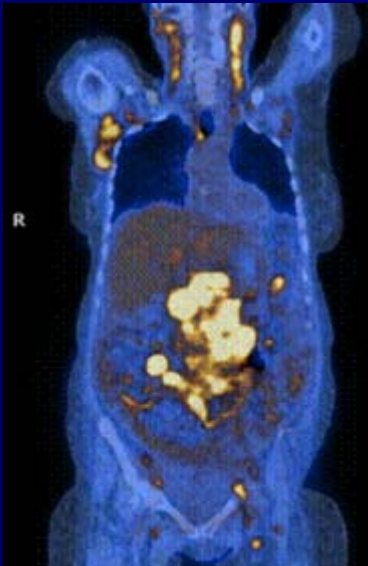


INCTR

Developing Countries



The Critical Importance of the Scientific Method

Ian Magrath, INCTR

CT/PET scan provided by Jorge Carasquillo, NCI

Importance of Research

- Essential if national priorities are to be addressed and relevant evidence lacking
- Leads to a more analytical and disciplined approach to all aspects of health care
- Will allow advantage to be taken of unique scientific opportunities
- Will lessen dependence of developing countries on high income countries – and lead to sustainable progress

What is the Relevant Evidence Base?

- High income countries address issues of importance to high income countries!
- Populations in low and middle income countries differ markedly (poverty, literacy, genetics (risk factors for disease subtype and outcome), pharmacogenetics environment (hygiene), infectious burden and type of infections)
- Diseases may differ (infectious etiology, genetic abnormalities and pathological subtypes)

What is the Relevant Evidence Base?

- Staging approaches may differ (higher disease stage may be missed)
- Supportive care may be less than optimal (access to emergency care, antibiotics, blood transfusion practice)
- Abandonment of treatment higher and follow often sub-optimal – poor outcome measures so efficacy/toxicity taken on faith
- Survival and toxicity of same regimen may differ in different populations and environments

What is the Relevant Evidence Base?

- Do differences of a few months median survival or 5% improvement in survival identified in the USA or Europe hold true in the context of developing countries?
- If they do, what is the cost of such improvements?
- Who decides whether expensive therapies which give small benefits should be made available to patients?
 - Patients (most cannot afford such costs)
 - Oncologists
 - Government or insurance company (few insured)

Clinical “Trials” in Low RS

- Drug development (phase I studies, particularly) are not the highest priority
- Controlled or even single arm studies may be appropriate to assess treatment approaches in low resource settings
- End points may be simple – survival and toxicity, risk factors that influence therapy approach (may differ)
- May address cost-benefit issues
- Provide more disciplined care

Value of Clinical Studies

Leads to greater accountability
(monitoring, audits)

Provides new knowledge on issues of local importance

May help reduce emigration/flight to the for-profit sector

Provides a focus for training for professionals and support staff

Encourages greater communication and collaboration with national colleagues and outside experts

If multi-institutional, increases communication and results in dissemination of knowledge

Immediate clinical benefits

Increases access to *effective* care

Improved Professional Experience: Sustainability

Value of Cooperative Clinical Trials

- Improved access of patients and professionals to the local (few) and international experts:
 - Carefully designed treatment approach
 - Diagnosis and staging must be standardized
 - Supportive care must be addressed
 - Abandonment and loss to follow up must be reduced
 - May include epidemiology or molecular characterization
 - Data must be accurately collected (accountability)
- Quality higher when centers must undergo monitoring and audit (all centers must comply)
- Increased communication and hence learning among all participants (community of practice)

Benefits to All

- Translational and clinical research will be more rapidly accomplished if a larger number of patients were accessible (applies particularly to uncommon cancers or stages of cancer)
- Developing countries provide unique opportunities for understanding the pathogenesis of cancer and exploring the efficacy of low cost interventions (e.g. VIA)

Obstacles to Research in Developing Countries

- Little or no research training
 - Few available research leaders
 - Research protocols often viewed as guidelines which can be modified at will
- Limited research infrastructure
 - Concept of data quality limited
 - Critical analysis of data may leave much to be desired
- Research often considered a luxury rather than a necessity – faith-based adoption of approaches designed in high income countries
- Low salaries in government/academic sector leads to a flight to the for-profit sector or to high income countries – frequently the most talented (Yacoub!)

