Health economics: case study

2014 UK Diagnostics Forum

Changing the Landscape of Adoption of Diagnostics Forum

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Introduction

What if….

… we introduce this new diagnostic test into clinical practice in the NHS?

a) Can we understand its potential value to patients and to healthcare providers?

b) Can we estimate what resources (e.g. clinical time and money) the new test would use compared to current tests?

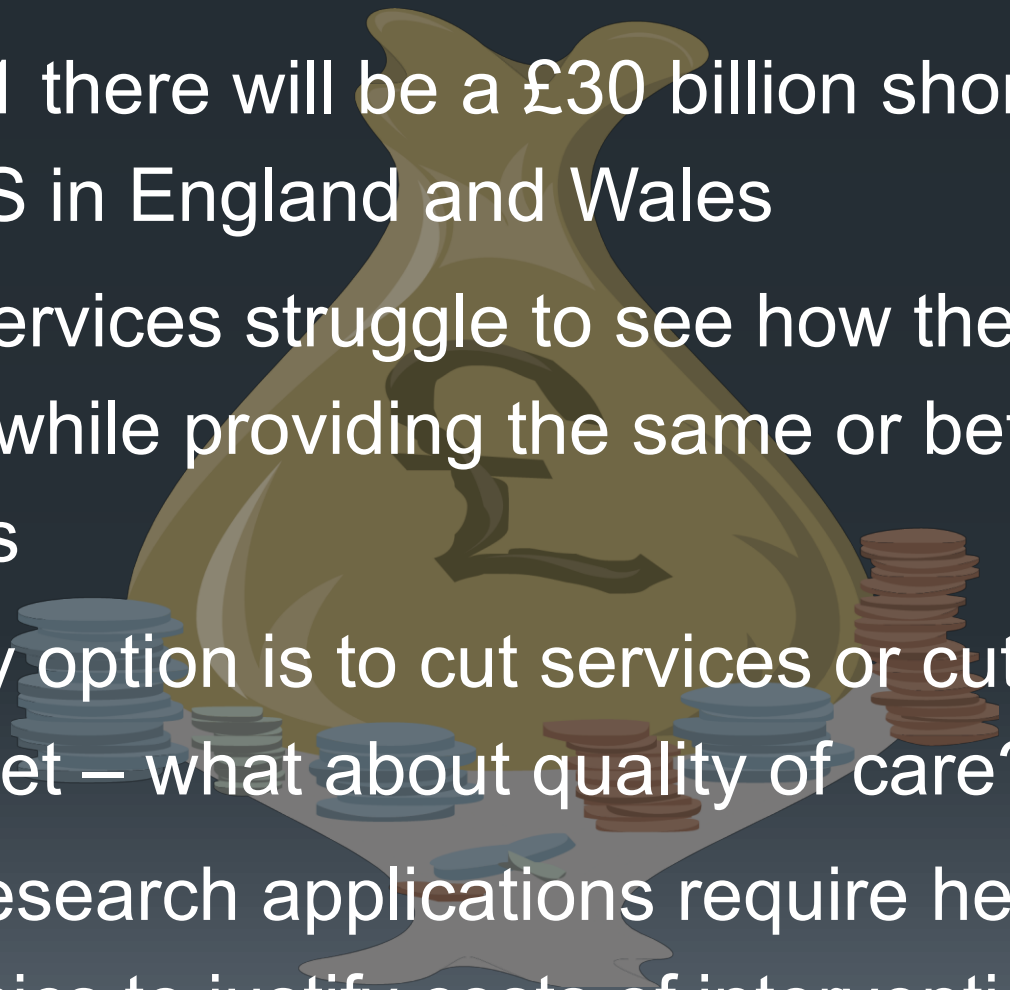
c) Are there are any wider population/society level benefits that might be gained (or cost savings) from using the new test?

d) What additional evidence do we need to persuade decision makers to adopt the test?

