

Infectious Disease Intervention Management

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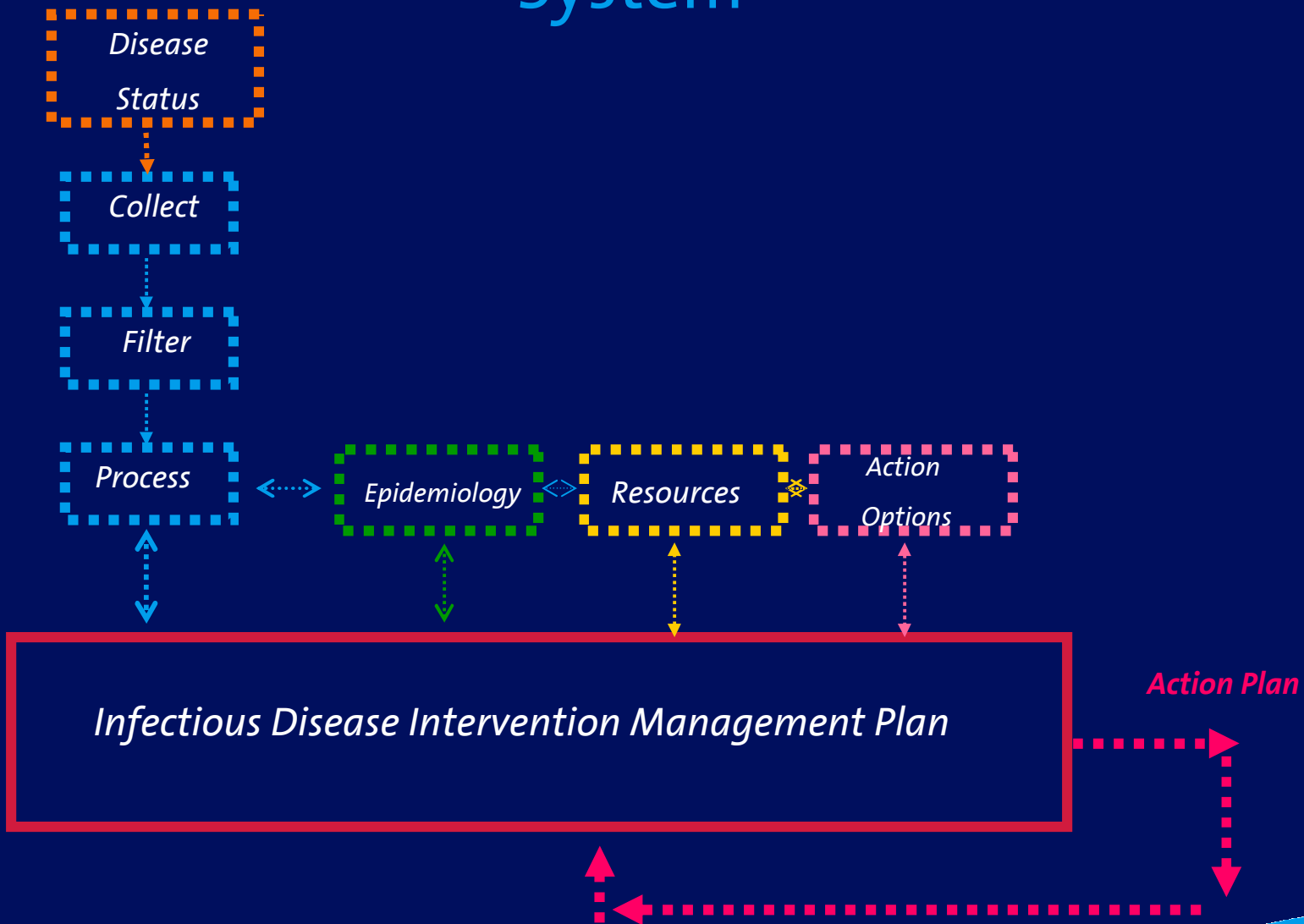


QinetiQ

Infection Disease Intervention Management

- Disease status: collect, filter and process data
- Integrate with:
 - epidemiological knowledge,
 - information about previous outbreaks,
 - resources and action options
- Help to implement the management plan that is feasible for the government and
- Update instructions in response to changing circumstances

