



Harvard Medical International

August 22, 2006



HARVARD MEDICAL
INTERNATIONAL

Background



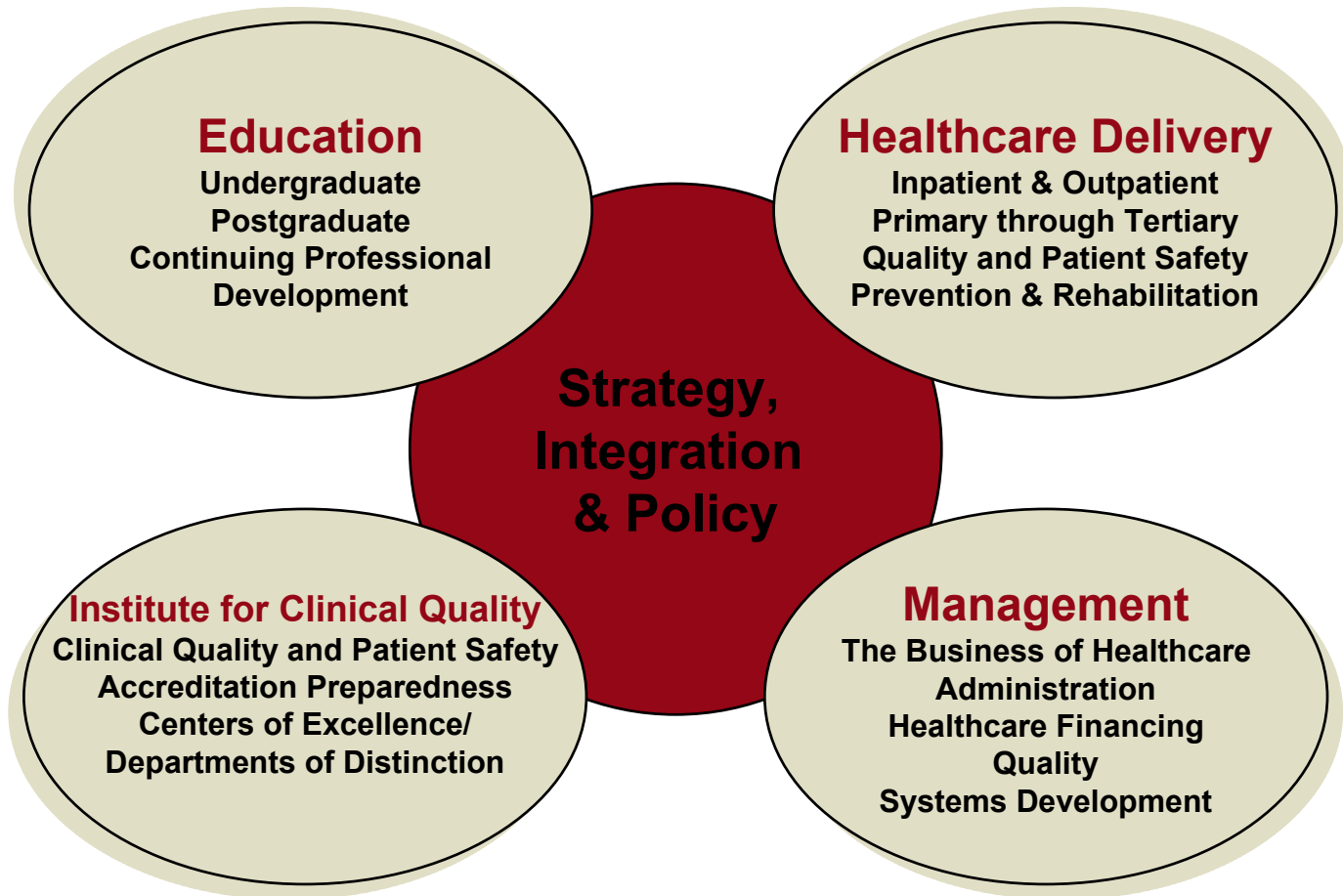
- Established 1994
- Non-profit subsidiary, self-supporting corporation of Harvard University
 - Interlocking board with Harvard Medical School and Harvard University
- 40 Programs in 30 Countries
- 55 Staff
- Commitment to infrastructure building and long-term partnerships

Guiding Philosophy



■ **Every** citizen of the world should have easy access to **quality health care** of a world standard

HMI's Programs





Developing Health Care Interventions and Intervention Science in Emerging Economies

August 22, 2006



Our Approach

Innovative Clinical and Education Programs

- Based on assessment of local needs and priorities
- Focused on the needs of patients
- Driven by 'best practices' and global trends
- Supported by appropriate technologies
- Strengthened by on-going education and training
- Built around critical business elements
- Analysis of structures, processes, outcomes