The challenge

Given the current pressures on reducing costs, how can we think about introducing or using new technologies in practice?

The context – NHS spending cuts



- By 2021 there will be a £30 billion shortfall to fund the NHS in England and Wales
- Many services struggle to see how they can save money while providing the same or better quality services
- An easy option is to cut services or cut staff to reach the target – what about quality of care?
- Many research applications require health economics to justify costs of intervention

The context – patient safety

What do we need to do to understand the costs, benefits and value of a new diagnostic innovation?

- As a healthcare provider: what do you need to convince managers, finance, & Trust to adopt new technology in the NHS?
- As a supplier/manufacturer of health care products: how do you get the NHS, private sector, etc. to buy your innovative products?
- As a commissioner: what information will help convince you to invest in one test over alternatives?
- As a academic/researcher: what do you need to get funding for new research ideas?

What are the benefits?

- From whose perspective?
  - Patient
    - Better experience
    - Reduce anxiety
    - Quicker/streamlined service
    - Prevent or reduce risk of short and long terms complications
    - Less chance of treatment failure

What are the benefits? (2)

- From whose perspective?

  - Clinic/service
    - Increased patient flow
    - More efficient services
    - Attracting new/different patients
    - Better patient outcomes
    - Reduce follow-up
    - Greater clinical confidence in diagnosis/treatment

What are the benefits? (3)

- From whose perspective?

  - Population/public health
    - Reduced transmission
    - Reduced incidence/prevalence of infection
    - Reduced incidence/prevalence of complications/disease

What are the costs?

Acquisition cost per test

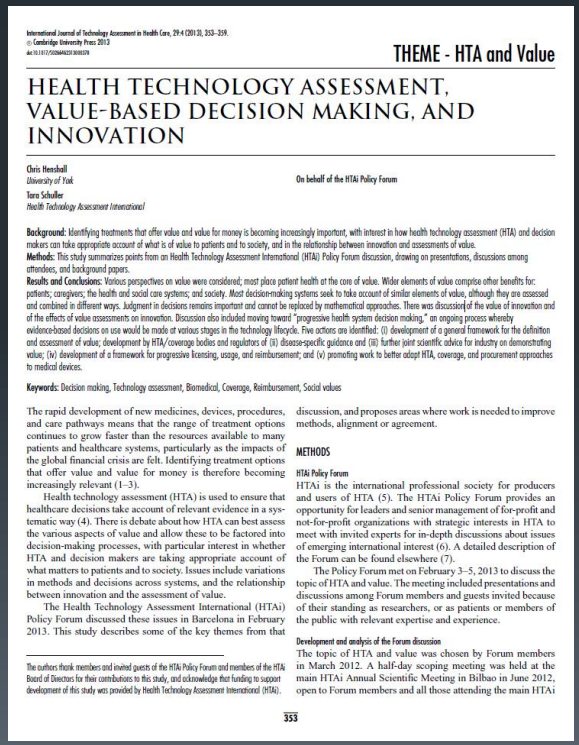
Cost to the clinic/service

NHS

Henshall & Schuller

Int. J. Tech. Assess. Health Care 29:4, 2013

- Results of the Health Technology Assessment International (HTAi) Policy Forum (Barcelona, Feb 2013)
- Defining value – depends on perspective
  - Patient
  - General public/societal
  - Health care
  - Industry
- Elements of value
  - Core benefits, e.g. those to the patient (improved prognosis/survival, symptom/pain relief, etc.)
  - Wider elements of value, e.g. non-health benefits to patients, caregivers/family, society, health & social care systems
- Approaches to measurement
  - Clinical outcomes, patient related outcomes, measure eg EQ5D, QALY
- Approaches to valuation



