

Patient Self-tests for Influenza: how could they increase (cost-)effectiveness of the National Pandemic Flu Service (NPFS)?

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Investigators

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 - Dr Peter White
 - Prof Richard Pebody
 - Prof Andrew Hayward
 - Ellen Fragaszy
- Imperial
- PHE
- UCL
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- Three right-facing curly brackets are used to group the investigators by institution. The first bracket groups Dr Nathan Green and Prof Christl Donnelly under "Imperial". The second bracket groups Dr Peter White and Prof Richard Pebody under "PHE". The third bracket groups Prof Andrew Hayward and Ellen Fragaszy under "UCL".

- Maximum cost per test that would be cost-effective at £20,000/QALY, considering
 - Sensitivity, specificity, speed, cost, etc
 - Health benefits (QALYs); costs & savings from changed antiviral use, averted hospitalisations from appropriate rapid use of antivirals
 - Effects of rapid test on care-seeking with GPs & NPFS, GP prescribing
- Baseline: effectiveness of GPs & NPFS in treating influenza in 2009 pandemic

Intended to relieve pressure on GPs & provide mass antiviral treatment (oseltamivir) – access by internet & phone

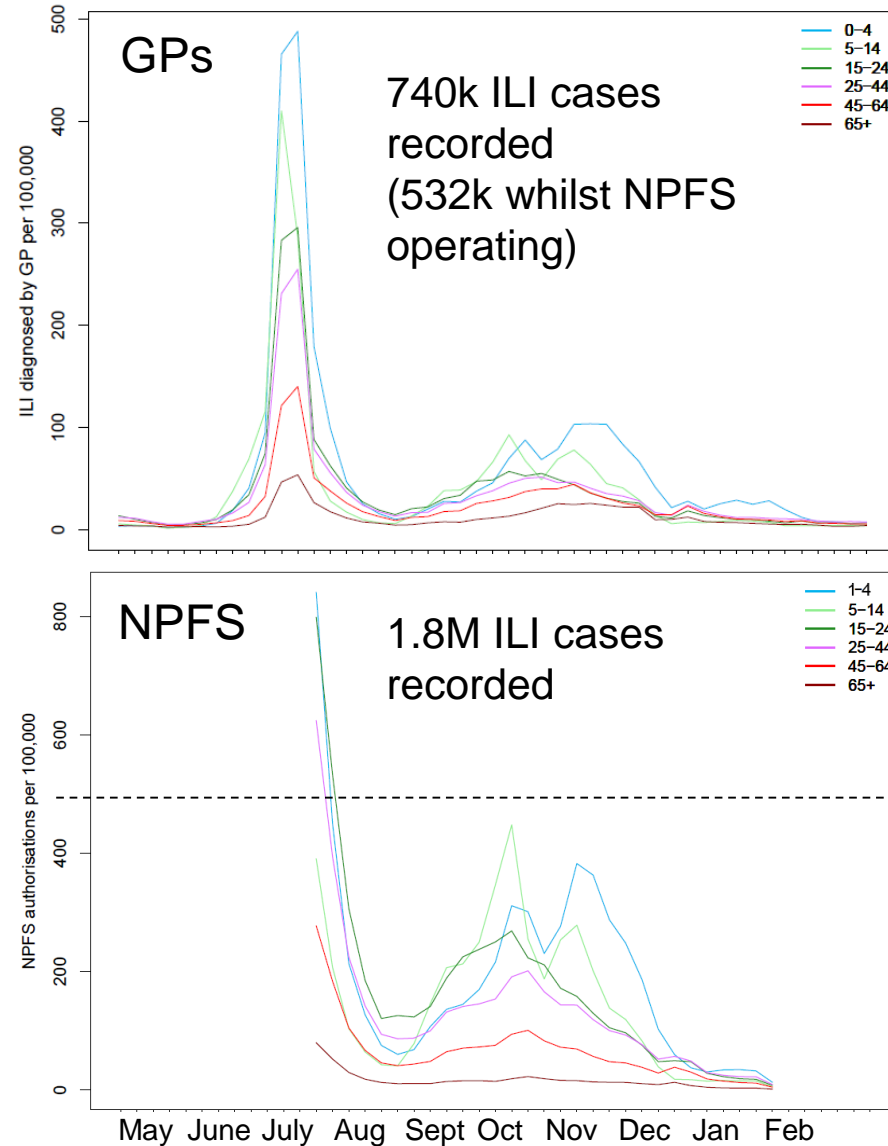
Dealt with patients without risk factors for severe morbidity – others referred to GPs (+ emergency referral to hospital)

Relevant patients authorised to obtain treatment from a local distribution centre – collected by a 'flu friend'