Strategic Planning

The Impact of Global Trends

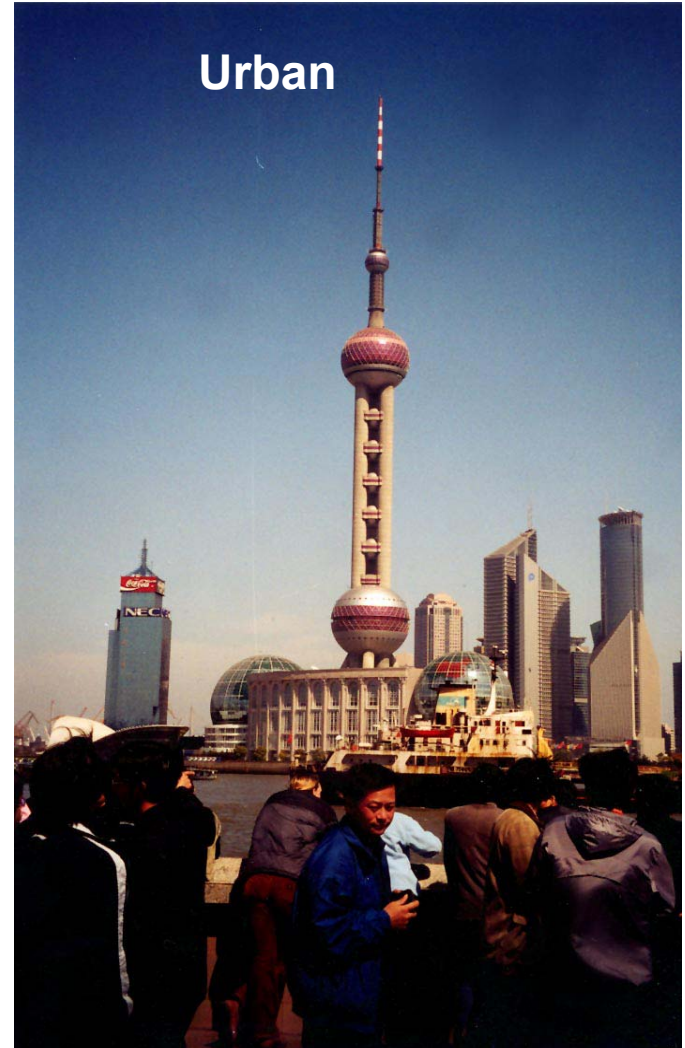
- A Changing World
- Quality and Patient Safety benchmarks and Accreditation
- Average length of stay
- Growth in outpatient care/emphasis on prevention
- Private sector investment
- Long term care/assisted living

A Changing World: Economic Development is not Uniform

Rural

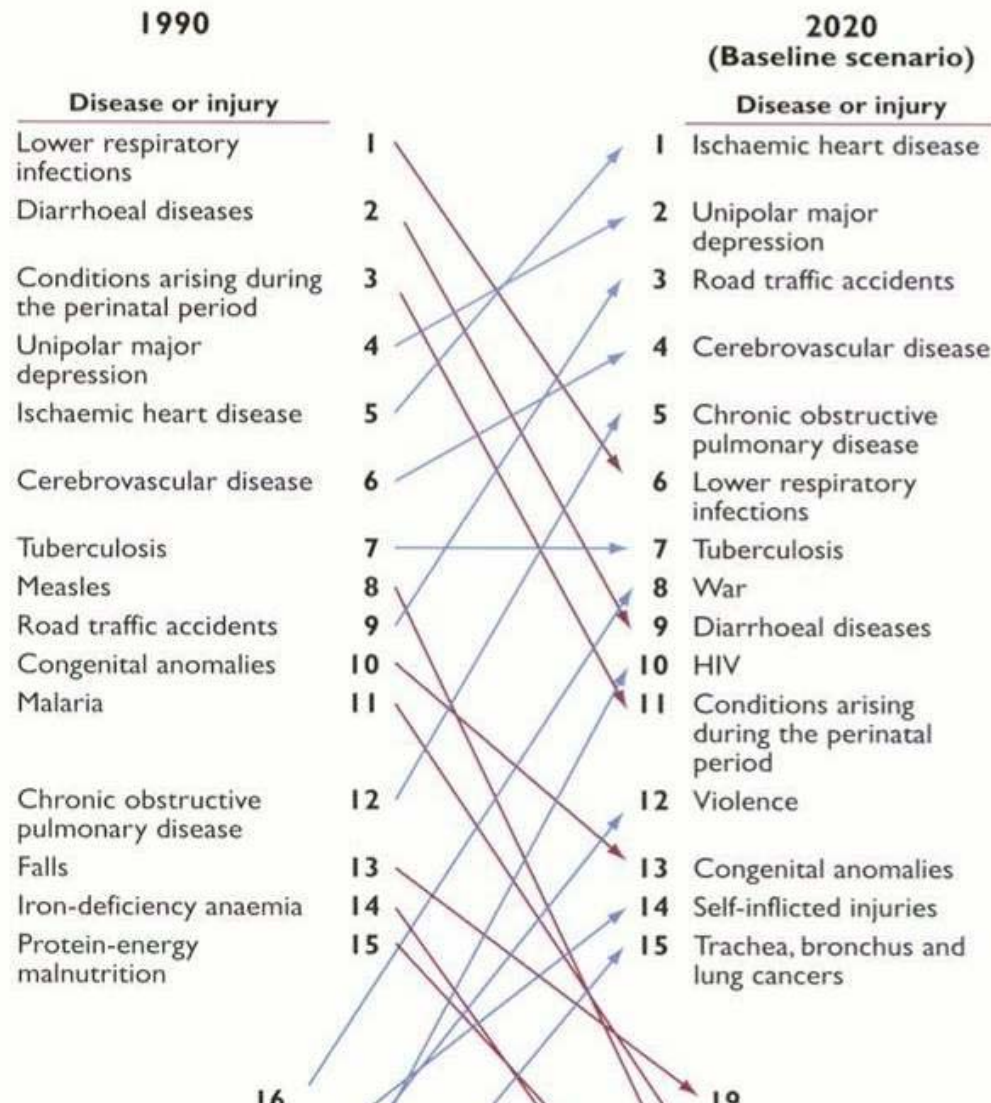


Urban



**It is easier to build skyscrapers
than a healthcare system**

Changing Global Burden of Disease



Economic Development: One size Doesn't Fit All

5%

Least Developed

Afghanistan-Angola-Bangladesh
Benin-Bhutan-Burkina Faso-
Burundi-Cambodia-Cape Verde-
Central African Republic-Chad-
Comoros-Congo-Timor-Djibouti-
Equatorial-Guinea-Eritrea-Ethiopia
Gambia-Guinea-Guinea-Bissau-
Haiti-Kiribati-Lao Peoples -Lesotho
Liberia-Madagascar-Malawi-
Maldives-Mauritania-Mozambique-
Myanmar-Mali-Nepal-Niger-
Rwanda-Samoa-Sao Tome-
Senegal-Sierra Leone
Solomon Islands-Somalia-
Sudan-Togo-Tuvalu-Uganda
Tanzania-Vanuatu-Yemen-Zambia-
Zimbabwe