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THEME - HTA and Value

HEALTH TECHNOLOGY ASSESSMENT, VALUE-BASED DECISION MAKING, AND INNOVATION

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Background: Identifying treatments that offer value and value for money is becoming increasingly important, with interest in how health technology assessment (HTA) and decision makers can take appropriate account of what is of value to patients and to society, and in the relationship between innovation and assessments of value.
Methods: This study summarizes points from an Health Technology Assessment International (HTAi) Policy Forum discussion, drawing on presentations, discussions among attendees, and background papers.
Results and Conclusions: Various perspectives on value were considered; most place patient health at the core of value. Wider elements of value comprise other benefits for: patients; caregivers; the health and social care systems; and society. Most decision-making systems seek to take account of similar elements of value, although they are assessed and combined in different ways. Judgment in decisions remains important and cannot be replaced by mathematical approaches. There was discussion of the value of innovation and of the effects of value assessments on innovation. Discussion also included moving toward "progressive health system decision making," an ongoing process whereby evidence-based decisions on use would be made at various stages in the technology lifecycle. Five actors are identified: (i) development of a general framework for the definition and assessment of value; development by HTA/coverage bodies and regulators of (ii) disease-specific guidance and (iii) further joint scientific advice for industry on demonstrating value; (iv) development of a framework for progressive licensing, usage, and reimbursement; and (v) promoting work to better adopt HTA, coverage, and procurement approaches to medical devices.

Keywords: Decision making, Technology assessment, Biomedical, Coverage, Reimbursement, Social values

The rapid development of new medicines, devices, procedures, and care pathways means that the range of treatment options continues to grow faster than the resources available to many patients and healthcare systems, particularly as the impacts of the global financial crisis are felt. Identifying treatment options that offer value and value for money is therefore becoming increasingly relevant (1–3).

Health technology assessment (HTA) is used to ensure that healthcare decisions take account of relevant evidence in a systematic way (4). There is debate about how HTA can best assess the various aspects of value and allow these to be factored into decision-making processes, with particular interest in whether HTA and decision makers are taking appropriate account of what matters to patients and to society. Issues include variations in methods and decisions across systems, and the relationship between innovation and the assessment of value.

The Health Technology Assessment International (HTAi) Policy Forum discussed these issues in Barcelona in February 2013. This study describes some of the key themes from that discussion, and proposes areas where work is needed to improve methods, alignment or agreement.

The authors thank members and invited guests of the HTAi Policy Forum and members of the HTAi Board of Directors for their contributions to this study, and acknowledge that funding to support development of this study was provided by Health Technology Assessment International (HTAi).

METHODS

HTAi Policy Forum

HTAi is the international professional society for producers and users of HTA (5). The HTAi Policy Forum provides an opportunity for leaders and senior management of for-profit and not-for-profit organizations with strategic interests in HTA to meet with invited experts for in-depth discussions about issues of emerging international interest (6). A detailed description of the Forum can be found elsewhere (7).

The Policy Forum met on February 3–5, 2013 to discuss the topic of HTA and value. The meeting included presentations and discussions among Forum members and guests invited because of their standing as researchers, or as patients or members of the public with relevant expertise and experience.

Development and analysis of the Forum discussion

The topic of HTA and value was chosen by Forum members in March 2012. A half-day scoping meeting was held at the main HTAi Annual Scientific Meeting in Bilbao in June 2012, open to Forum members and all those attending the main HTAi

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Case study:

Developing evidence to support introduction of a point of care NAAT for chlamydia and gonorrhoea in the UK

Question

Imagine you are a patient. You go to a GUM clinic to find out if you got chlamydia after having unprotected sex with a new partner.

