

## The Osprey Project - an innovative programme training doctors as Clinical Systems Engineers in the NHS

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### Objective:

To test the effectiveness of training doctors in systems engineering principles who will then influence and improve health systems within their local health economies.

### Methods:

A two-year programme was set up in 6 strategic health authorities (SHAs) in the NHS (UK), starting in January 2004. Nine clinicians are being trained by Kate Silvester, a former ophthalmologist who subsequently trained in manufacturing systems engineering before rejoining the NHS. The programme has been delivered by 3 days training/month centrally with clinical systems engineers (CSEs) working on a full or part-time basis in the SHA. Most CSEs have continued a clinical commitment of between 1 and 2.5 days per week. An external researcher has evaluated the programme.

The specific aims of the programme are to:

- a) Develop skills of CSEs in systems engineering and change management.
- b) Support and influence senior directors and clinicians in organisations to increase efficiency and productivity through making operational and investment decisions based upon CSE principles.
- c) Use CSE techniques to support Primary Care Trusts (PCTs) in developing commissioning strategies that embed productivity and safety.
- d) Align with key national objectives and help organisations to achieve NHS Plan targets

### Results:

#### Achievements in the first year

- a) Skills and knowledge have transferred from Kate Silvester to the CSEs well. CSEs have developed skills quickly and have been able to translate concepts from industry to healthcare.
- b) There is considerable engagement between the CSEs and local clinical communities.
- c) Systems information (primarily in the form of SPC charts) has been integrated into decision-making processes at both Board and operational level.
- d) Projects have delivered significant service improvements, examples include reduction in the variation in discharges, reduction in the LOS of patients of < 8 days, reduction in the waiting times for ultrasound resulting in an annual saving of approx 6500 inpatient bed days and 420 weeks outpatient waiting time.

#### Lessons learnt from the first year of training

- a) The format of the training programme has provided vital learning and reflective space.
- b) Regular evaluation, feedback and reassessment during training together with the 'networks' between CSEs and SHA leads has been key to keeping the project on track.
- c) Individual projects have highlighted that influencing skills are critical. These were probably not concentrated upon enough in first year of training.
- d) CSEs being doctors has been important. The main benefits have been the ability of CSEs to use the same 'language' as other clinicians and to use peer-to-peer communication to influence their behaviour.
- e) It has been important for CSEs to work within a 'modernisation team'. CSEs working alone have found the experience more stressful. More than one CSE in a team has been helpful to those CSEs involved.
- f) The speed of success/results depends on the cultural context of the organisations CSEs have operated in. Leadership commitment and the readiness of the organisation for change has been critical.
- g) CSEs have found it easier to train and work within their own clinical systems or networks (SHA, PCT, or clinical area) since this gives greater clinical credibility and influence. This is helped further by the seniority of the CSE within the organisation. Balancing clinical and CSE work across two different geographical regions and clinical areas has been exceptionally difficult.

### Conclusions:

- a) The programme is on target at 15 months. No members of the programme have left.
- b) This model is effective in enabling doctors (CSEs) to learn systems engineering principles and these are being transferred by them to local clinicians and managers.
- c) Projects are delivering significant improvements in time, cost and quality in all organisations involved.