Infectious Disease Intervention Management System



Infectious Disease Management

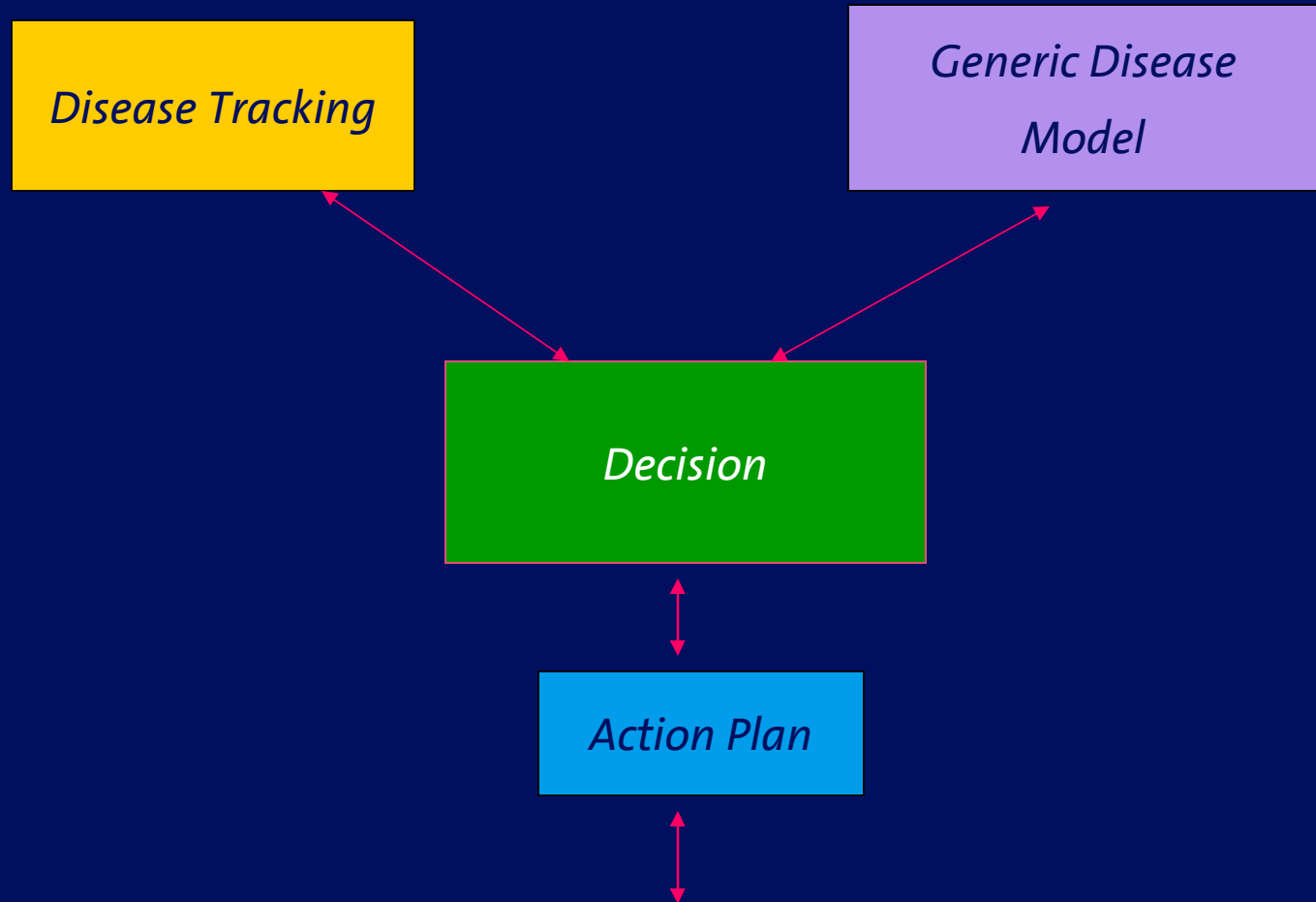
Phase I - Infectious Disease Logistics Model

- Logistics support
 - Inform how intervention can/ought best to be carried out
- Contact tracing facilities
 - Identify who is most at risk
 - Using tool such as Visual Analysis for Network Tracing (VANT)
- Support policy and practical decisions in:
 - Government response and
 - Intervention during an infectious disease outbreak
- Interface with:
 - A mathematical model of generic disease spread
 - Disease tracking process

Mathematical Models

- Answer policy related questions:
 - During an on-going infectious disease outbreak
 - Before the disease is well characterised or even identified
- Sample questions:
 - Patient isolation? Quarantine?
 - Vaccination
 - Available?
 - Trace/mass? Whom?
- Vaccine development vs. diagnostic tests
- **What** ought to be done?
- **How** is it best done?
- **Who** are at risk?