The nurse says you have a choice – you can have:

1. Standard test – find out the results in 10 days
2. Point of care test – find out the results in 2 hours

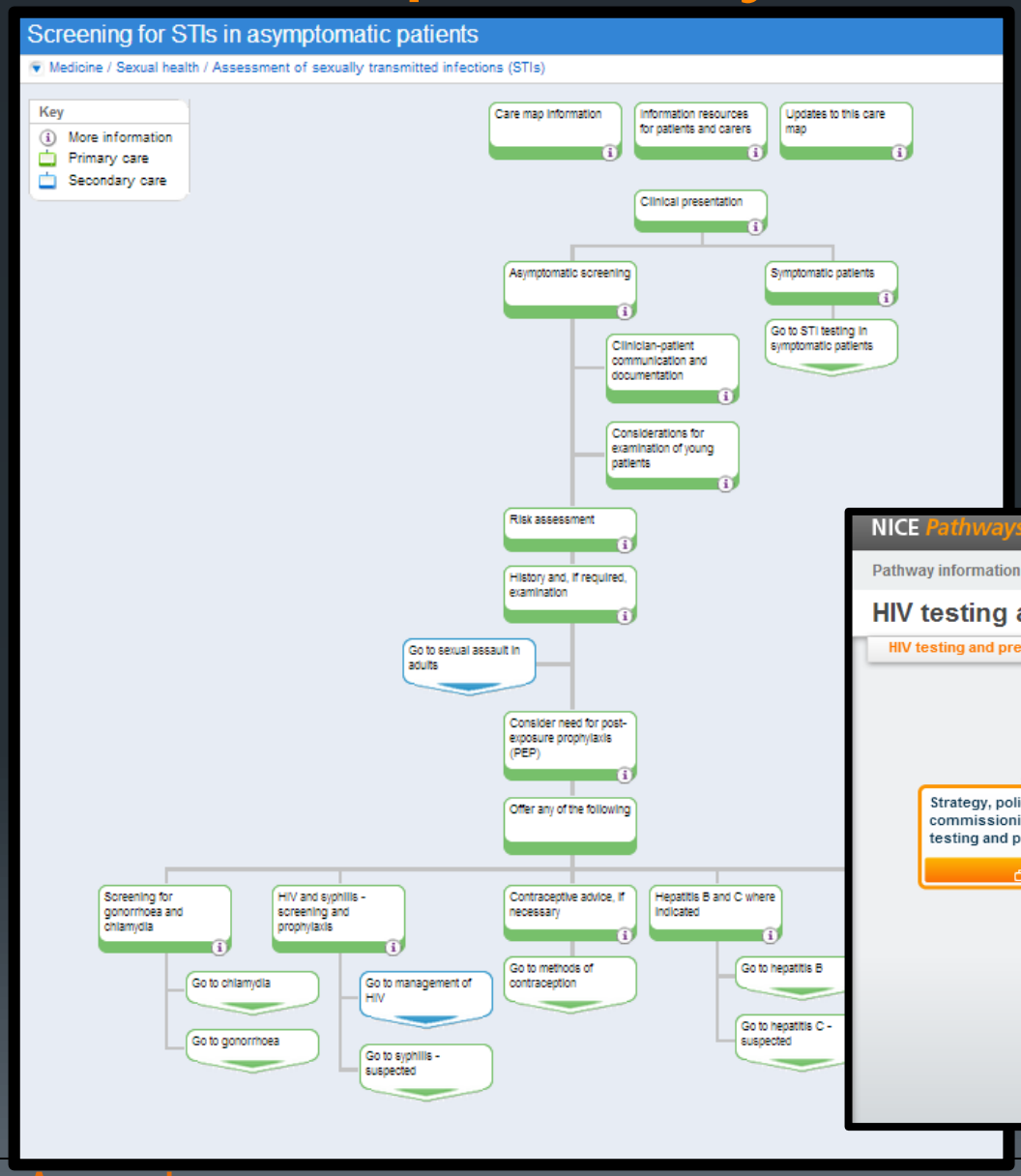
As a patient, what would you choose?

