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Rapid evaluations

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Rapid evaluation

Rapid evaluation was at the heart of National Health Service England's evaluation strategy of the new models of care vanguard programme. This was to facilitate the scale and spread of successful models of care throughout the health and social care system (McCarthy 2019)

- "rapid evaluation" generally 6- to 12-months
- Regular reporting – *framework, interim with data quality, draft and final*
- Close working with commissioners and buy-in from stakeholders
- Bigger bespoke teams with flexibility and correct skills
- Clearly defined objectives and issues of concern
- Quick access to data

McCarthy, A., McMeekin, P., Haining, S. *et al.* Rapid evaluation for health and social care innovations: challenges for "quick wins" using interrupted time series. *BMC Health Serv Res* **19,** 964 (2019). https://doi.org/10.1186/s12913-019-4821-7

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Imperial College Health Partners

- ICHP is a not-for-profit partnership organisation which brings together NHS providers of healthcare services, clinical commissioning groups and leading universities across North West London (NWL)
- We are also the designated academic health science network (AHSN) for NWL as a member of the national AHSN Network
- We work collaboratively with other evaluation and analytic units
- We also provide services to NHSE, charities, SMEs and industry

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Types of innovation/intervention

- New models of care
- Medical technology
- Digital health technology including applications
- Algorithms
- Medicines

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Our datasets

Publicly available datasets

- Quality and Outcomes Framework (QOF)
- Primary care prescribing (ePACT)
- Office for National Statistics (ONS)
- Public Health England
- National audits

Specialist datasets

- North West London Whole Systems Integrated Care (WSIC)
- Record level Hospital Episode Statistics (HES)
- Clinical Practice Research Datalink (CPRD)

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WSIC/Discover – evaluation ready

- The Discover healthcare database – powered by the Whole Systems Integrated Care (WSIC) database
- Coded primary care data from birth including prescriptions and events and hospital activity data covering diagnosis, procedures and events
- A costed longitudinal health and social care record based upon commissioner pricing for different provider services
- Pre-built algorithms such as Electronic Frailty Index (EFI) and Patient Activation Measures
- Ability to flag patient cohorts

ICHP uses WSIC to run RWE evaluations, explore patient pathways, compare effectiveness, and assess the financial impact of interventions.

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What is Discover's unique offering?

- Linked health and social care records for 2.6 million patients
- Deidentified dataset for research purposes
- Total patient cost to the system based upon clinical commissioner prices
- Access to local research and clinical network
- Supported by collaboration of commissioners, trusts, universities and primary care across NWL
- Pricing model to support reinvestment into enhancement to the Discover platform
- Commitment to improve dataset in response to clinical and research requirements
- Opportunity for collaboration with industry and other partners

Integrated data

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- **Immediate data requirements:** deeper data, more records, more frequent and timely manner
- **Breadth of data:** Aside from wider determinants of health, the current breadth of data in Discover-NOW / WSIC has been adequate for users and this is expanding
- **Some desirable data sets** are pathology and labs, inpatient prescribing and wider determinants of health data - pollution, maternity
- **Future data requirements:** In the near future, consent-to-contact flag and passively collected smart device data linked to DISCOVER - NOW
- **Innovative data curation: F**or example by linking data such as raw imaging, near-time high frequency signals, and passively collected smart phone data.
- **Data access:** Direct access the preferred method of using data by researchers

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Considerations for shorter time frames

- For program evaluations it is ideal to have two years prior post intervention of data. With digital health?
- What is likely to change over a shorter period?
- Sample size affects how many parameters you can have in the model
- Variable selection techniques give us a way to determine the most important variables but with information loss (removing variables)
- Apply methods to simulate conditions of RCT
- Testing pre-model assumptions ensures we are applying the right techniques
- Handling missing data e.g. method for data MAR
- Account for uncertainty

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Logic modelling

- Essentially, a logic model helps with evaluation by setting out the relationships and assumptions between what a programme will do and what changes it expects to deliver (Hayes *et al.*, 2011)
- McLaughlin and Jordan (1999) note, creating a logic model enables you to set out the programme “story”, detailing:
  - What are you trying to achieve and why is it important?
  - How will you measure effectiveness?
  - How are you actually doing?

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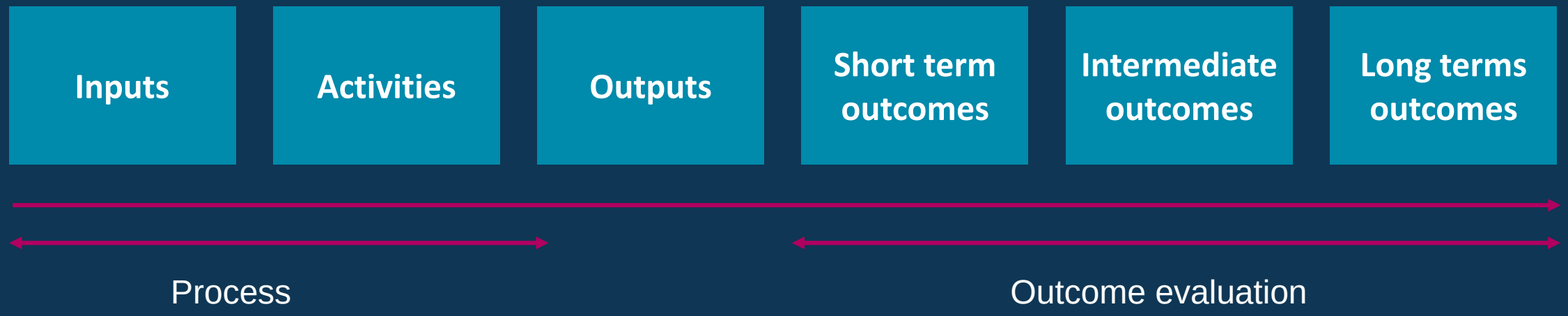
Logic model for evaluation

- **Inputs:** Resources necessary for program implementation
- **Activities:** The actual interventions that the program implements in order to achieve health outcomes
- **Outputs:** Direct products obtained as a result of program activities
- **Outcomes** (*short-term, intermediate, long-term, distal*)**:** The changes, impacts or results of program implementation (activities and outputs)



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Applying a framework

- Process from initial engagement
  - Scoping – aim and objectives, version control (more time spent on this)
  - Timelines – key deadlines, reasons deadlines
  - Budget – available? Need funding?
- Frameworks will help guide the evaluation in a systematic way
  - DHT – WHO framework as a foundation and refer to others according to the company objective e.g. reimbursement

https://apps.who.int/iris/bitstream/handle/10665/252183/9789241511766-eng.pdf?sequence=1

https://www.nice.org.uk/Media/Default/About/what-we-do/our-programmes/evidence-standards-framework/digital-evidence-standards-framework.pdf

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How do we address commissioning needs?

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Thank you