

SCIENCE AND TECHNOLOGY INTERVENTIONS IN HEALTH INNOVATION



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Health Innovation

Health Innovation refers to the
*“development of new drugs, vaccines,
devices and diagnostics, as well as new
techniques in process engineering and
manufacturing.”*

Morel et al, 2005

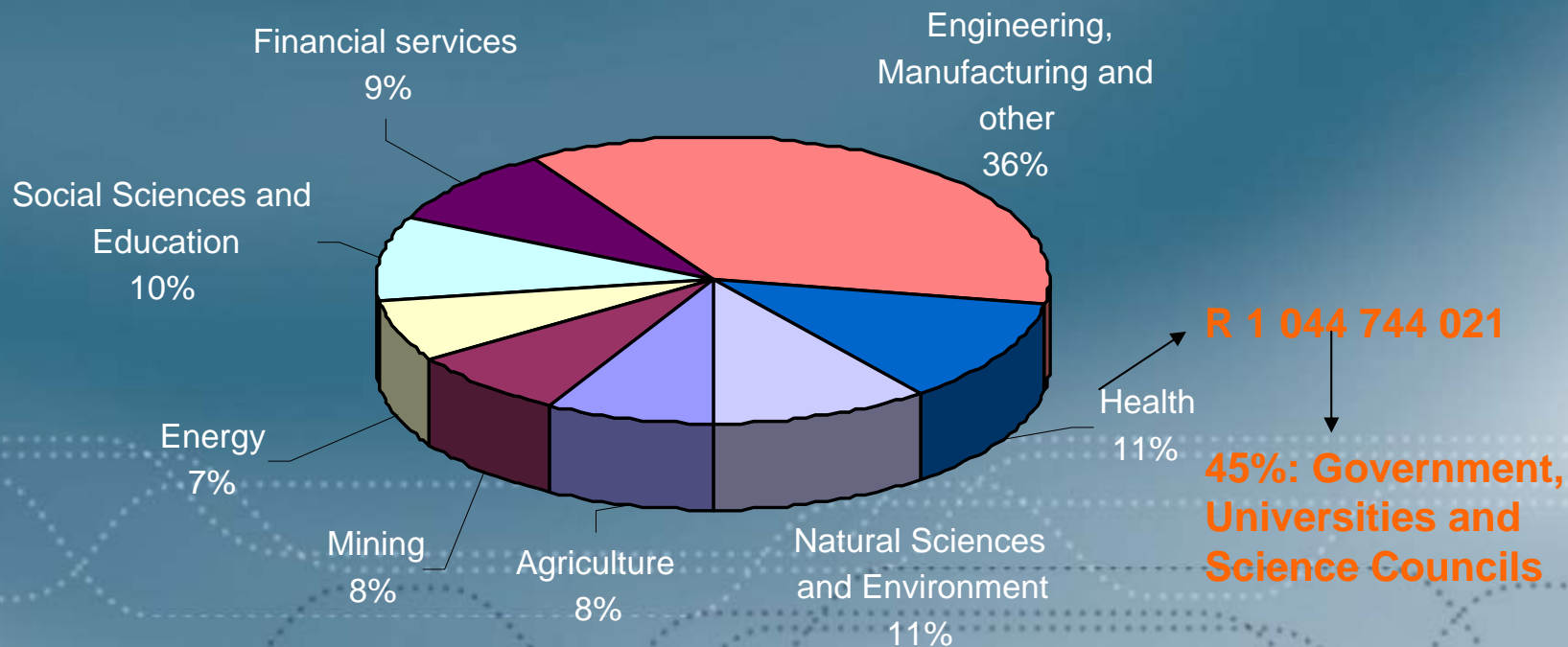


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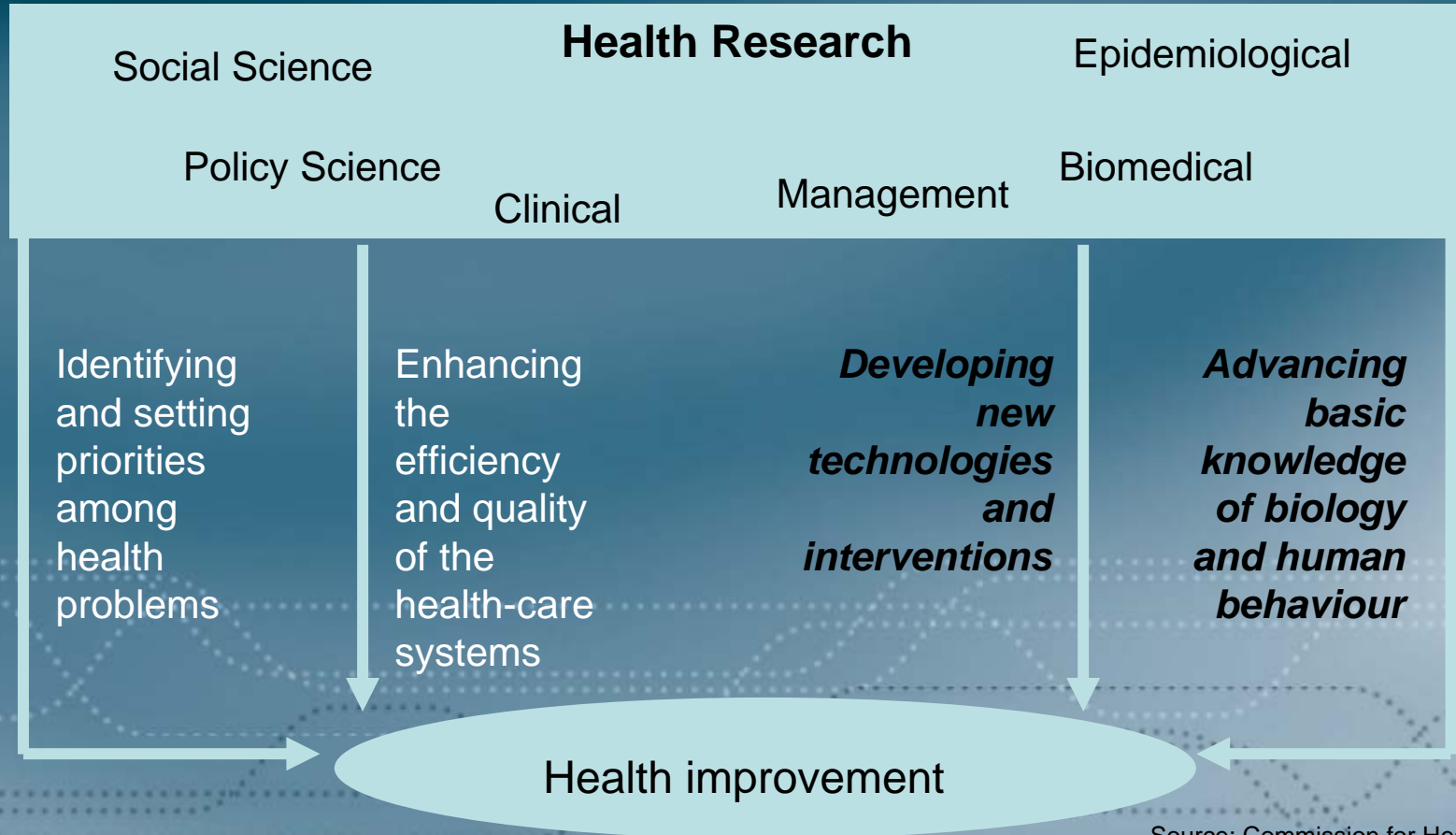
Total South African non-Defence R&D spending, 2003



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Pathways for Health Research