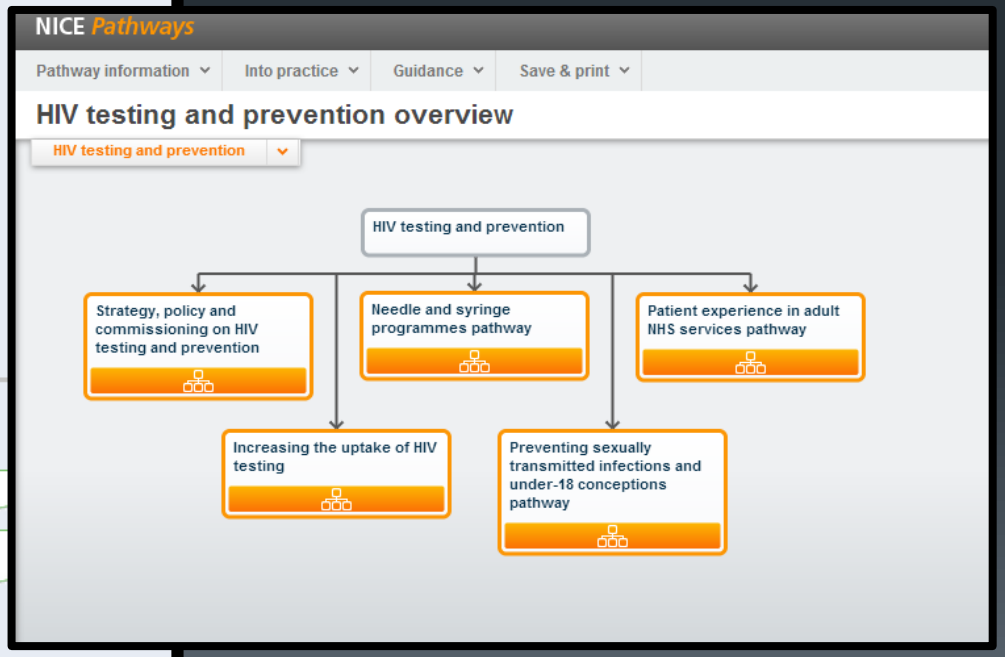
2 Projects

- Project 1: Mapped out clinical care pathways using chlamydia and gonorrhoea point of care NAATs compared to standard tests

- Project 2: Estimated the clinical and economic costs and benefits of implementing point of care tests for chlamydia and gonorrhoea in GUM clinics

