

Use of process simulation software to inform commissioning decisions to introduce B-natriuretic peptide testing to the diagnostic pathway for heart failure

The problem

- Early accurate diagnosis of heart failure improves patient outcomes.
- Heart failure referrals currently cost the NHS more than £35million per year.
- NHS Improvement projects have shown that of patients referred for heart failure, up to 70% do not have it and more than 30% have no cardiac cause for their symptoms.
- B-natriuretic peptide is a simple blood test that can be used to rule out heart failure with 98% accuracy and allows those with raised levels to be prioritised for echocardiography to speed up diagnosis and treatment.

Assessment of problem and analysis of its causes

A survey of cardiac networks by NHS Improvement in Aug 2009 showed that only 46% of PCTs provided serum natriuretic peptide testing in primary care. Projects over the previous three years had quantified the level of usage of serum natriuretic peptide testing and the reduction in referral associated with it.

Introducing the test requires cooperation between the commissioners and the pathology service providers and agreement reached on the cost, frequency of test availability and time to report. To this end, in the six primary care trusts (PCTs) of Lancashire and Cumbria, the Pathology Commissioning Network was asked to scope out the practicalities of providing the test, whilst the Cardiac Network looked at how it could best be integrated into the clinical pathway.

Intervention

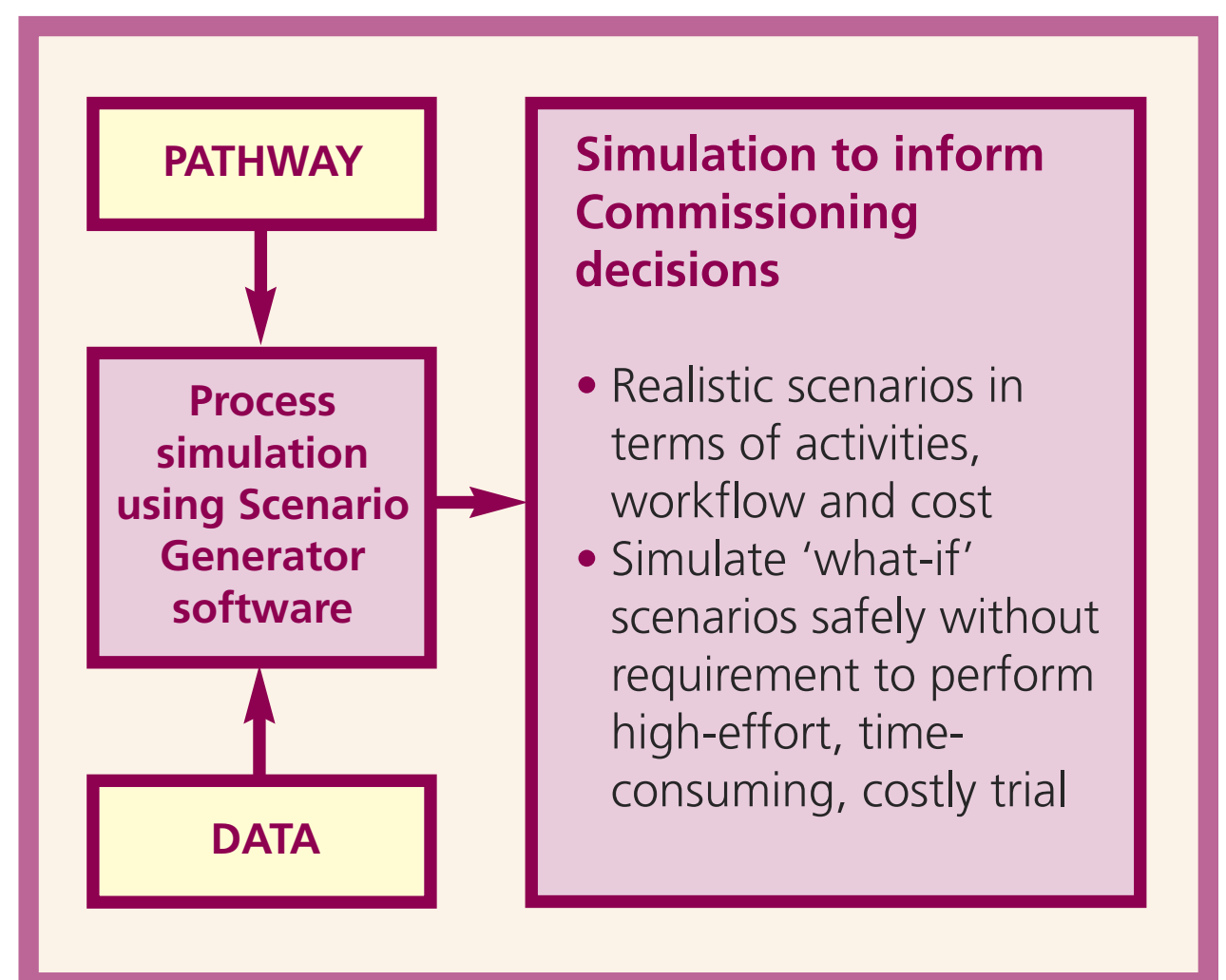
Using the process simulation software Scenario Generator, the current pathways across the six PCTs, with proportion of patients following each branch, were mapped and then the pathway costs calculated. The same was then done with the proposed new pathway to include serum natriuretic peptide testing. The resulting cost modelling was presented to commissioners and clinicians.

Strategy for change

The results of the cost modelling, the Pathology Commissioning Network implementation plans and the Cardiac Network information pack and education programme for clinicians were presented and all six PCTs agreed for this service to be taken forward with immediate effect.

Measurement of improvement

Full baseline data for the area was collected to provide information on cost reduction for the process modelling, the results showing a 25-40% reduction in costs (25% where there was provision of direct access echo, 40% where patients had to be referred to a cardiology clinic).



Effects of changes

B-natriuretic peptide testing has been implemented in three of the six PCTs with the next three due to implement shortly, improving clinical effectiveness by speeding up the diagnostic pathway whilst also reducing referrals for unnecessary echo and clinic appointments. With faster and more accurate diagnosis, patients are not subjected to unnecessary tests and can commence treatment earlier.

There were practical difficulties in providing the test across a wide geographical area whilst maximising efficiency by using centralised laboratory facilities. This was overcome by using courier services already in place, with only minor adjustments required.

Lessons learnt

Process simulation software is only as accurate as the data used, and there to inform (not make) decisions on process redesign. Plans are in place to repeat the cost modelling in five further network areas, covering more than 28 PCTs to facilitate the introduction of the test in accordance with NICE recommendations as quickly as possible.

Message for others

Process simulation of a pathway is an effective and persuasive tool for commissioners concerned about the possible implications of service improvements and showed convincing evidence of the cost savings that would result from the introduction of B-natriuretic peptide testing into the diagnostic pathway for heart failure, thus facilitating its commissioning.

Further information

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