Obstacles to Conducting Clinical Trials in LR Settings

- Structural problems in institutions (seniority, eminence based medicine – limited professional rewards for research)
- Lack of research funding – or of investigators to apply for it
- Lack of intra- or inter- institutional will to collaborate
- Most trials that take place initiated by Big Pharma – focused on drug development

Comparison of Treatment Guidelines and Clinical Trials

Research

- Designed for a specific population in the context of available resources
- Usually entails collaboration and mutual learning
- Associated with quality assurance and ethical review
- Identifies deficiencies
- Associated with outcome measures
- Generates new information

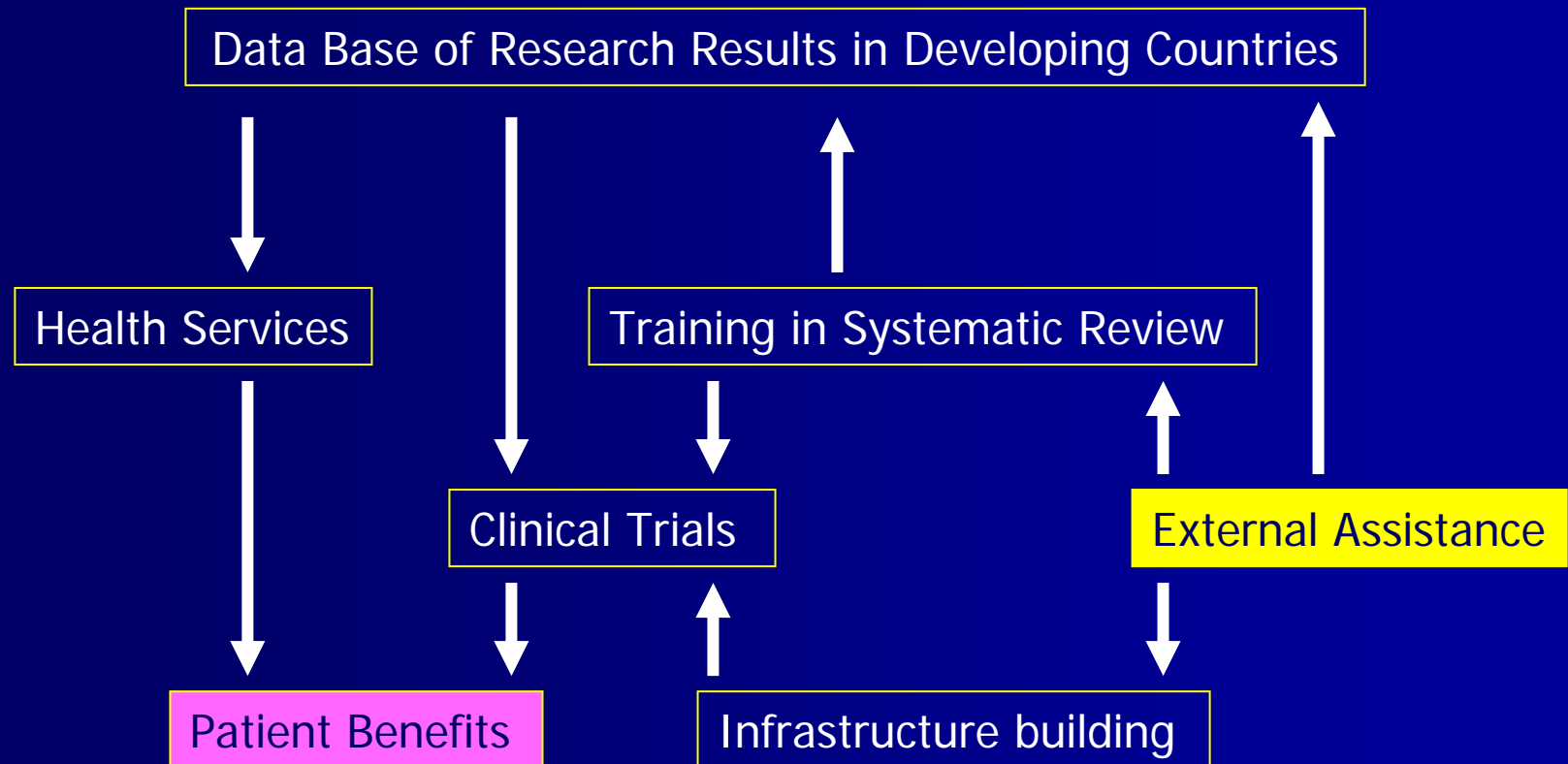
Guidelines

- Based on available evidence
 - may be from a different population and with different resources
- Rarely entails collaboration or learning
- No quality control or ethical review
- No identification of deficiencies
- No outcome measures
- No new information