Patient pathways



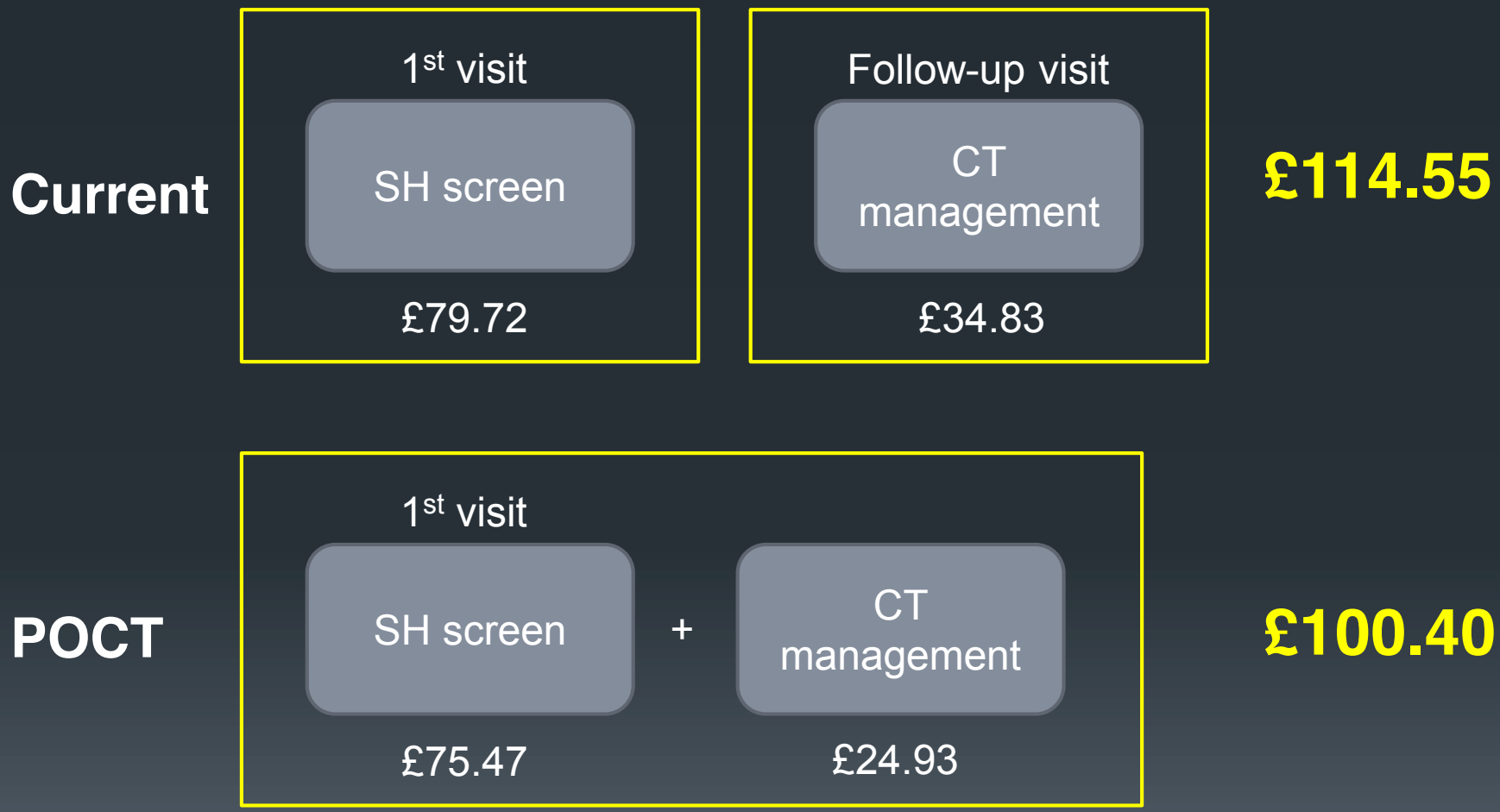


Patient pathway example: Asymptomatic sexual health screen

Register Meet & Greet	Consulta-tion	Blood Work	Health Promotion	Pathology	Results Mng.	Contact Pos. & Equiv.
Admin/ Clerical	Blend clinical sta…	B…d - cli…al staff	Blend …inical s…		…urse 5/6	Nurse 7/8, Health Adviser
5 min.	15 min.	…in.	6 min.		6 min.	15 min.
100%	…%		100%	100%		1%
	Sample collection urine p… urine specimen container (0.7), vulvo-vaginal swab (0.3),	P…er, blood …e cotton …equest form, needle, sterets, syringe, transport tube, vacutainer	KY lubricant, literatur… ond…	CT/NG NAAT test, HIV test, …blog…	…ext message (95%), letter phone ca…	Text message (90%), letter notification (5%), phone call (5%)
0% add'l	25% add'l	50% add'l	0% add'l	100% add'l	100% add'l	50% add'l