Infectious Disease Logistics Model

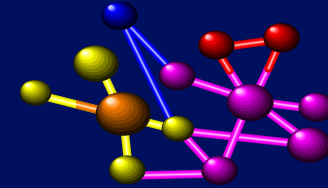


Possible Logistics Module

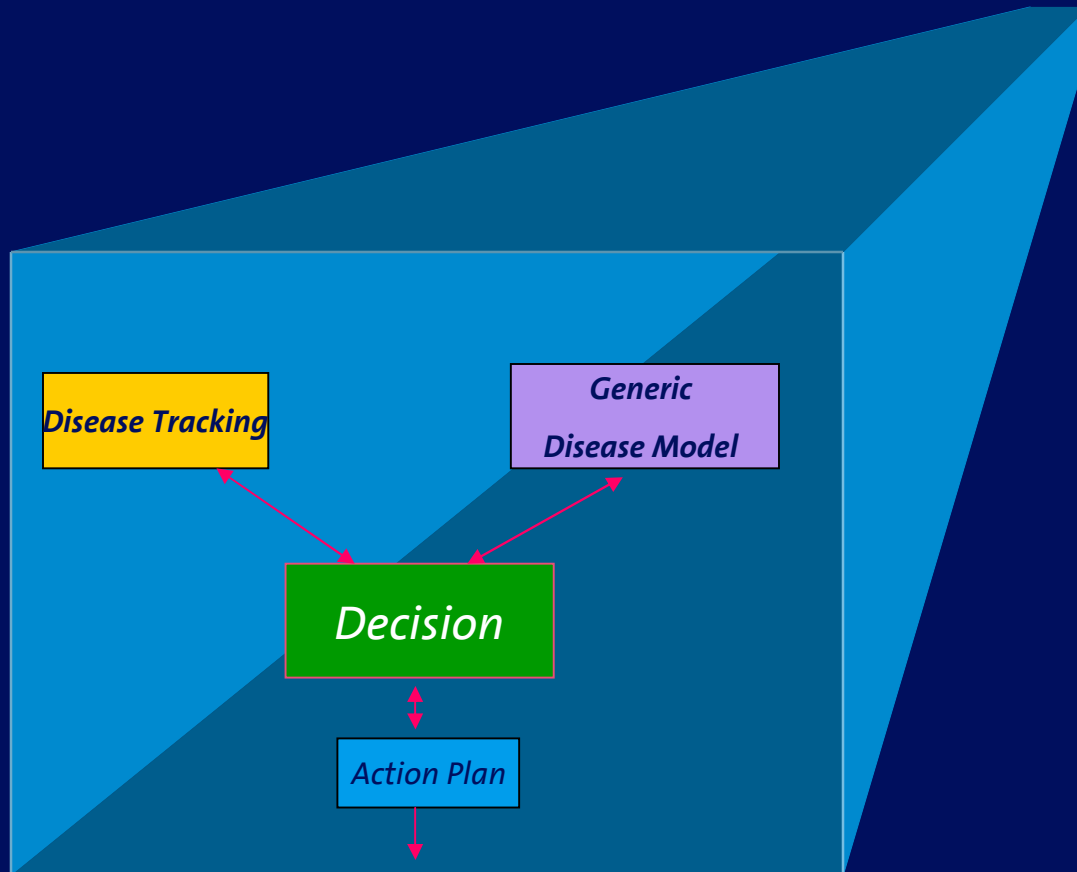
- Adapt an existing decision making tool as the front end to visualise:
 - Current outbreak status (disease tracking)
 - Geographic spread, morbidity, mortality, recovery
 - Age group, sex, etc
 - Based on available or simulated data on
 - Man power, vaccine, financial availability
 - Hospital beds (isolation/quarantine) etc.

Infectious Disease Logistics Model

Phase I - Infectious Disease Logistics Model



Visualisation



Conclusions

- Initial investigation shows that a decision making tool with visualisation capabilities provides a possible means of supporting policy and practical decisions in managing infectious disease outbreak