(0.9 Billion)

92%

Emerging Economies

111 Countries

India
China
South America
Central America
Gulf States
Middle East
SE Asia
Indonesia
Pakistan
Russia
Central Asia
North Africa

(4.5 Billion)

3%

OECD Countries

AUSTRALIA -AUSTRIA
BELGIUM -CANADA
CZECH REPUBLIC
DENMARK -FINLAND
FRANCE-GERMANY
GREECE-HUNGARY
ICELAND-IRELAND
ITALY-JAPAN
KOREA-LUXEMBOURG
MEXICO-NETHERLANDS
NEW ZEALAND-NORWAY
POLAND-PORTUGAL
SLOVAK REPUBLIC
SPAIN-SWEDEN
SWITZERLAND-TURKEY
UNITED KINGDOM
UNITED STATES

(1.1 Billion)

Economic Development: Health Interventions

Least Developed

Emerging Economies

OECD Countries

Developmental Interventions

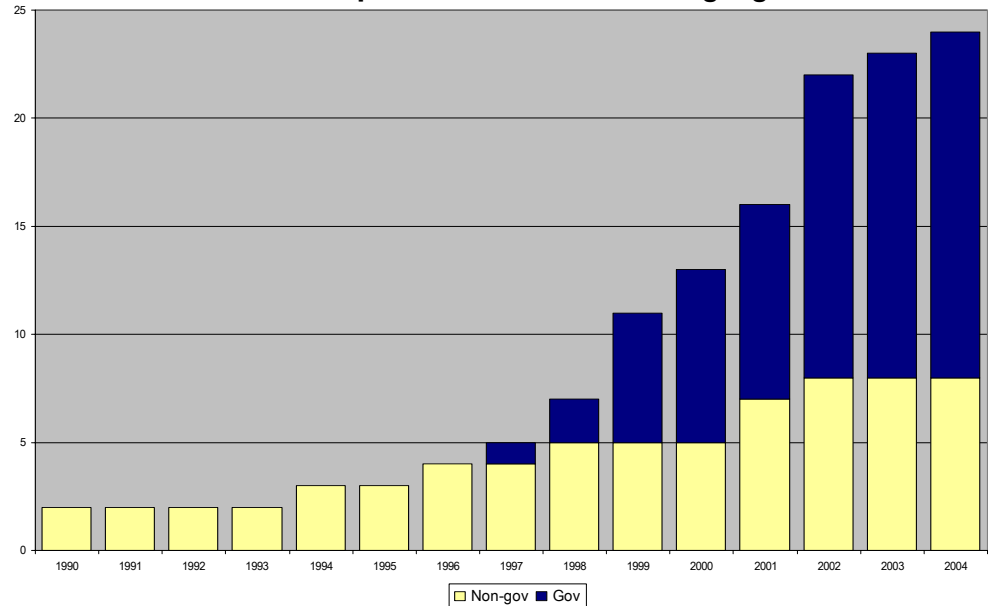
- Sanitation
 - Basic Maternal & Child Health
 - Diarrhea Control
 - Nutrition Programs
 - Acute Respiratory Disease
 - Infectious Diseases Eradication
 - Malaria, TB, HIV
 - Public Health Education
 - Community Worker Education
 - Micro-Finance programs
- Organized primary care
 - Referral and Tertiary care
 - Health care delivery systems
 - Disease prevention programs
 - Enhanced clinical quality
 - International hospital accreditation
 - Enhancing nursing professional development
 - Emergence of the private sector
 - Development of insurance models
 - The role of government as regulator
 - Increasing capacity and quality in medical education
 - Seat belt laws, etc
- Policy and Systems evaluation and reform
 - Development of clinical centers of excellence
 - Development of networks
 - Clinical
 - Educational
 - Research
 - Public health
 - Quality/Accreditation
 - Development of HMO's and networks of care
 - Insurance Reforms
 - Provider Reforms (NHS)
 - Seat belt laws, etc

Establishing Quality Benchmarks is a Growth Requirement: What Next?

JCI Accredited Hospitals

| | 2000 | 2006 |
|---------------|----------|-----------|
| Africa | 0 | 1 |
| Asia | 0 | 19 |
| Europe | 2 | 40 |
| Middle East | 1 | 7 |
| South America | 0 | 4 |
| Total | 3 | 71 |