£ £ £

Results – current vs. POCT asymptomatic pathway



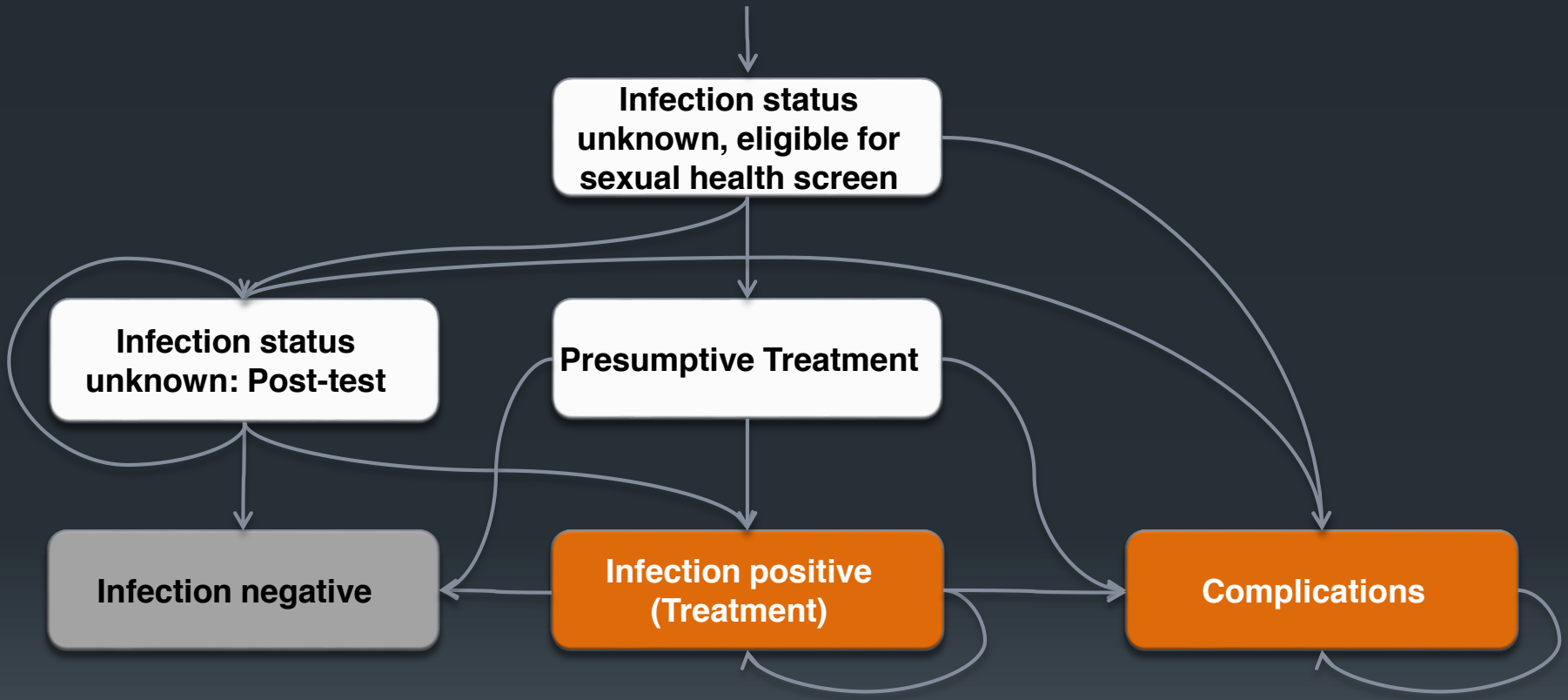
Project 2: Methods

Turner et al *Sex Transm Infect* 2014;**90**:104-111 doi:10.1136/sextrans-2013-051147

