

# HIV Testing in the Emergency Department Is Sustainable and Low Cost

C. Liegeois, C. Rae, K. Lim, E. Lacey, J. Hardie, A. Crauford, M. Rayment, K. Pillay, S. Finlay, A. Sullivan  
Chelsea and Westminster NHS Foundation Trust, London, United Kingdom

## Background:

There were an estimated 98,400 individuals living with HIV infection in the UK in 2012, of whom 22% were unaware of their diagnosis.<sup>1</sup>

UK National guidelines for HIV testing in 2008 and the College of Emergency Guidelines in 2011 recommended routine HIV testing in areas with diagnosed HIV prevalence  $\geq 2/1000$ .<sup>2</sup> However there is little UK data on the effectiveness, sustainability and cost of such programmes.

Previous studies have shown that HIV testing in the Emergency Department (ED) is acceptable and feasible.<sup>3</sup> In 2011, we introduced routine HIV testing for patients aged 16-65 attending the ED at Chelsea and Westminster Hospital.

## Objectives:

Our aim was to evaluate the effectiveness of quality improvement (QI) interventions to increase HIV testing rates and establish the programme's sustainability, and to evaluate the costs of the ED HIV testing programme.

## Methods:

We report data collected since November 2012; ED activity, HIV testing rates and results and details of transfers of care. A multidisciplinary, cross-specialty team met weekly to implement plan-do-study-act (PDSA) QI interventions. Interventions included:

### Operational Changes

- Switching from salivary to blood sampling
- Introduction of nurse testing in addition to doctor-led testing

### Information Technology

- Electronic reminders-prompts incorporated within electronic patient records
- HIV test request option added onto ED routine requests list on ED 'home' screen

### Dedicated ED team working with local sexual health team

- Assignment of an enthusiastic ED team led by a consultant, composed of a registrar, a Foundation Year 2 doctor, a lead nurse and several nurses.
- Weekly analysis of data and report emailed by local sexual health team (SHT) informing ED team of preceding week's activity and results
- Weekly ED based meeting of ED and SHT to review report and plan PDSA interventions.

### Incentive scheme

- Best testers of the week highlighted and rewarded by a chocolate bar
- HIV Oscars: the 5 best testers during the Oscars week were given cinema tickets for "Dallas Buyer's Club"

### Feedback

- Informing testers about positive tests and the number of tests they had done during the last week.
- Weekly results available to the ED team in the Staff Room with number of tests per member

### Education & Training

- Regular HIV teaching for the nurses and doctors (on going throughout)

The local sexual health team managed results governance, patient notifications and transfer to care. Costs were calculated to include equipment, laboratory and ED and SHT staff time

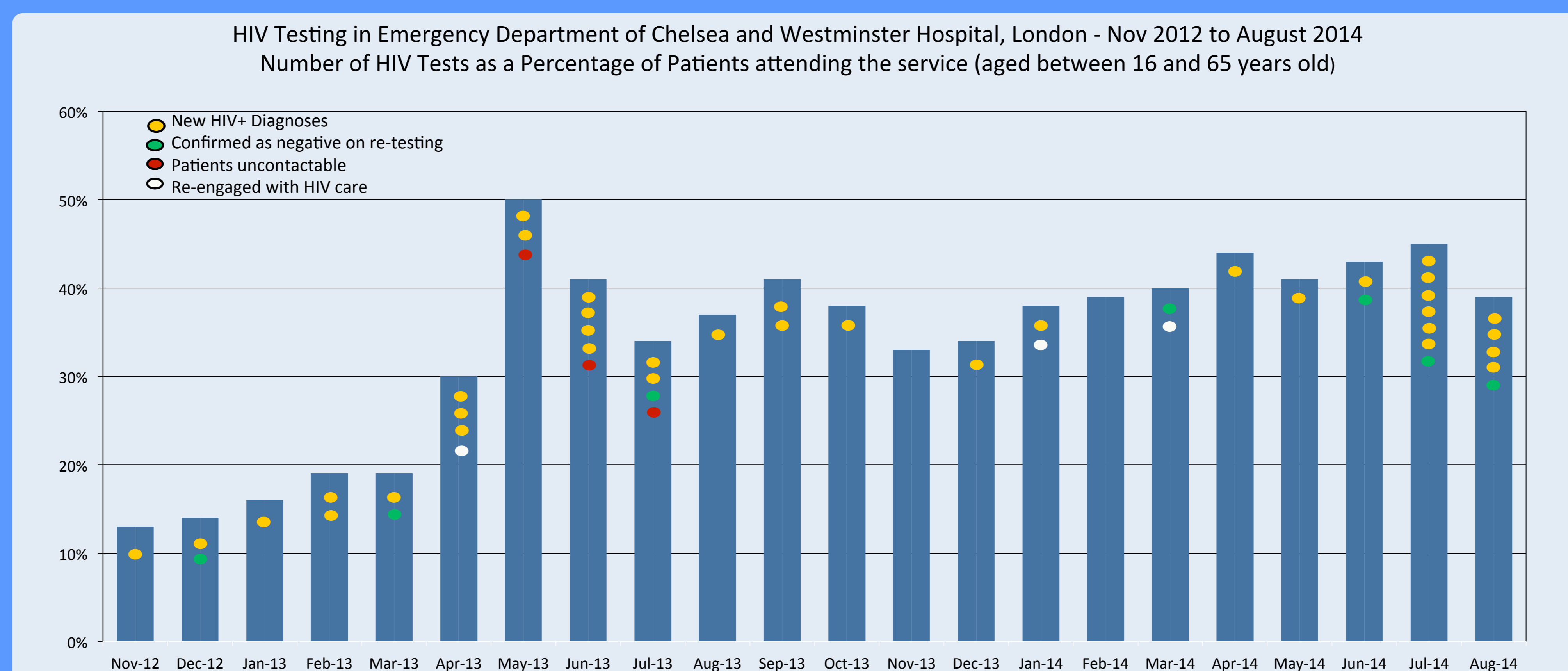
## Results:

Weekly testing rates increased significantly from 2% to 45% with a peak at 55% during May 2013 (Table 1). Statistical process control showed sustained increases following several interventions, i.e. changing from saliva to serology specimen, nurse testing, identifying HIV test departmental 'champions' with weekly chocolate bar awards, HIV Oscar week, feedback to staff on reactive tests.

Of 58 reactive tests, 36 were confirmed new diagnoses (2.8/1000). The median CD4 count was 272 cells/uL (range 13 to 1161). Of these 18 underwent RITA testing (recent infection testing algorithm); 11 (61%) were identified as being likely to have acquired the infection within the previous 4 months. Moreover, three patients who were already aware of their status were re-engaged with care.

Testing rates were unaffected by ED activity, however, staff issues such as junior doctors' changeover and levels of locum staffing had a clear impact.

The cost per new HIV diagnosis was estimated at £2147.99. The Department was awarded the Trust's Quality Award in Autumn 2013, recognizing the initiative's success.



## Conclusion:

Routine HIV testing in ED is feasible and effective. QI methodology was successful in producing a sustained increase in testing, however, our goal of 50% testing is still challenged by staff related issues. The high level of recent infection (61% compared to 21% reported nationally) suggests this may be an ideal setting to detect recent infection, as well as to help some HIV positive patients re-engage with care. The very low costs per new HIV infection detected via this embedded programme are likely to prove to be highly cost effective.

## References

- HIV in the United Kingdom: 2013 Report, PHE, Nov 2013
- BHIVA guidelines, September 2008
- Rayment et al. The HINTS (HIV Testing in Non Traditional Settings) Study, June 2012