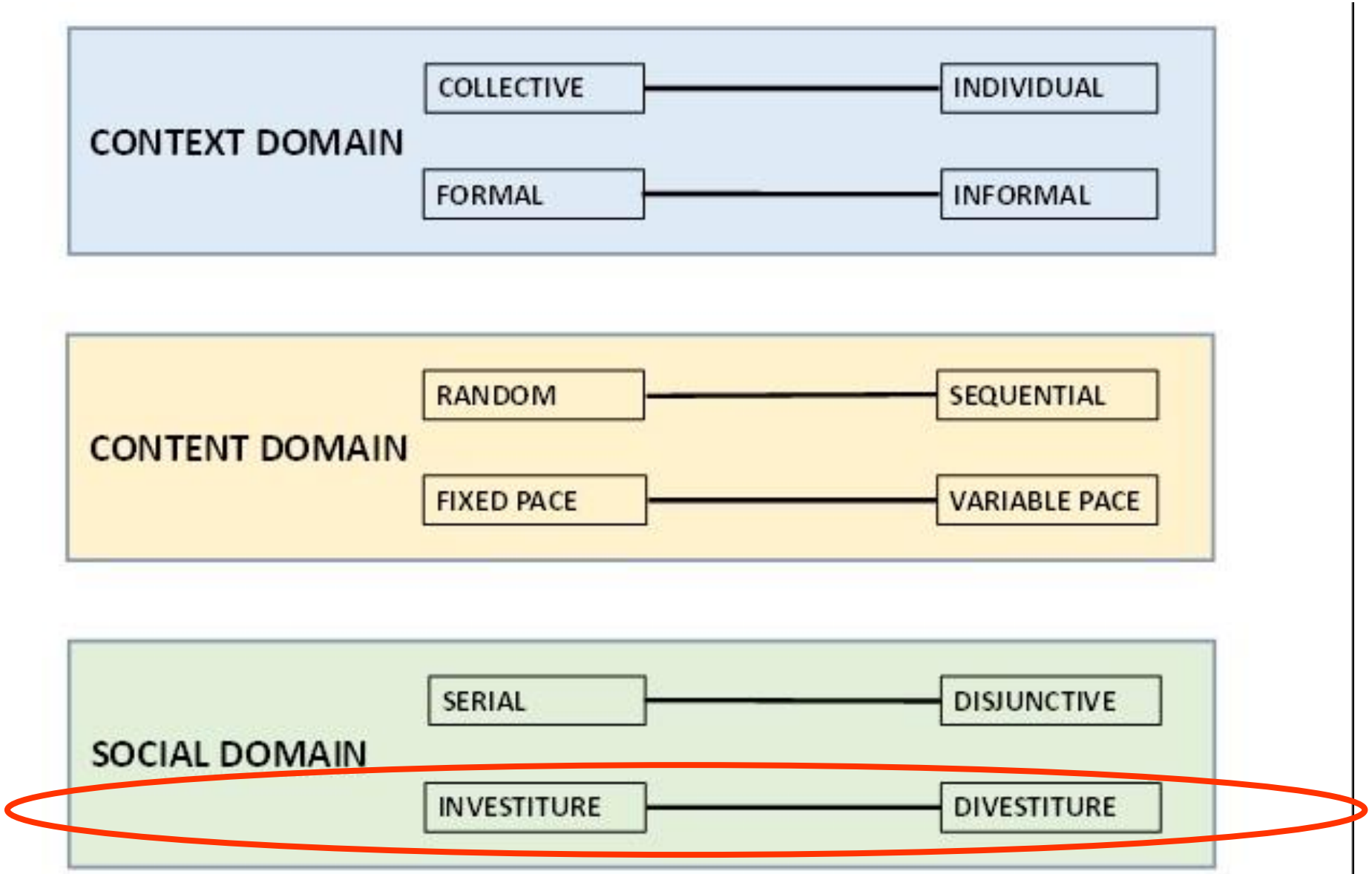
How to respond?