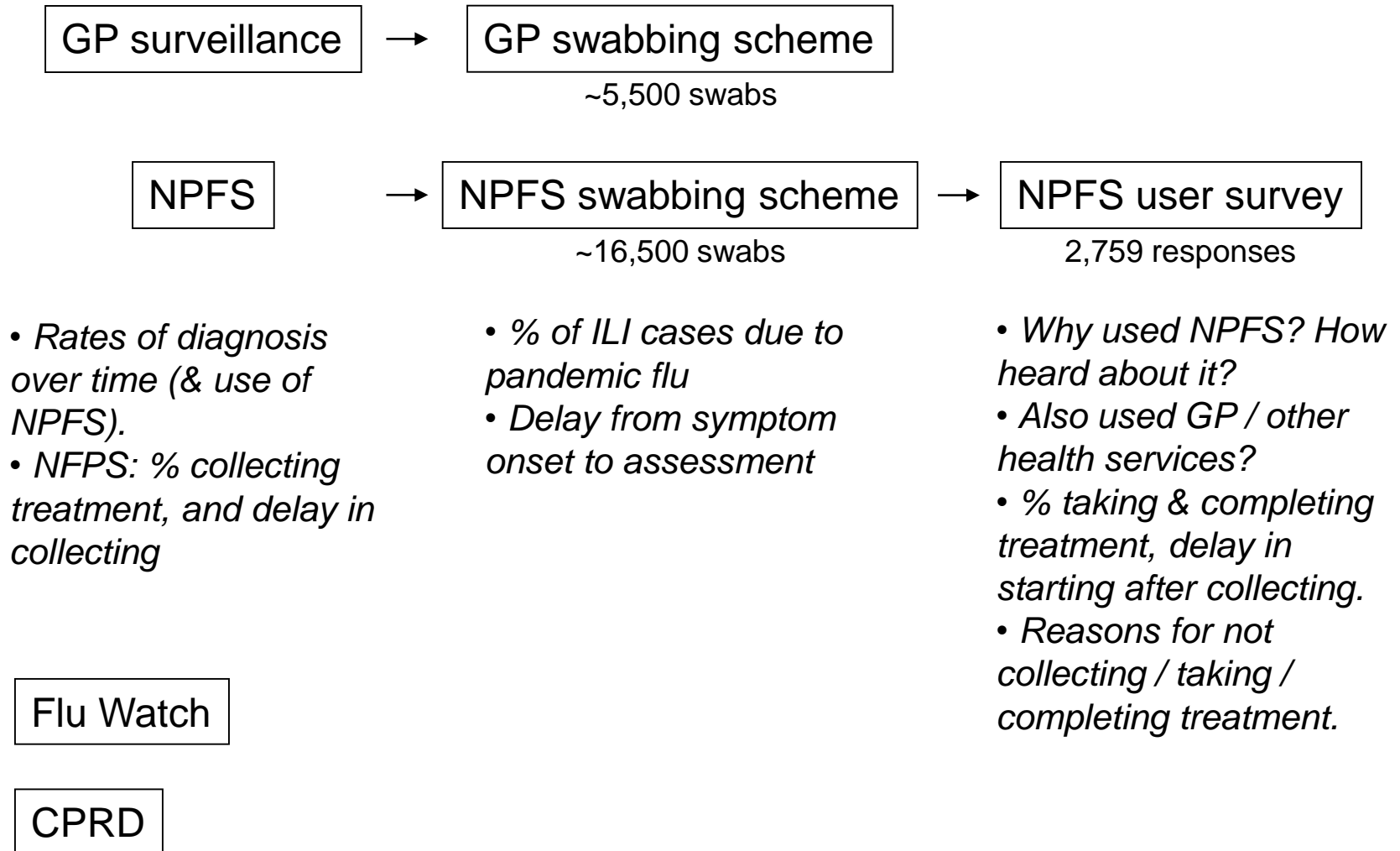
Active from 23 July 2009 to 10 Feb 2010

England only: Scotland, Wales, N Ireland chose not to use

Influenza-like identified by GPs & NPFS in 2009

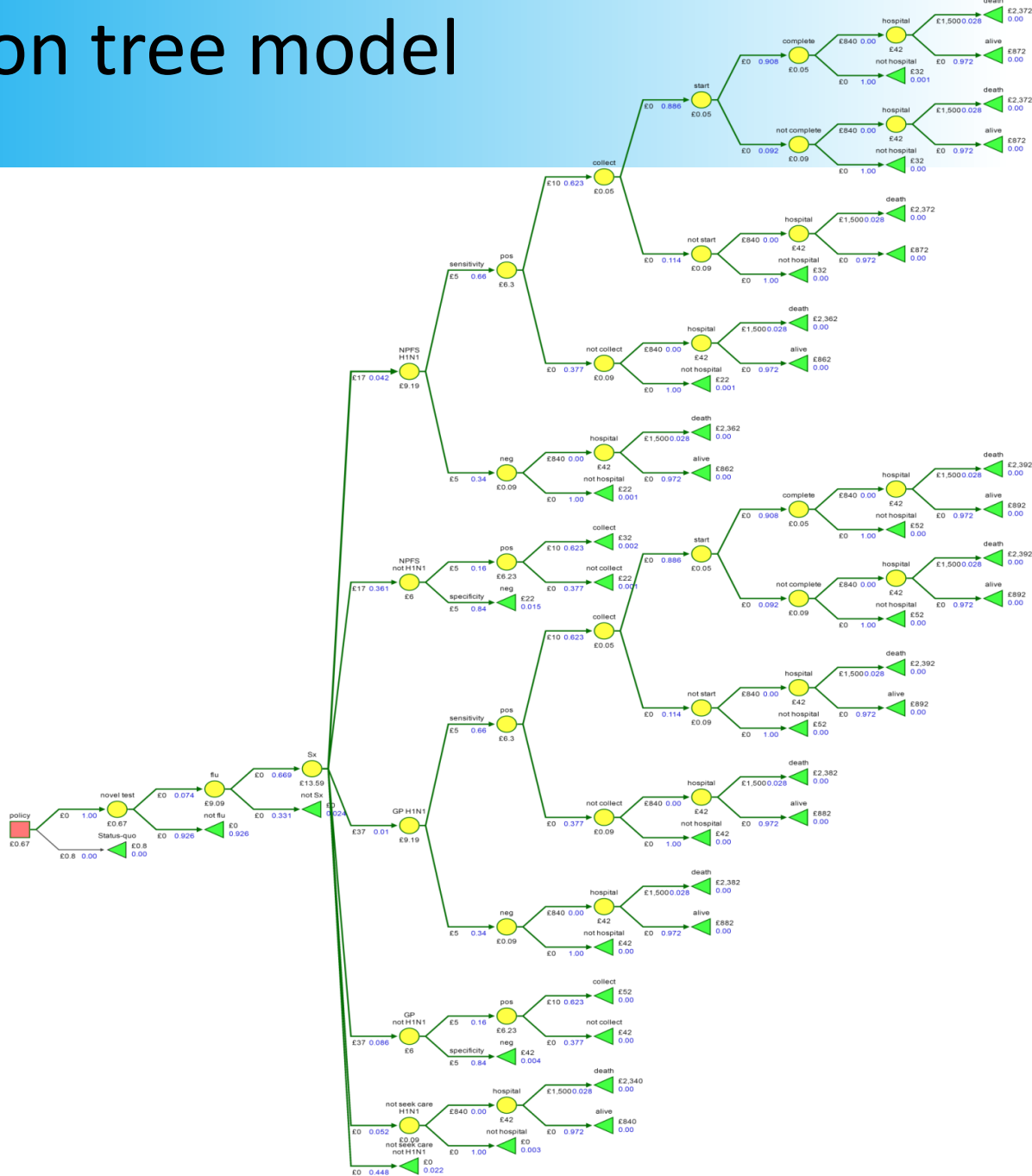


Data sets



- Calculation of health benefits & cost savings of treatment averting hospitalisation & death.
- Analysis of scenarios regarding use of test:
 - by GPs: where prescribing rate is low, even a low-sensitivity test could increase prescribing despite frequent false(-);
