

Remote Diagnostics: The Evaluation Challenge

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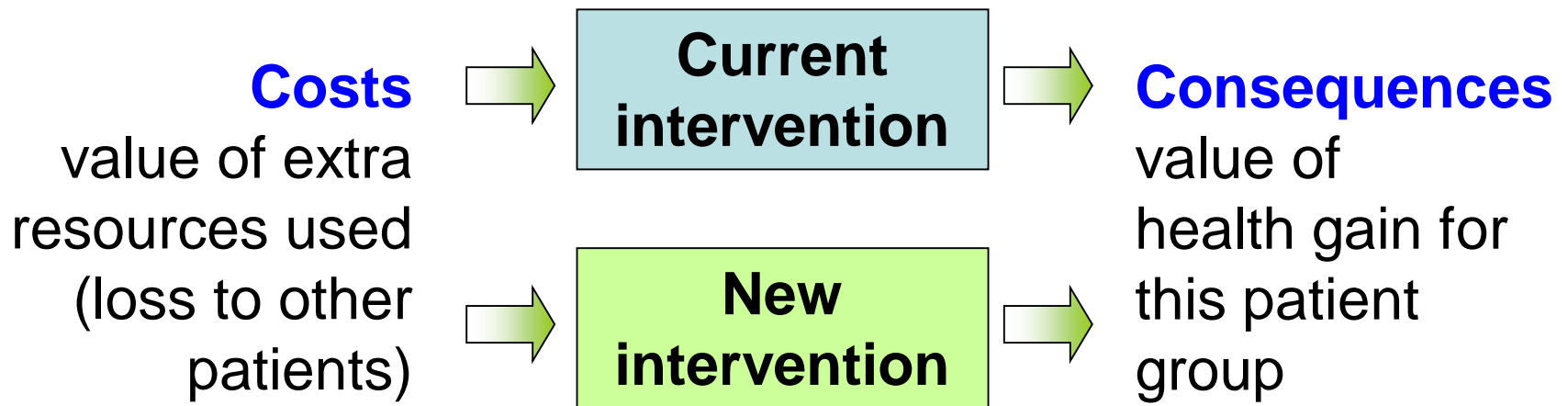
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Economic Evaluation

“A comparative analysis of alternative courses of action in terms of both their costs and consequences”

Drummond *et al.* Oxford University Press, 2005.



Economic Evaluation: Tests

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Typical steps:

- 1) Map the current and comparative (including the new diagnostic) clinical/patient pathway(s)
- 2) Use the mapped pathways to prompt identification of potential benefits and harms of new test (multiple stakeholder input)
- 3) Measure resource use
- 4) Generate/Identify evidence of benefits and harms
- 5) Compare the relative costs and consequences of new test to current practice