A lack of critical discourse…


INSTRUCTIONS FOR INSERTING PINS
SQUARE PINS ONLY
SQUARE PINS
ROUND PINS



Van Maanen & Schein (1975


CONTEXT DOMAIN
COLLECTIVE
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VARIABLE PACE
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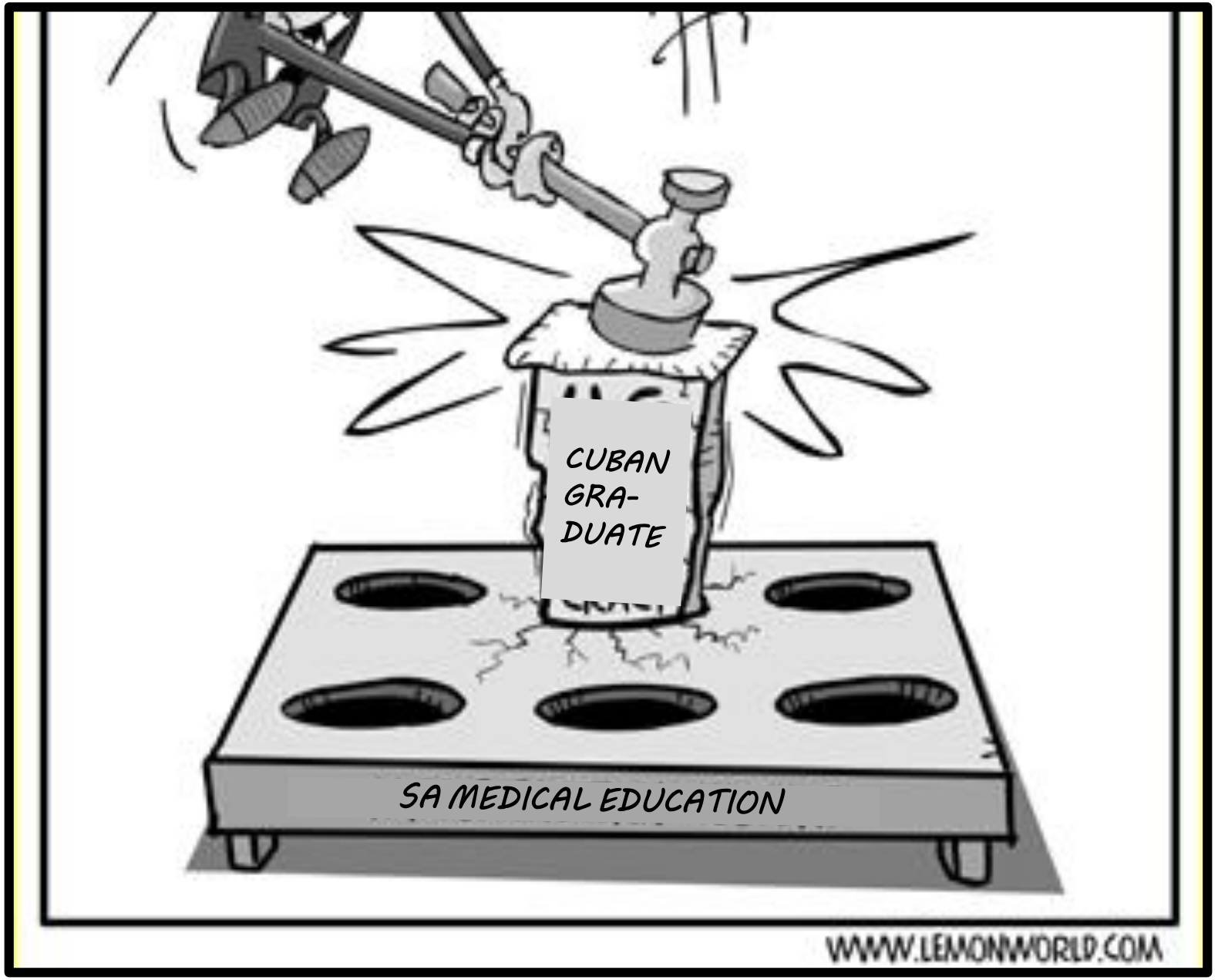
SERIAL
DISJUNCTIVE
INVESTITURE
DIVESTITURE