 - by NPFS: could reduce overprescribing, could encourage patients to use NPFS instead of GP (reducing delays).

Decision tree model



Scenarios



Test used by GPs only:

1a: GPs prescribe according to test result

1b: As 1a plus patients ↑ collection, taking, completion

Test used by NPFS only:

2a: NPFS only treats positives, not all with ILI

2b: As 2b plus patients ↑ collection, taking, completion

2c: ½ patients initially using GP use NPFS first

2d: ½ patients who did not seek care use NPFS

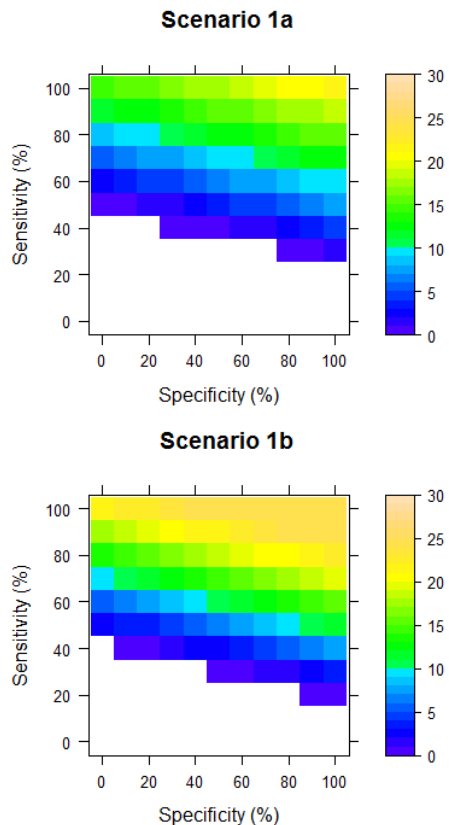
2e: 2b, 2c, 2d combined

Test used by GPs & NPFS:

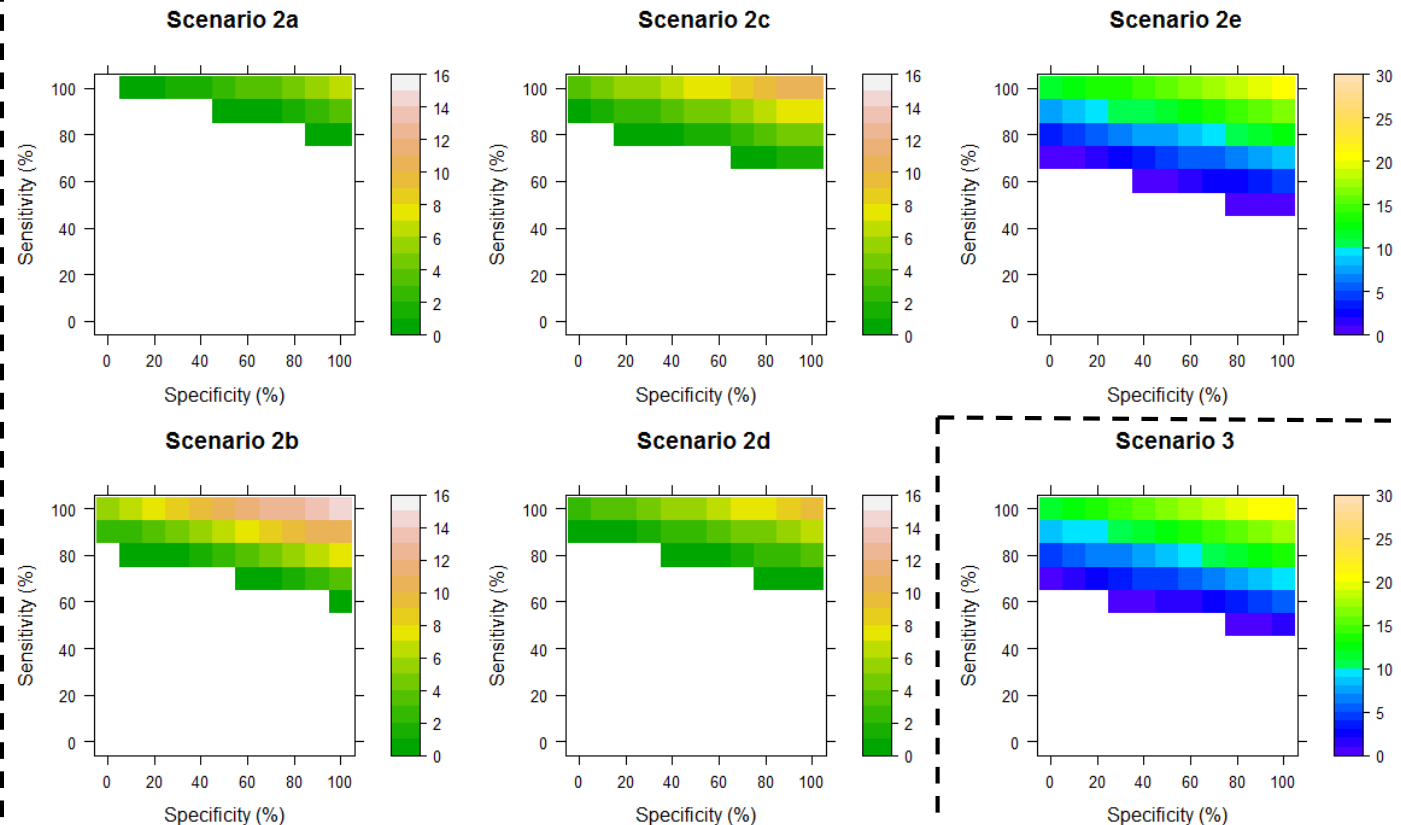
3: 1b, 2b, 2c, 2d combined

Results: max. cost per test*

GPs only



NPFS only



GPs & NPFS

*includes cost of the staff time, any device required to 'read' the test, disposal of test kits, etc

- The cost per test which would be cost-effective for the NHS depends upon patient & clinician behaviour, as well as sensitivity and specificity.
- *If test promotes behaviour changes then it has greater value – requires behavioural research.*
- Greatest value per test was in use by GPs – due to increased prescribing.
- Even a test with 100% sensitivity & specificity has to be cheap to be cost-effective – and current lab test only ~50-60% sensitive.