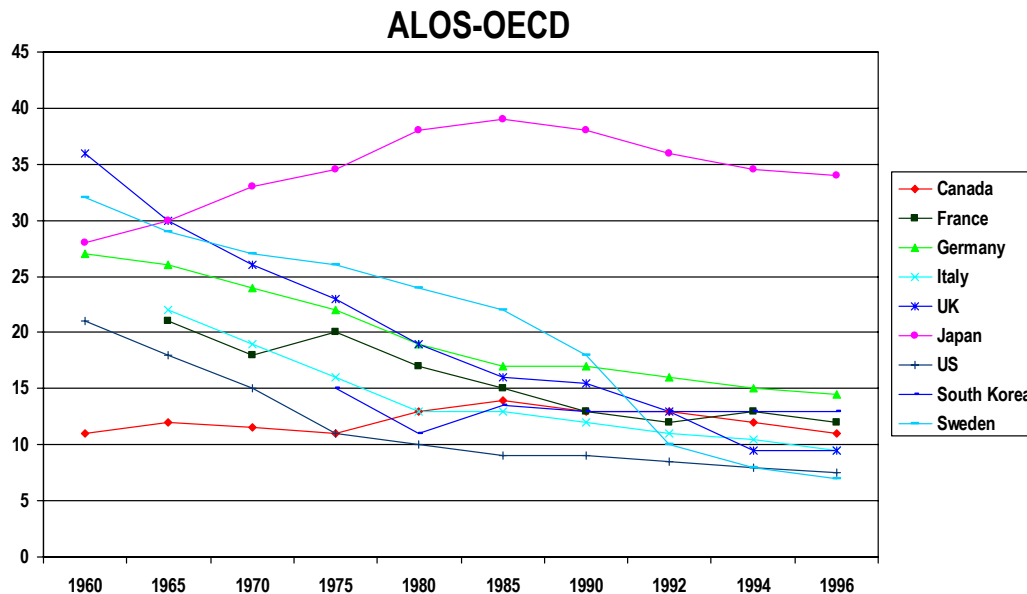
Growth in Europe across all Accrediting Agencies



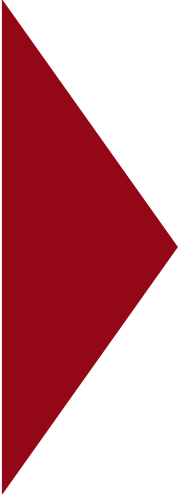
Impact

- Success for any new investors will depend on proving “quality”
- Hospitals with international accreditation will dominate the marketplace
- Payors will align with accredited operators
- Cohort of potential local players / investors will be limited
- Need to evaluate and compare outcomes with respect to international data

Increasing Focus on Outpatient Care: Dropping ALOS



Source: "Hospital Reports" for Japan. "OECD Health Data 98" for other nations.

- 
- Payor based pressures
 - New technologies
 - Patient preference



Impact

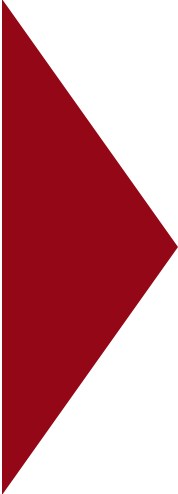
- Focus on procedure throughput based care models versus bed driven models
- Outpatient care provision models growing
- Specialty clusters that drive throughput will win

Falling Public Sector Funding, Increased Private Investments

Public Sector Funding

| | 1980 | 2000 | Drop |
|-------------|------|------|-------|
| UK | 89.4 | 80.9 | -8.5 |
| Ireland | 82.2 | 73.3 | -8.9 |
| New Zealand | 83.6 | 78.0 | -5.6 |
| Greece | 82.2 | 56.1 | -16.1 |
| Switzerland | 67.5 | 55.0 | -11.9 |

Source: AMA / Team analysis

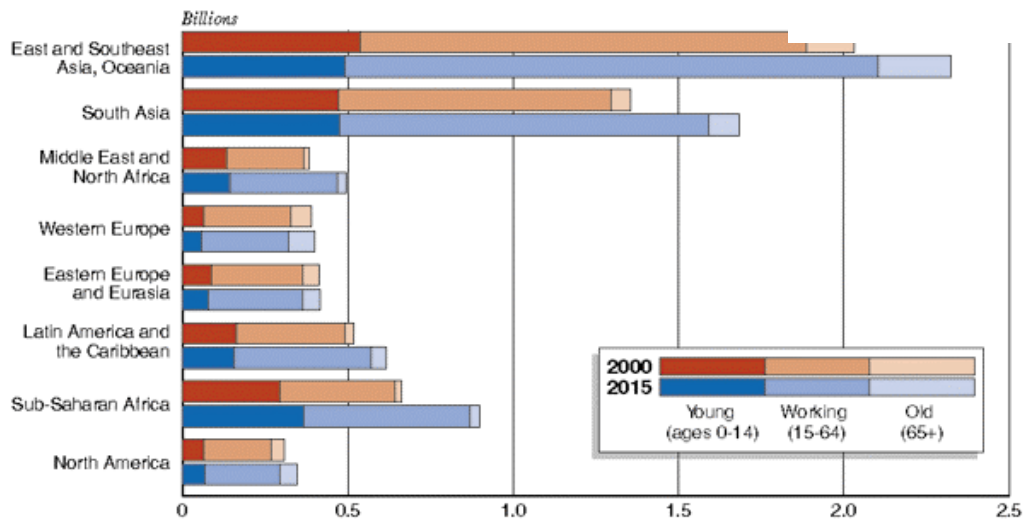
- 
- Most governments reducing their healthcare spending
 - Private investments growing in healthcare delivery
 - Much deregulations occurring in certain countries like the NHS in the UK

Impact

- Global investment opportunities available for international investors in healthcare
- International hospital operators and funding agencies moving to the most attractive markets
- Government must consider ways to cover risk for the poor or lower income earners

Growth of Supportive Healthcare Programs: Assisted Living

Regional Population by Age Group: 2000 and 2015



Source: US Bureau of the Census

- Lifestyle options
- Affiliated on-site medical services
- Wellness programs
- Concierge services
- Dine in / dine out
- Estate settings
- Transportation
- Hotel amenities
- Leisure facilities