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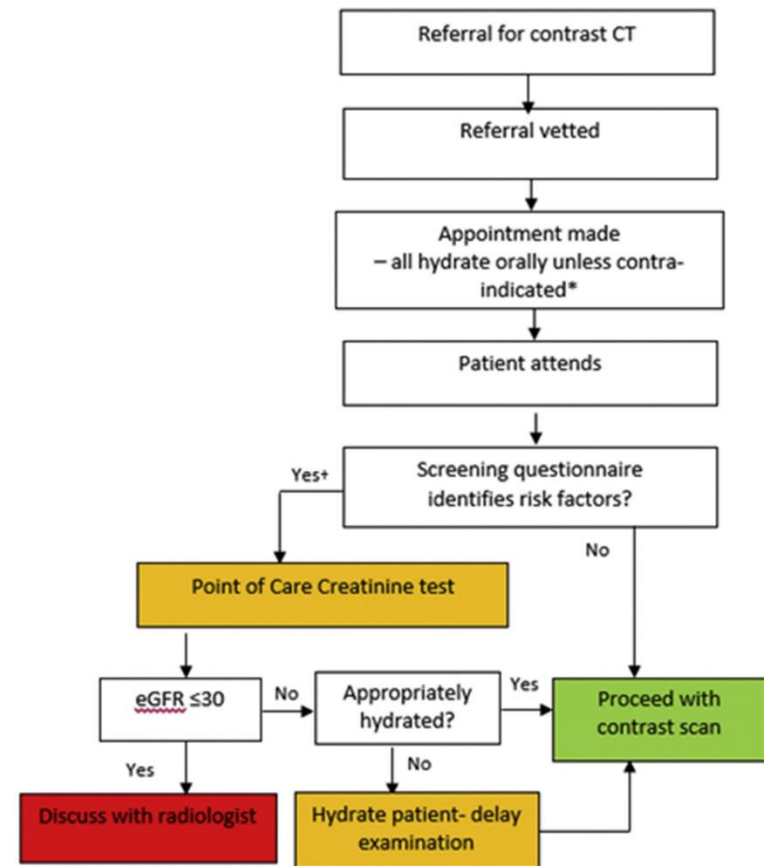
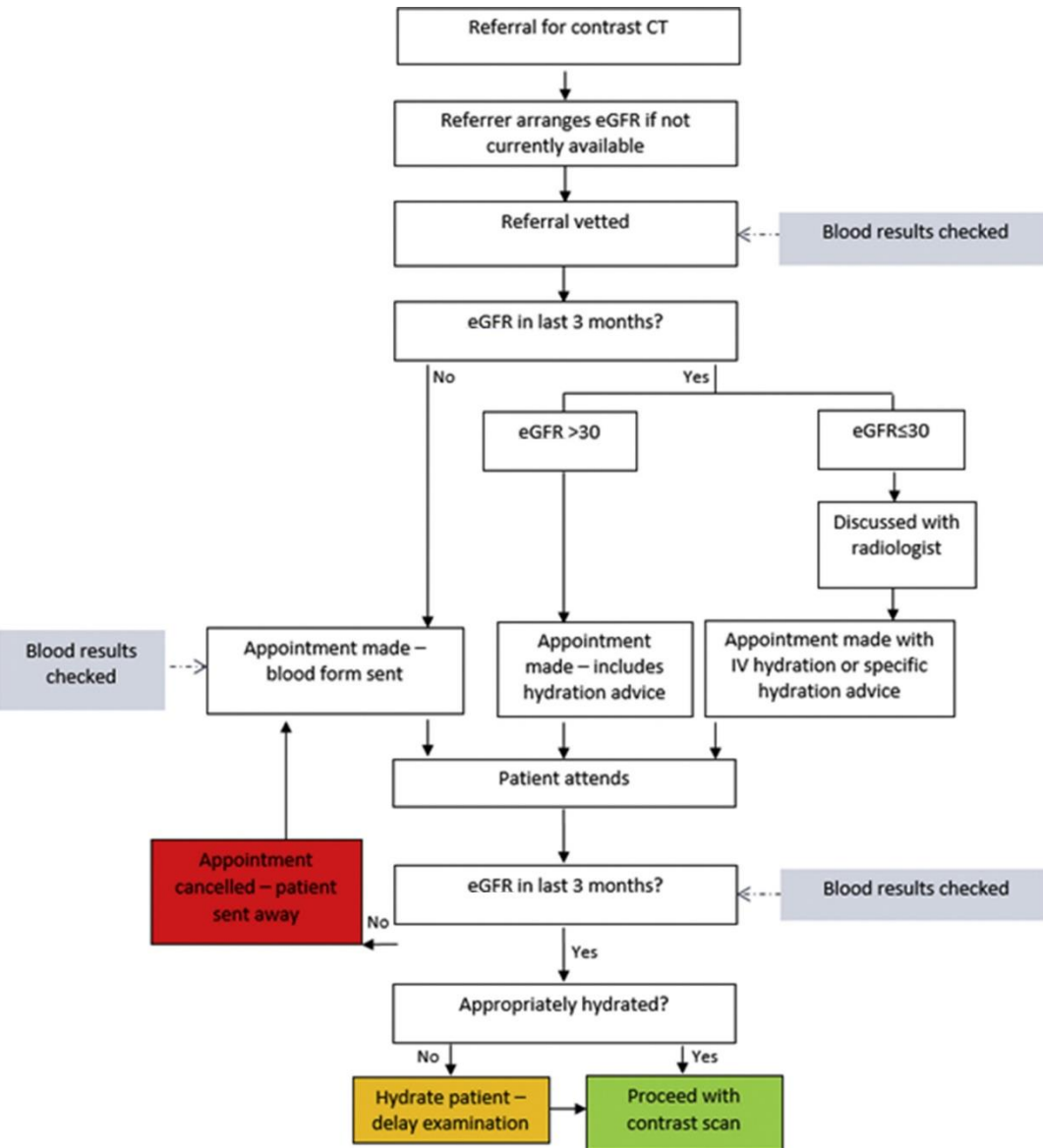
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Mapping Current Practice



- Often remote diagnostics are proposed for contexts where there are problems in implementing recommended diagnostic practice in real-world practice
- Can't solely rely on literature/clinical trials/clinical guidelines in which case to map current practice
 - Surveys of real-world practice
 - Routinely collected data
 - Focus groups with relevant stakeholders
- Important to capture heterogeneity
- What are the consequences of the implementation issues?

Care Pathway Analysis



*All patients to be advised to orally hydrate pre and post scan in appt letter. † contact appt centre if on fluid restriction – they will be issued guidance

† ill is defined as:

- Hospital admission
- Antibiotics
- Diarrhoea and vomiting

Shinkins et al.
(2021)

Economic Evaluation: Tests



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Remote Diagnostics



What is the value proposition for the following remote diagnostics?

- HPV self-sampling
- Single use, rapid, UTI self-test
- Continuous glucose monitor
- Colon capsule endoscopy
- Mole checker apps for skin cancer
- Point of care ultrasonography

Remote Diagnostics

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What are some of the common value propositions for remote diagnostics?

- Reduce number of consultations/need for clinical expertise/test can be conducted by different people
- Improve patient acceptability
- Reduce transmission (for infection)
- Improve uptake
- Patient empowerment
- Ability to continuously measure something (without being an ‘inpatient’)
- Reduce inequalities in access to diagnostics
- Reduce need for travel/carbon footprint
- Reduce need for time off work
- Reduce AMR

Benefits/Harms



- Increasingly for many diagnostics, but particularly remote diagnostics, the potential benefits and harms go beyond the patient themselves
 - System impact– release capacity/streamline diagnostic pathways, failure to record test result within EHR, increase pressures on NHS
 - Societal impact – reduce/increase health inequalities, reduce spread of infection
 - Environmental impact – reduce need for travel, increase non-biodegradable/recyclable waste
 - Economic impact – more expensive/cheaper (upfront and long-term), productivity loss

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HE: Novel Methods

Impact on capacity
constraints



Discrete event
simulation

Health inequality
concerns



Distributional cost-
effectiveness analysis

Thank you

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Any questions?

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