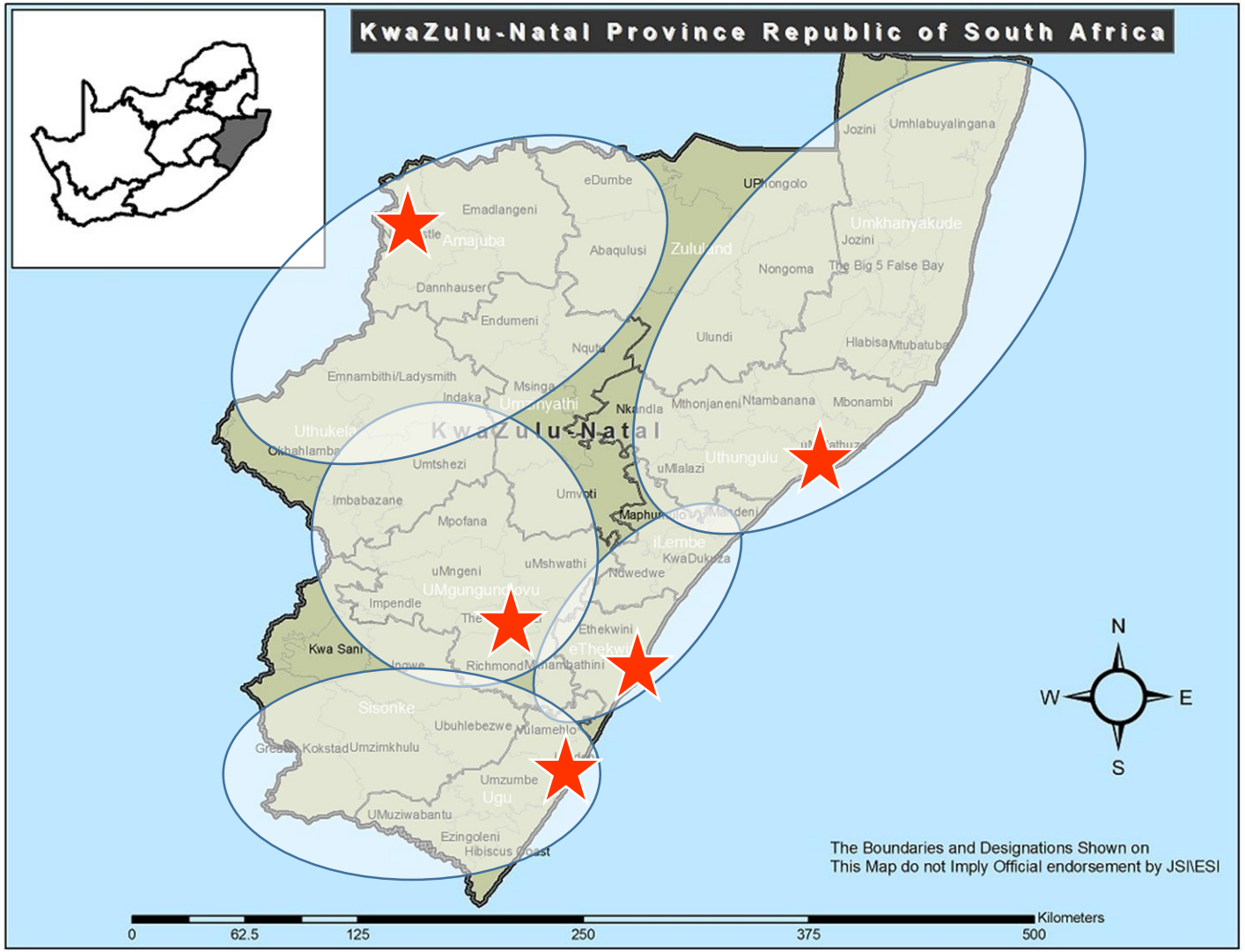

CUBAN GRA-DUATE
SA MEDICAL EDUCATION
WWW.LEMONWORLD.COM

- The difficulty lies not so much in developing new ideas as in escaping from old ones.