Impact

- Global investment opportunities available for international investors in healthcare

Developing Health Care Systems

- Strategic Planning
- Clinical Program Planning
- Facilities & Capital Equipment Planning
- Technology & Systems Development
- Professional Staff Development
- Quality Management
- Network Development



Mumbai



Shanghai

Bangkok

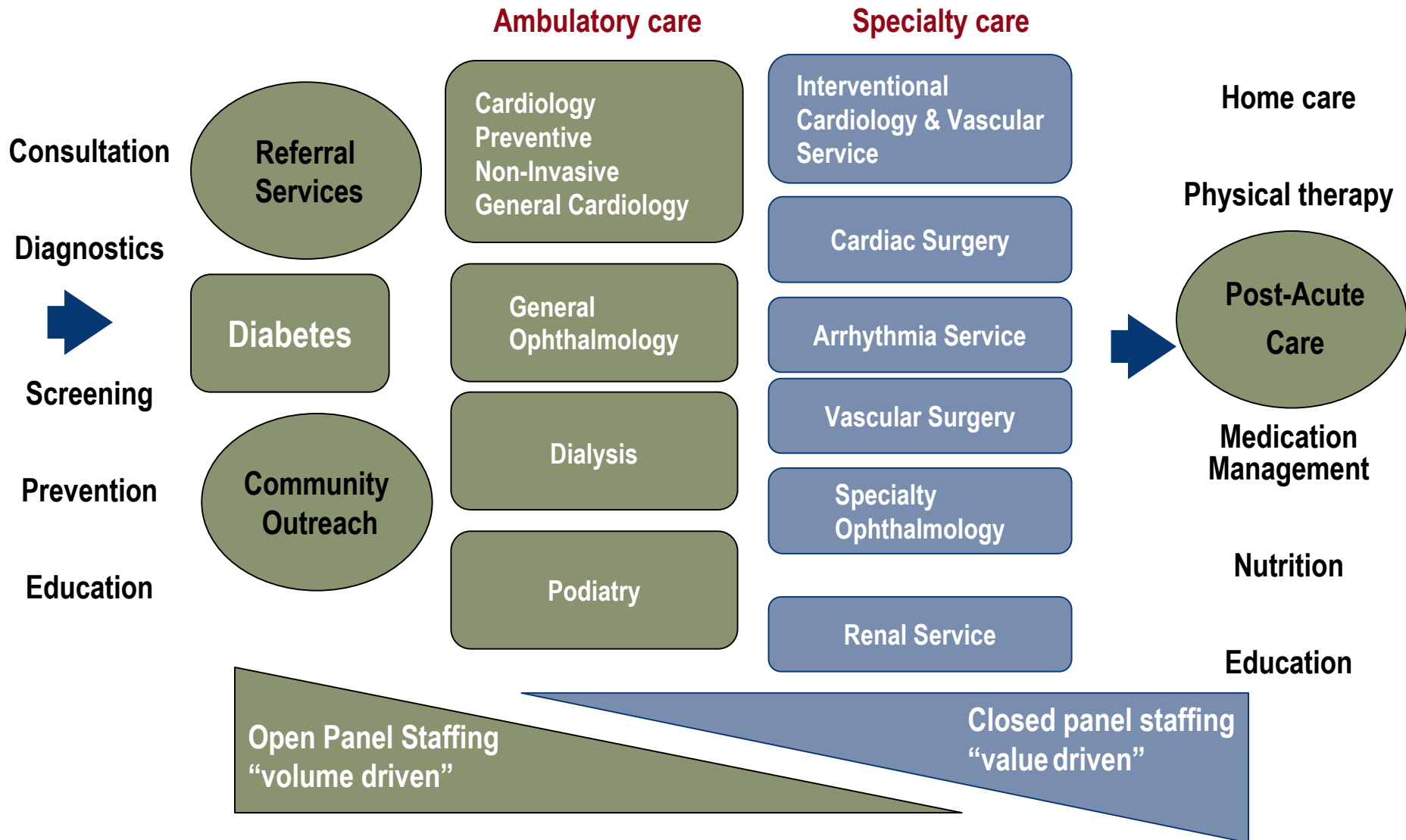


Shanghai



Istanbul

Clinical Program Planning: Driving Volume and Capturing Value



HMI Facilities Planning

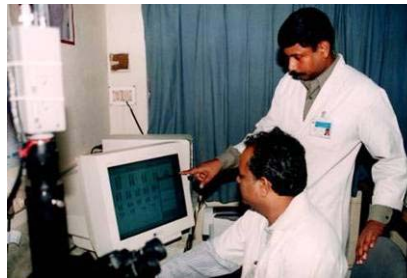
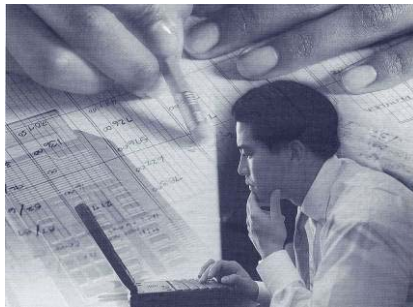
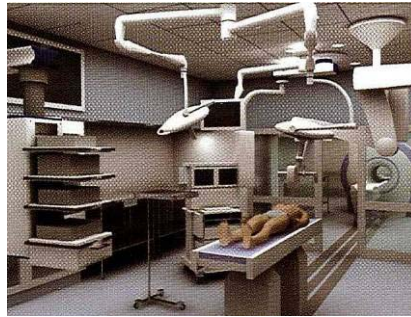
Integrated Planning in support of...