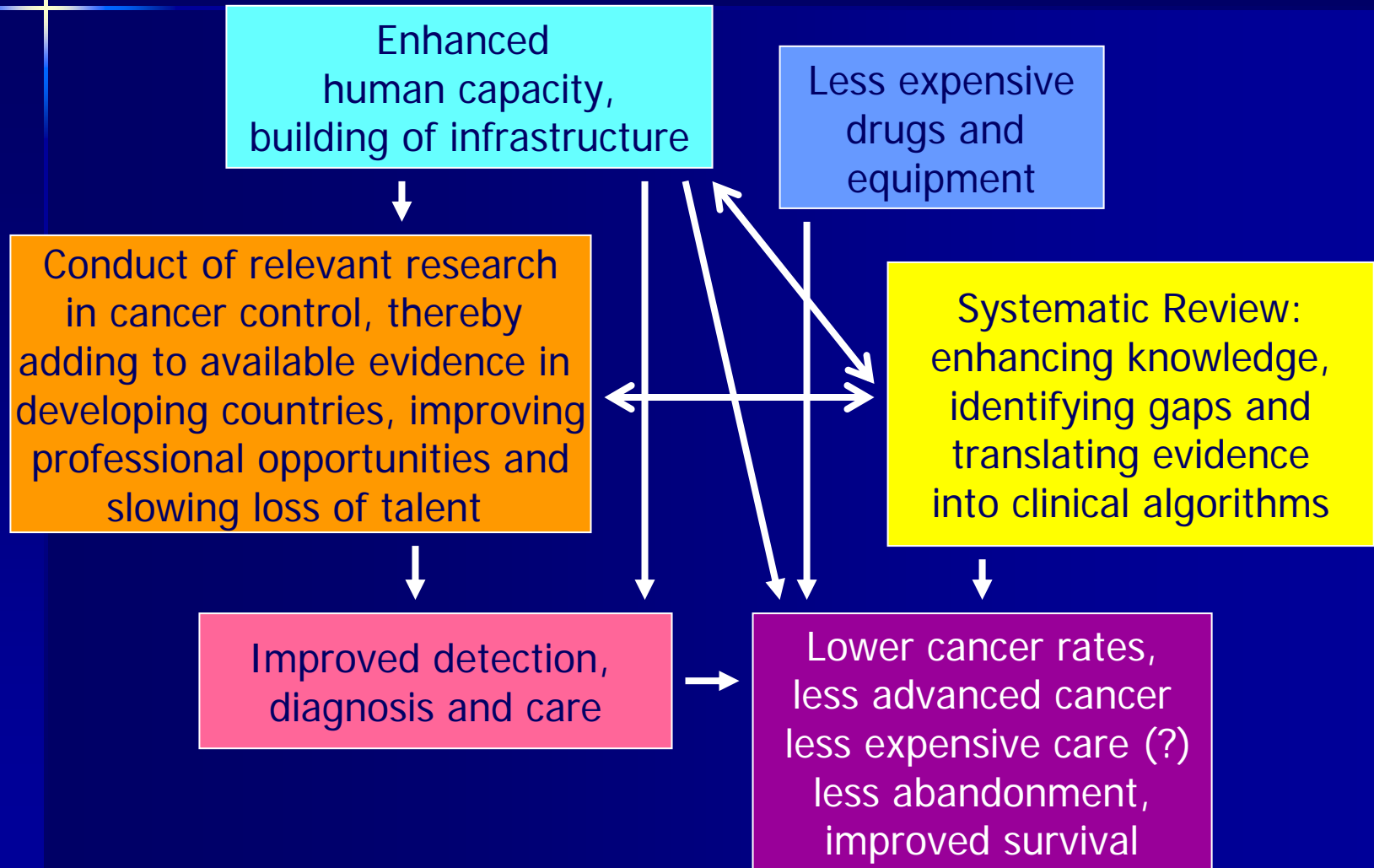
An Evidence Base for Developing Countries

- Interventions must be based on relevant evidence
 - Most available evidence derives from high income countries and addresses their problems
- Existing evidence from developing countries needs to be collected and systematically evaluated
 - This may be used to develop appropriate guidelines; to identify gaps in knowledge
- Training in systematic review will help create a scientific ethos among health professionals
- Research studies can be developed to “fill the gaps”

Developing Human Resources for Research



Overall Goals and Outcomes



INCTR Projects