John Maynard Keynes

The three big challenges for 2018

- Numbers
  - Expand the human resources for health
- Fitness-for-purpose
  - Train students in the “real” environment they are needed
- Make a real commitment to the PHC ideal
  - Move beyond urban, big hospital, specialist-led and rescue-orientated training


KwaZulu-Natal Province Republic of South Africa
Jozini
Umhlabuyalingana
eDumbe
UPhongolo
Emadlangeni
Amajuba
Abaqulusi
Zululand
Umkhanyakude
Jozini
Nongoma
The Big 5 False Bay
Dannhauser
Endumeni
Ulundi
Hlabisa
Mtubatuba
Nquthu
Emnambithi/Ladysmith
Msinga
Indaka
Umtshyathi
Nkandla
Mthonjaneni
Ntambanana
Mbonambi
Uthukela
KwaZulu-Natal
Okhahlamba
Umtshezi
Uthungulu
uMlalazi
Imbabazane
Umvoti
Mpofana
Maphumulo
Mandeni
iLembe
KwaDukuza
uMshwathi
Ndwedwe
uMngeni
UMgungundlovu
Impendle
Ethekwini
Kwa Sani
Richmond
Mpumalanga
Sisonke
Ubuhlebezwe
Kokstad
Umzimkhulu
Umzumbe
Ugu
UMuziwabantu
Ezingoleni
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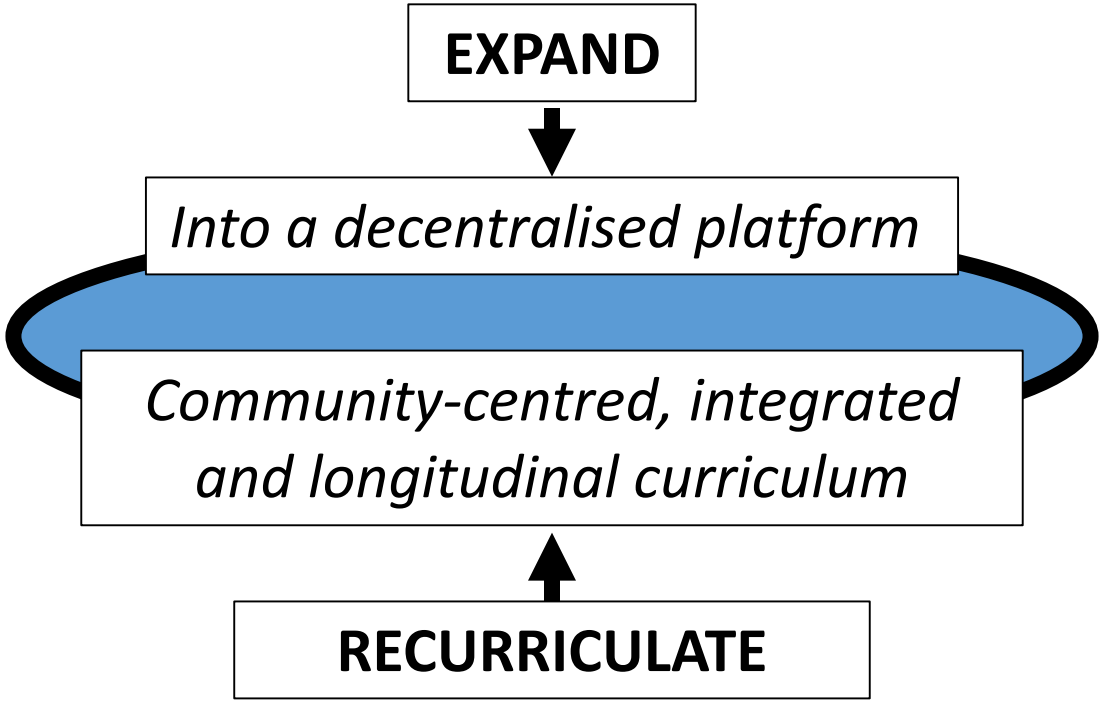
The Boundaries and Designations Shown on
This Map do not Imply Official endorsement by JSI\ESI
Kilometers
0
62.5
125
250
375
500

A dual approach to expansion



The plan therefore seeks to:

1. **Numbers**
   - Increase numbers trained
2. **Distribution**
   - Move a significant proportion of training outside the major centres
3. **Redirection**
   - Devolve a much higher percentage of training to smaller regional hospitals, district hospitals and community health facilities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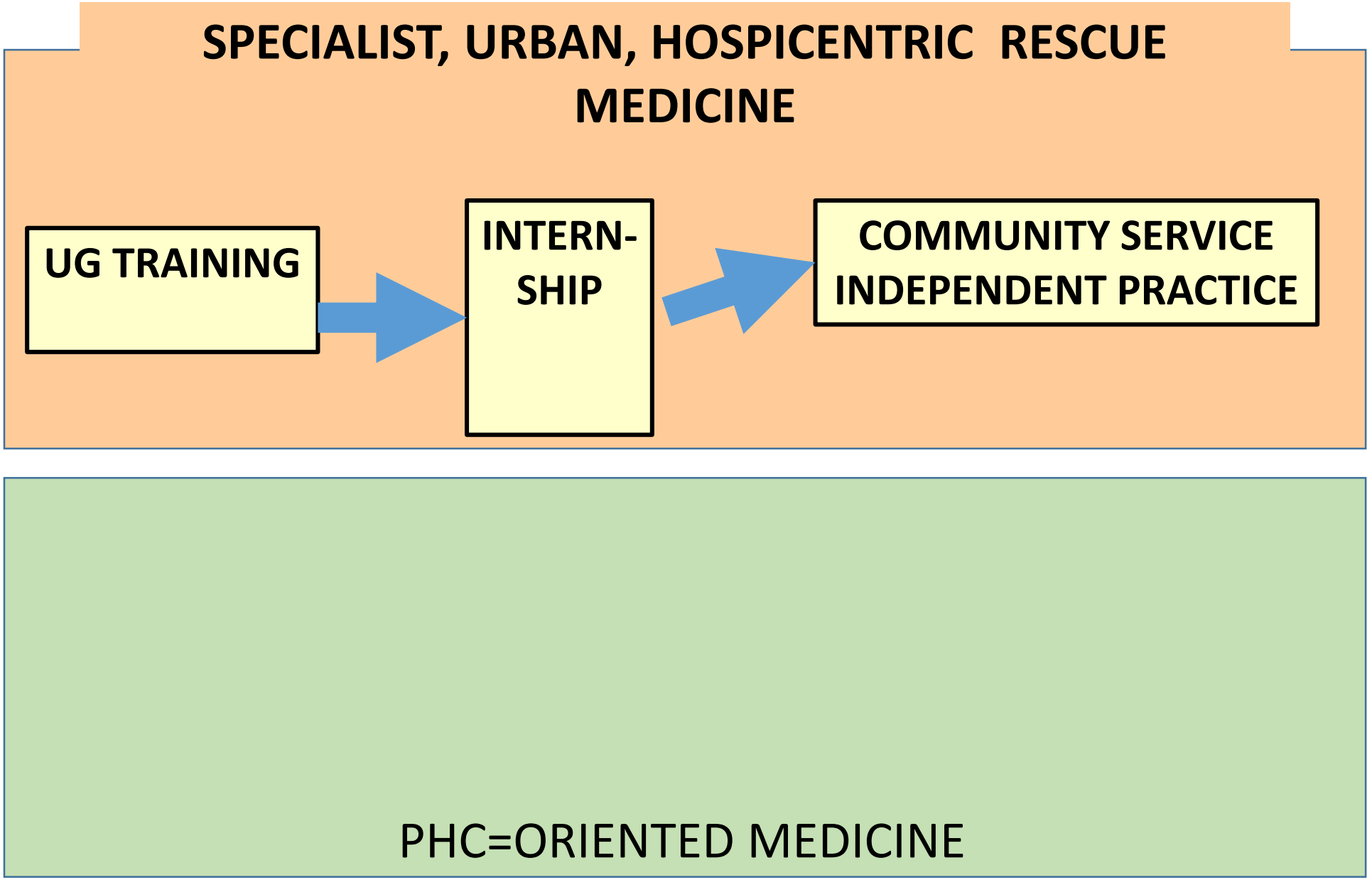
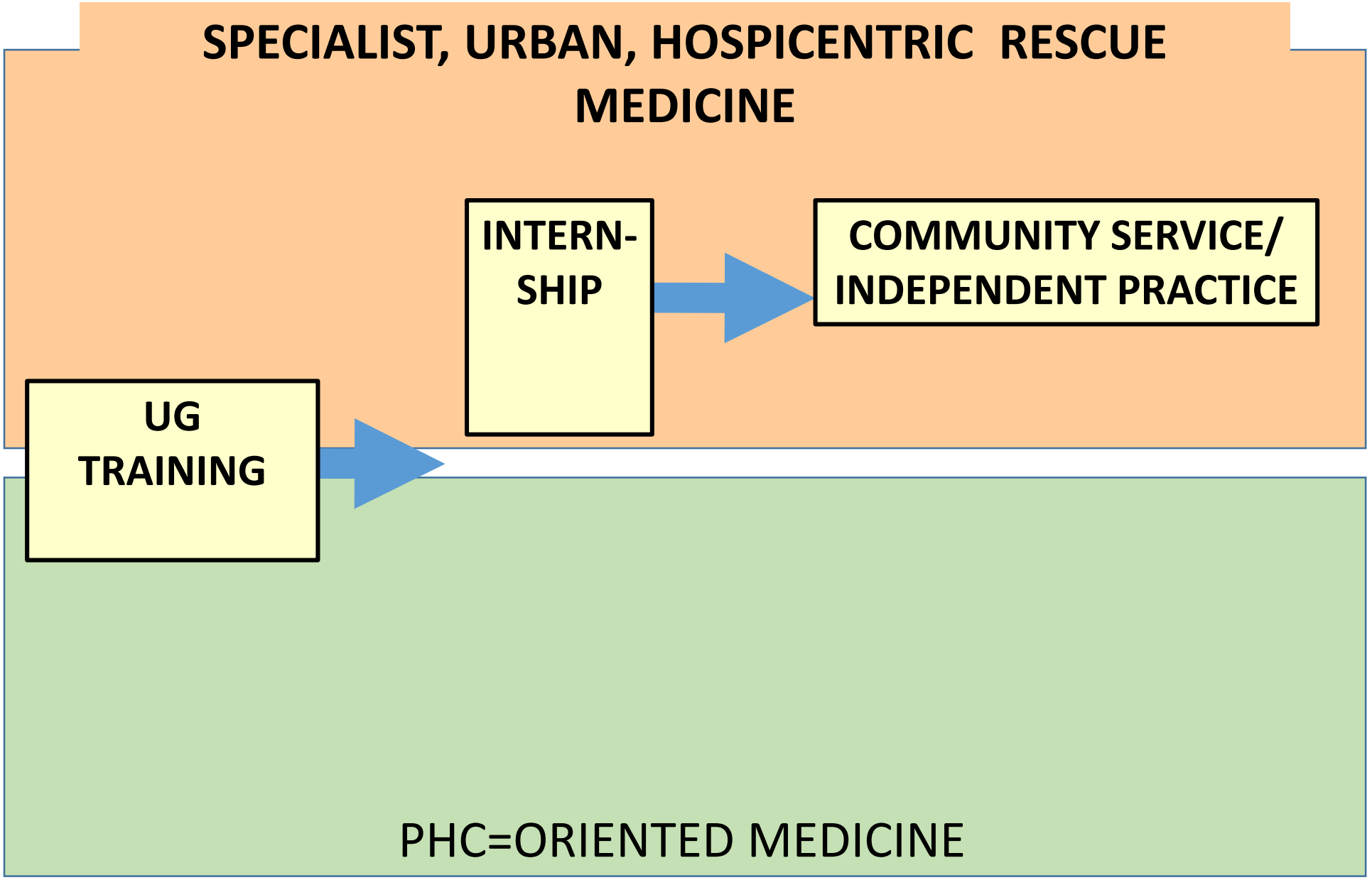
.com
Search ID: tmen44
RAMON WAS A POLISHED PERFORMER, BUT THIS WAS MADNESS... A SQUARE PEG IN A ROUND HOLE, UNASSISTED, AND BLINDFOLDED!!