- Clinical excellence
- Patient focused care
- Operational efficiency
- Changing technologies
- Future flexibility
- Enhanced brand image



HMI Technology and Systems Development

**System-wide
Strategy
Focused
on...**



- Appropriate technology
- Maximizing purchasing power
- Integrating information systems

Building the Health Care Team

Critical to the future of health care is the development of teams of highly educated and motivated professionals with systems and facilities to support them

- Administrators
- Physicians
- Nurses
- Allied health professionals
- Health educators
- Public health professionals
- Research professionals



Committed to Excellence

Medical Staff Development

Keys to Success:



- Enlist leading physicians
- Ensure good communication
 - Full time staff
 - Referral physicians
- Continuing Education Programs
- Affiliate with referring physicians
 - Associated staff
 - Benefits of participation

Nursing Development

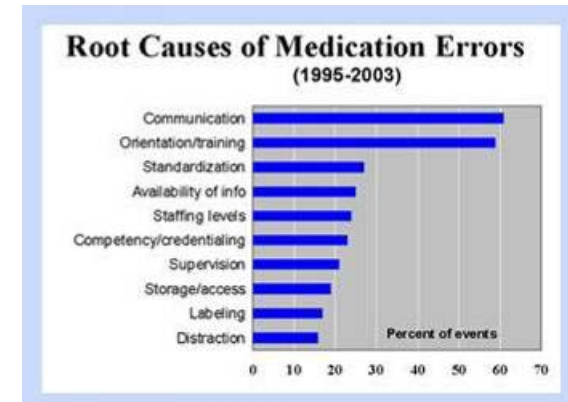


- Global shortage
- Increased demands on staff
- Rapidly changing technology
- Evolving management practices
- Fiscal responsibility
- Demand for higher quality

Nursing Professional Development

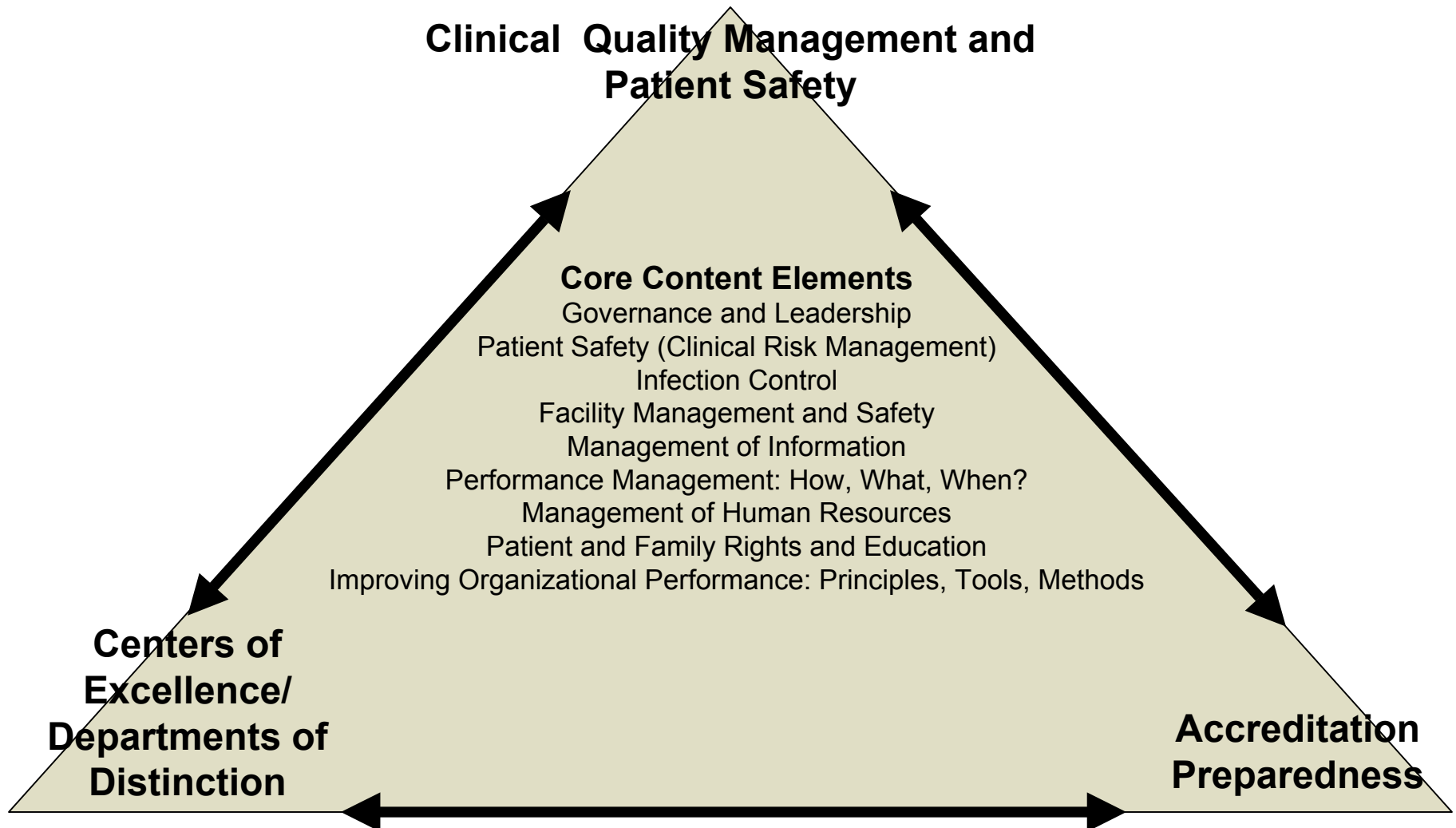


HMI Quality Management



- Creation of a “Quality Culture”
- On-going critical review of all aspects of care (RCA)
- Identification of problems before they occur (FMEA)

