

Operational Research for equitable healthcare resource planning in ODA countries

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Overview

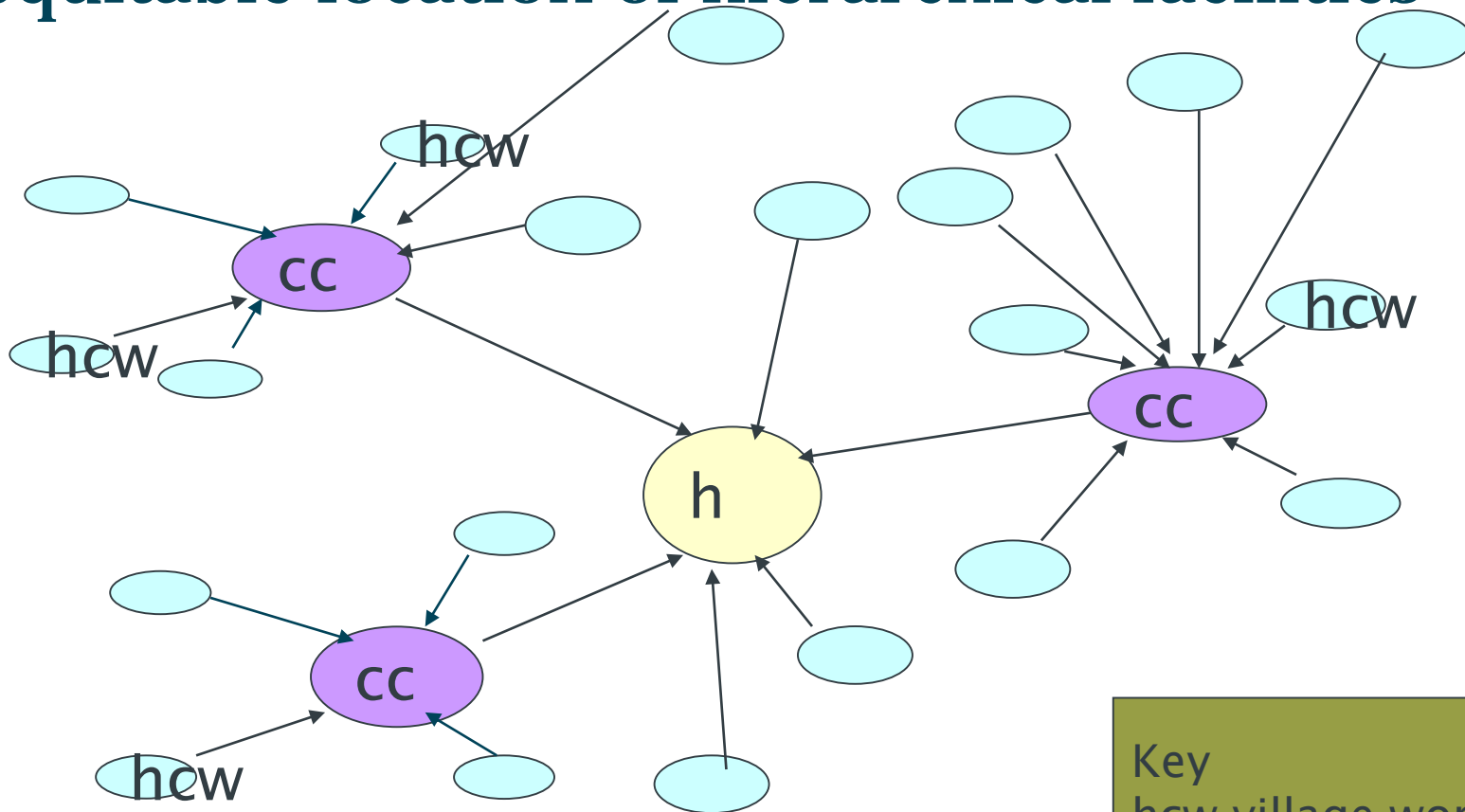
- Operational Research (OR) – what can it offer?
- OR for equitable practice – some examples of ODA collaborations
- Future bids
- Some messages!

OR – what can it offer for equitable practice?

- Techniques such as
 - Combinatorial optimisation
 - Simulation
 - Data mining

Some examples of collaboration

Community health care in rural areas – equitable location of hierarchical facilities



Key
 hcw village worker
 cc community centre
 h hospital

Equitable healthcare facility location

Location of HIV/AIDS test laboratories in South Africa

- CD4 alone
- A network of testing for a hierarchy of tests

Combinatorial optimisation – blood supply chain

- Location of low cost blood centres for blood collection and distribution
- Vehicle routing for distribution of scarce blood supplies

Simulation-Optimisation:

Optimising the blood supply chain

Collaboration with social sciences

Newton Institute funding recently awarded by MRC/CONFAP (Brazil)

EU QUERO: Mother and child health services in Brazil – 1000 days

Problem emerged from workshop of UK + Brazilian universities

- **Social science + geographical**
- **“Soft” OR + mathematical programming**

Future GCRF proposal – data mining

Problem: some ethnic groups have high health risks but late presentation

– but data on laboratory testing missing ethnicity

❖ Prostate cancer testing in South Africa

❖ Data imputation, names +geographical

Some messages!

Jacek Gondzio – University of Edinburgh

- Application of optimisation for matching:
 - Kidney donation
 - Healthcare professionals to rural practices



Konstantinos Zografos – University of Lancaster

Humanitarian aid - emergency response resilience

❖ healthcare



Sujit Sahu – University of Southampton

- Geospatio-temporal modelling for healthcare
 - Inclusion of maths/statistics in bids!!