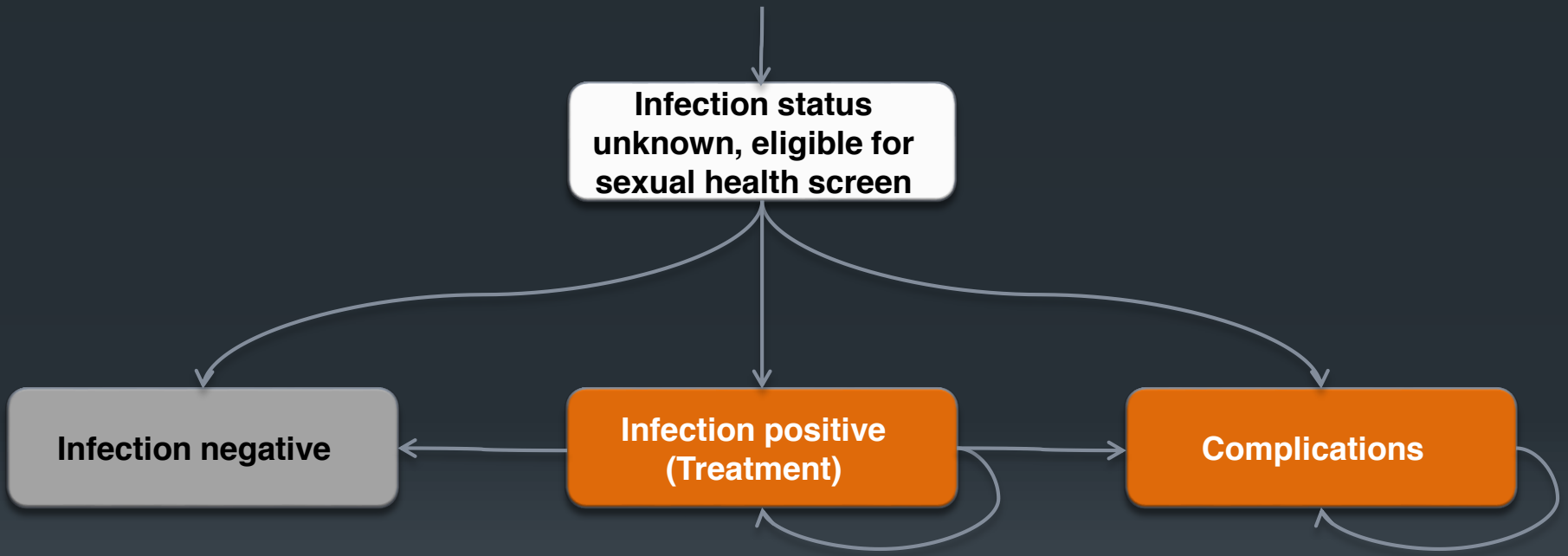
- Modelled the UK cohort attending GUM (1.2 million)
- Compared standard care (off-site lab) to POCT for CT/NG
- Estimated the costs and benefits (QALYs), as well as secondary outcomes (acute symptomatic PID, inappropriate treatment prevented, transmission)
- One month time period

*Note – no longer term complications, e.g. EP, TFI included

Project 2:
Standard care influence diagram



Project 2:
Point of care influence diagram



Project 2: Results

	Cost	QALY
Standard Care	£113.9 million	181,523
POCT	£103.3 million	184,059

- Incorrect treatments averted – 95,389
- Transmissions averted – 17,561
- PID averted – 162

- Moving from enhanced syndromic management to an infection specific approach

Implications

- Understanding the value of using POCTs, not just the acquisition cost of the test, will help service managers, commissioners and local authorities understand the impact of introducing these new tests.
- From modelling work, we can understand the knock on (ie population level) benefits and costs of POCTs
  - E.g. reduced transmission, complications, overtreatment, etc.
- Business case evidence for Trusts
- Evidence for LAs, can contribute to discussions more widely, e.g. national guidelines

Conclusion

- Health economics can help us understand and quantify the:
  - Costs
  - Benefits
  - Value
- Provide evidence to help decision makers increase adoption of innovative diagnostics

Declaration

CT/NG POCT Project team:

Dr Paddy Horner

Dr Katy Turner

Professor John Macleod

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Vikki Pearce

Arminder Deol

Dr Alisha Davies

Dr Anne Postulka, Evi Siaterli , Daniel White & colleagues at Cepheid

Conflict of interest:

I have worked with the following on projects relating to diagnostics/testing:

Atlas Genetics, Cepheid, Enigma Diagnostics, Hologic, Kingston University, National Chlamydia Screening Programme, Office for Sexual Health, Pathway Analytics, St. Georges University, University of Bristol, University College London, University of Galway

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