HMI Center for Clinical Quality: Pyramid of Healthcare Quality and Patient Safety Interventions



Two Cases:

- Wockhardt Hospitals: India
- Dubai Healthcare City: Dubai, UAE

Wockhardt Hospitals



Wockhardt: Challenge

- HMI's challenge was to work with Wockhardt and develop a clinical strategy that reflected local needs of a largely middle class population.
- Work with the Wockhardt team to consider how to build superspecialty hospitals that were able to differentiate themselves from competition in growing India private health care market.
- We worked with them on all aspects of program development including clinical planning, facilities development, nursing professional development, clinical quality management and strategic development of referral network.

Wockhardt: The Indian Context

- Growing demand for world class health services in India resulting from
 - economic expansion (8% growth in GDP),
 - the size of the market for private health care services (middle class estimated at greater than 300 million people),
 - many well trained professionals who want first class facilities to be attracted to stay and work in India
- Growing international market due to
 - growth of world class facilities
 - price competition which led to costs for major procedures being roughly 10% of what they are currently in the USA or Canada.
 - Market this year estimated at \$333 million, with projection to grow to \$1-2 billion by 2012.

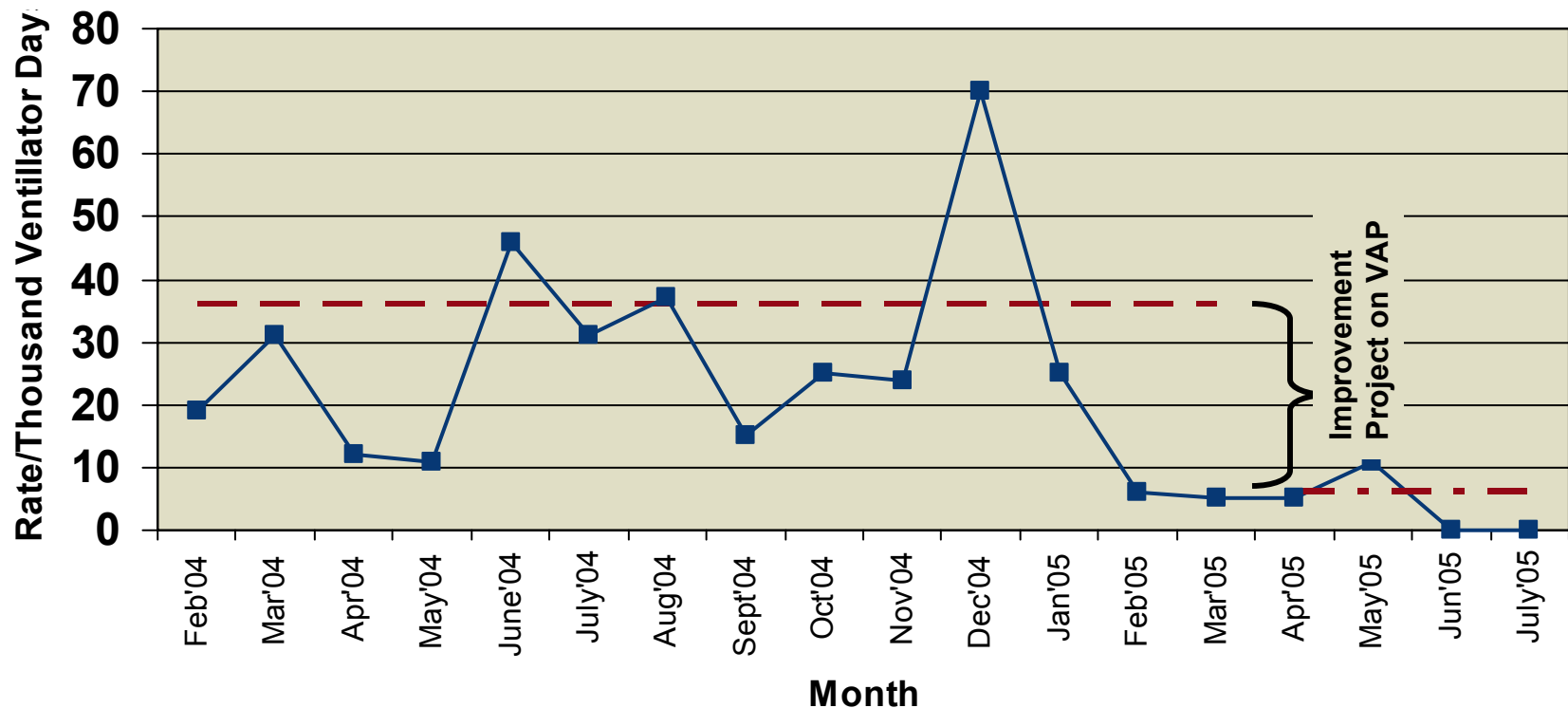
Wockhardt: Profile of a New Hospital

- First hospital at Mulund north of Mumbai inaugurated in February 2002 as super-specialty hospital.
- With smart design and consistent processes able to provide quality care at prices lower than any hospital in Mumbai metro market.
- Built surrounding referral network with local physicians and smaller diagnostic and referral units.
- Broke even financially within 18 months of opening
- Achieved Joint Commission International Accreditation in August 2005