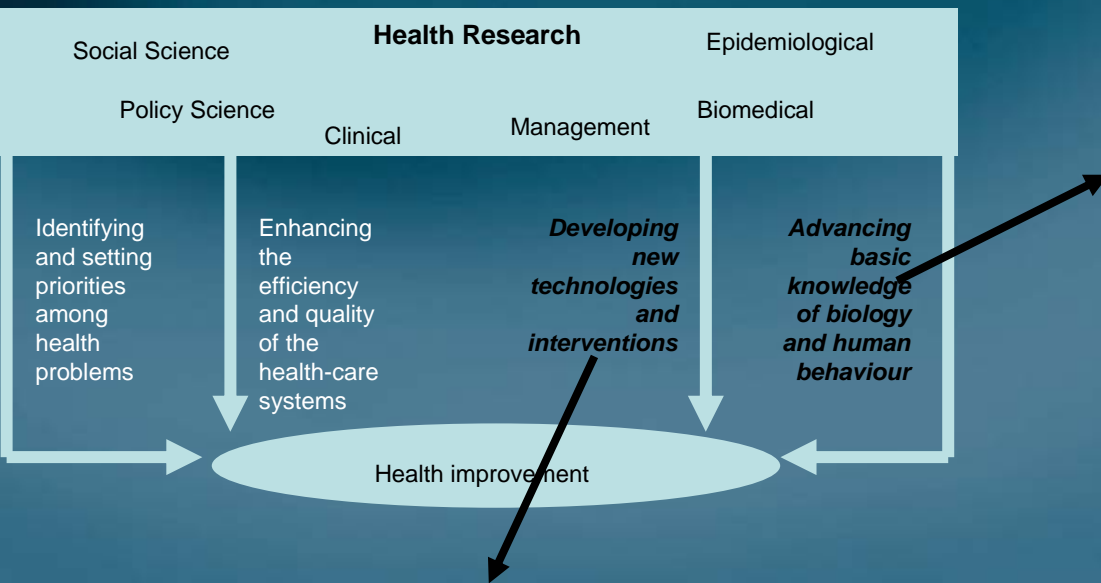
Source: Commission for Health Research for Development (COHRED) 1994, p. 10



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Pathways for Health Research



better understanding of biological processes in health and disease;

the biology of infective agents and their vectors;

the role of genetic factors in resistance and susceptibility to disease; and

advances in the understanding of health-related human behaviour.

•search for new biomedical tools: - drugs, vaccines, diagnostic tests, and environmental-control measures for biological, chemical, and physical hazards;

•discovery and development of tools for disease control

Source: Commission for Health Research for Development (COHRED) 1994, p. 10

Combined research priorities (not in order of priority)

DISEASE	MRC Burden of Disease (2001)	ENHR (1997 & 2006)	NR&TF (1998)
HIV/AIDS	✓	✓	✓
Homicide / Violence/ Injuries	✓	✓	✓
Tuberculosis	✓	✓	✓
Nutrition	✓	✓	✓
Mental Health	✓	✓	
Diabetes mellitus	✓	✓	✓
Malaria		✓	✓
All cancers		✓	✓
Heart and Circulatory problems	✓		✓
Diarrhoeal diseases	✓	✓	
Respiratory infections	✓	✓	



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DST identified priorities

Grouping	Disease
Major Infectious diseases	HIV/AIDS
	TB
	Malaria
Non-communicable diseases and disabilities	Cancer
	Diabetes
	Hypertension / Heart disease / Stroke
	Congenital abnormalities & Genetics
Mental Health	Mental Health / nervous system disorders
Nutrition	
Other infectious diseases	Respiratory infections, incl COPD and asthma
	Endocrine and metabolic diseases
	Zoonoses, New and Emerging diseases
	Diarrhoeal diseases
Injuries	Trauma, including Burns
Reproductive Health, incl Genito-urinary diseases	
Maternal Health and Perinatal Conditions	
ICT in health	Health Informatics, Telemedicine & e-health, Biostatistics and bio-informatics



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Early stage or highly cross-sectoral generic technology or knowledge platforms requiring a high degree of research and experimental development, as well science and technology human capital development.



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EXPECTED OUTCOMES

- Drug discovery and evaluation
- Diagnostics
- Vaccine development
- Medical devices
 - Imaging
 - Self-management tools
 - Telemedicine – including connectivity issues



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HOW

- Indigenous knowledge
- Basic molecular science and genetics
- Biotechnology
- Nanotechnology
- Nuclear physics
- Manufacturing processes and engineering



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IMPLEMENTATION

- Consortia of researchers
 - develop a specific research strategy per disease or intervention area.
 - universities / science councils will take responsibility for the management of the consortia
 - partner with institutions with limited capacity



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MONITORING AND EVALAUTION

- Progress wrt expected outcomes, evaluated on annual basis – through technical committees of consortia and COEs.
- Conference to showcase progress and re-align research efforts where necessary
- Any breakthroughs leading to clinical trials – re-evaluate and enter into discussions with DOH – DST cannot fund clinical trials.
- 5 yearly evaluation of research priorities – with DoH. – Based on outcomes → realign funding



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Thank you



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