SPECIALIST, URBAN, HOSPICENTRIC RESCUE MEDICINE
UG TRAINING
INTERN-SHIP
COMMUNITY SERVICE INDEPENDENT PRACTICE
PHC=ORIENTED MEDICINE


SPECIALIST, URBAN, HOSPICENTRIC RESCUE MEDICINE
INTERN-SHIP
COMMUNITY SERVICE/ INDEPENDENT PRACTICE
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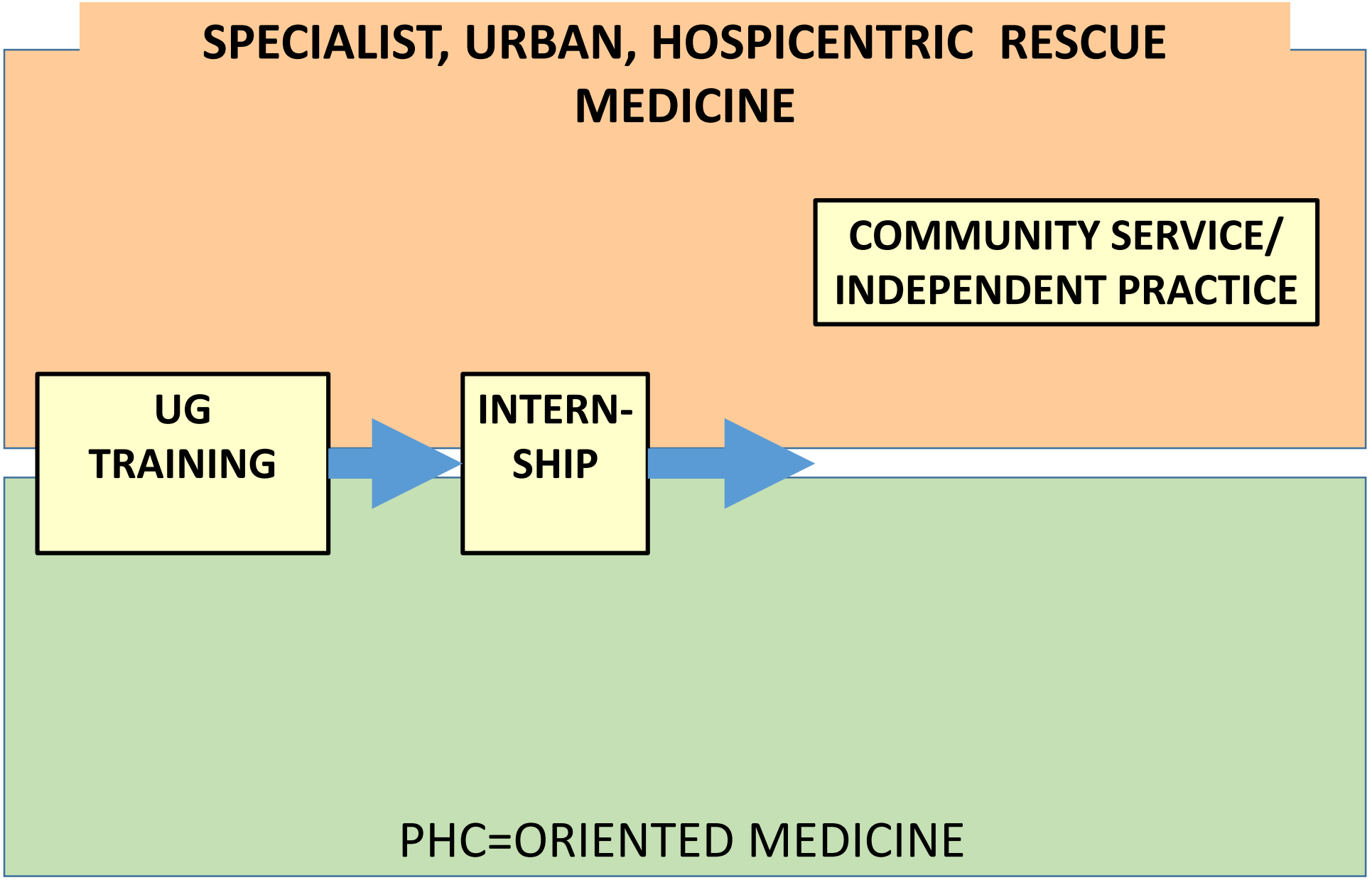
SPECIALIST, URBAN, HOSPICENTRIC RESCUE MEDICINE
COMMUNITY SERVICE/ INDEPENDENT PRACTICE
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INTERN-SHIP
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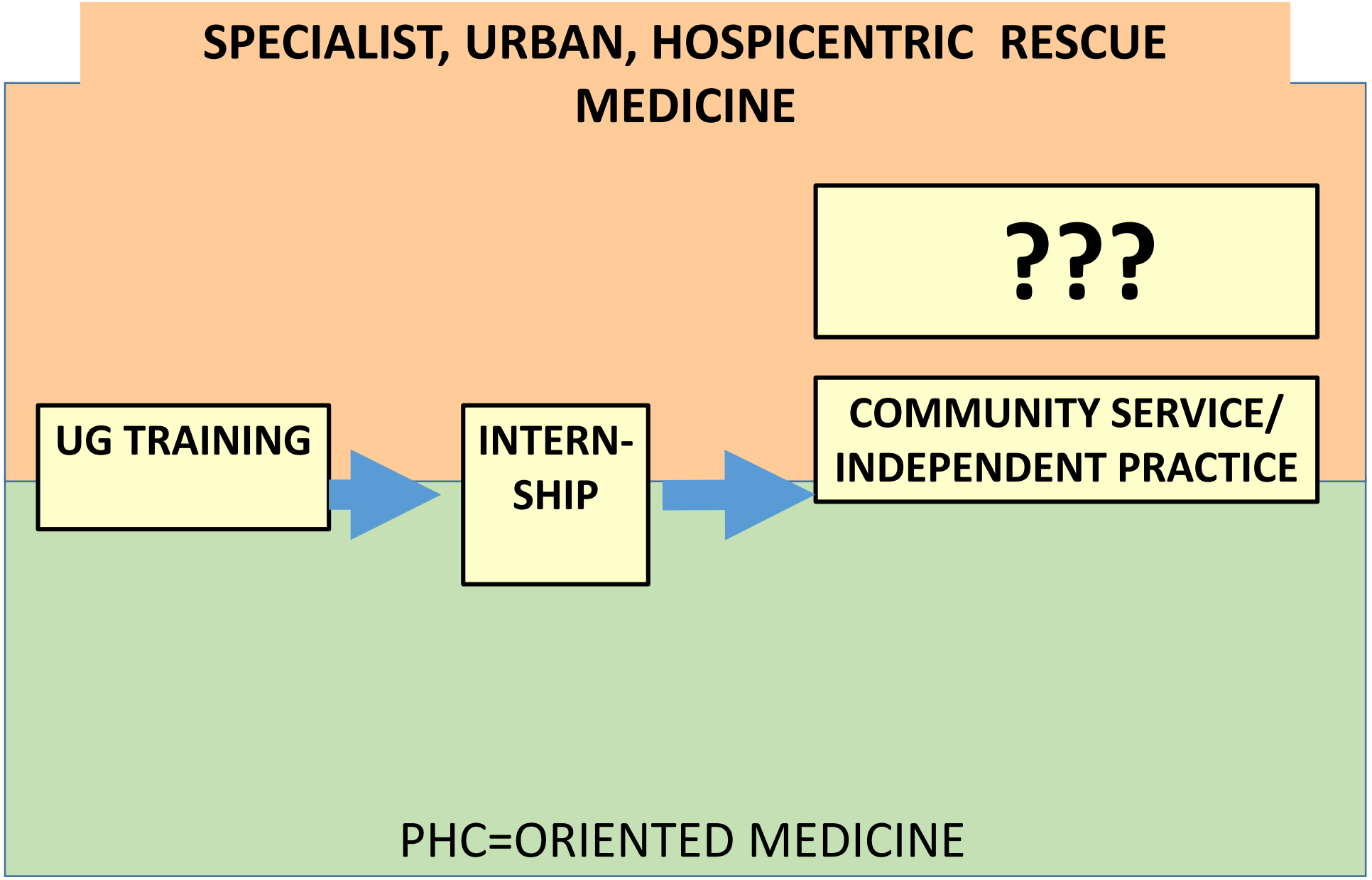
SPECIALIST, URBAN, HOSPICENTRIC RESCUE MEDICINE
???
UG TRAINING
INTERN-SHIP
COMMUNITY SERVICE/ INDEPENDENT PRACTICE
PHC=ORIENTED MEDICINE

Challenges

- Disruptive innovation
  - UG, internship, health system
  - Numerous stakeholders
- Brakes imposed by a constitutional democracy
- Relative powerlessness of Family Medicine advocates within Schools
- Inertia and conservatism
- Hidden curriculum

The hidden curriculum

"I'm right there in the room, and no one even acknowledges me."

Conclusion

What appears to be at first sight a simple matter of reintegrating a numberof suth African students trained abroad has ….

…morphed into a *crisis of opportunity* requring revolutionary change in meical education, internship and the way health is delivered to our population.

END