Improved Quality of Care

VAP Reduction - Results

VAP Rate 20 04-05



Data from Wockhardt Hospital, Mulund, 2004-2005

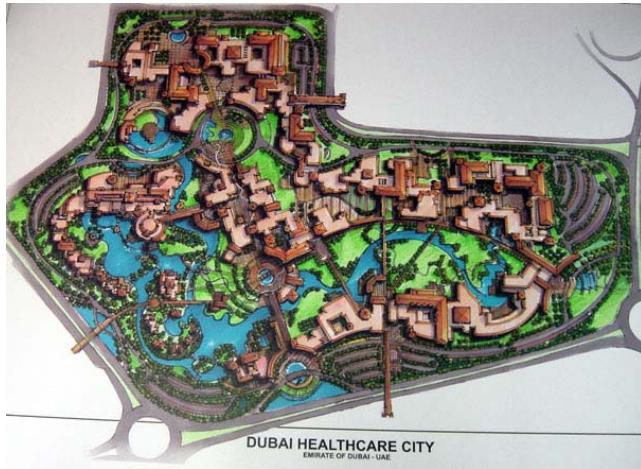


Dubai Healthcare City and Harvard Medical International



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EVOLUTION OF THE CONCEPT



Hard Infrastructure

- Land (acres)
- Roads / Utilities / Amenities
- DHCC building complexes

Soft Infrastructure

- Quality
- Clinical Master Planning
- Education
- Research
- Regional Knowledge Creation

Creating and Maintaining Clinical Excellence: The Center for Planning and Quality

Achieving a comprehensive service mix in a free market

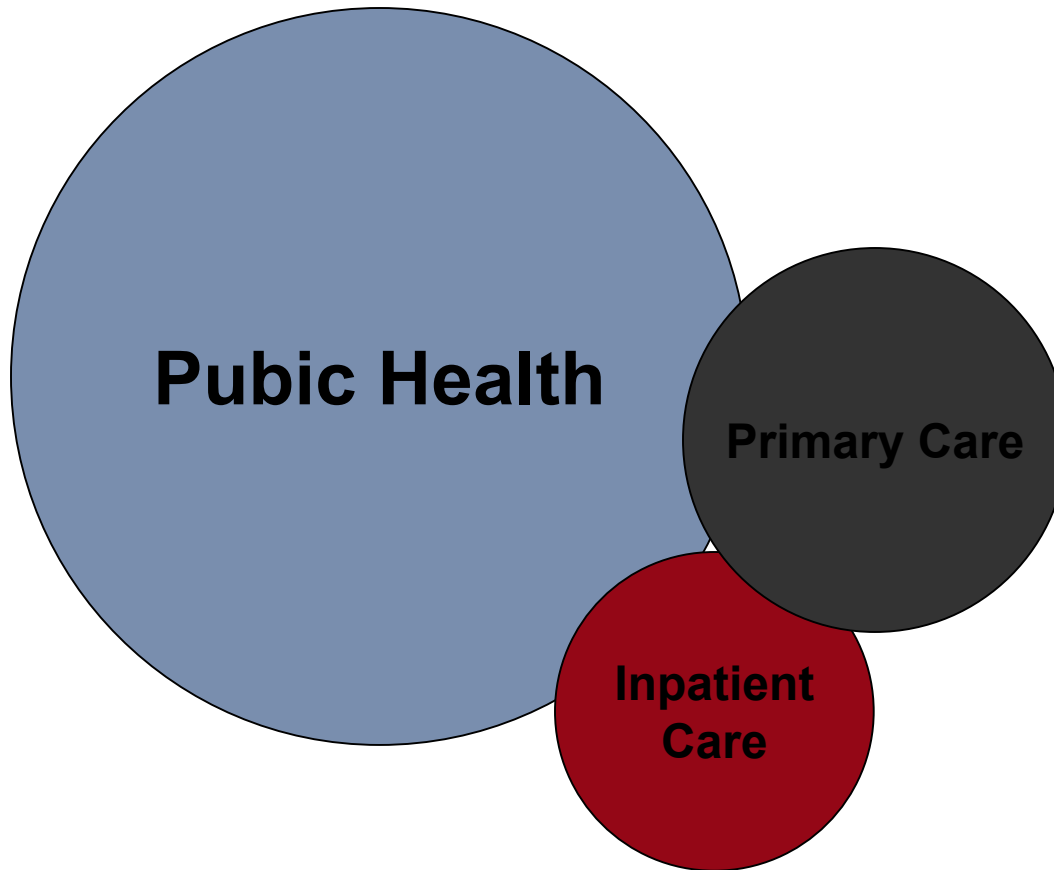


- Avoid over-subscription of high revenue generating services
 - Negative impact on quality
 - Set sales targets that reflect appropriate clinical demand
 - Assess and revise targets periodically
- Attract providers of key services less likely to produce high income
 - Identify quality providers
 - Aggressively market
 - Provide incentives

DHCC Center for Planning and Quality

- Planning for rational growth
- Credentialing providers from around the world using a blended international standard
- Licensing of facilities and providers based on experience.
- Monitoring of clinical outcomes and patient satisfaction
- Remediation of any outstanding issues

Beyond Accreditation: Interventions and Analytics to Improve Quality



Beyond Accreditation: A Balanced Global Quality Scorecard

- Public Health
 - Clean Water
 - Maternal and Perinatal Mortality
 - Immunization Rates
- Prevention/Primary Care
 - Clean water
 - Screening for Cardiovascular Disease and Cancer
 - Screening and Followup of Diabetes
- Health Care
 - Leadership and an Organizational Structure that Support Quality
 - Access
 - Hand Washing
 - Antibiotic Prophylaxis



One World; One Medicine

