What can be learnt from mapping new HIV diagnoses across a high prevalence city?

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Background and Method

Brighton & Hove was the first Fast Track City in the UK [4] and has an extremely high HIV prevalence, where 82% of the diagnosed population are men who have sex with men. We have previously reported a 50% fall in new HIV diagnoses from 2013 to 2017 in Brighton [1]. This compares to national data where new cases fell by 28% [2], and 46% in central London from 2015 to 2017 [3]. In order to better understand our local epidemic we are conducting geographic, demographic and clinical mapping of all new diagnoses.

New diagnoses of HIV were identified from electronic records and cross checked with paper and computerised notes for 2015-2018. Data were collected on patient and GP postcodes, demographics, baseline CD4 count, viral load and avidity. Results were plotted on a city map to look for geographical clusters.

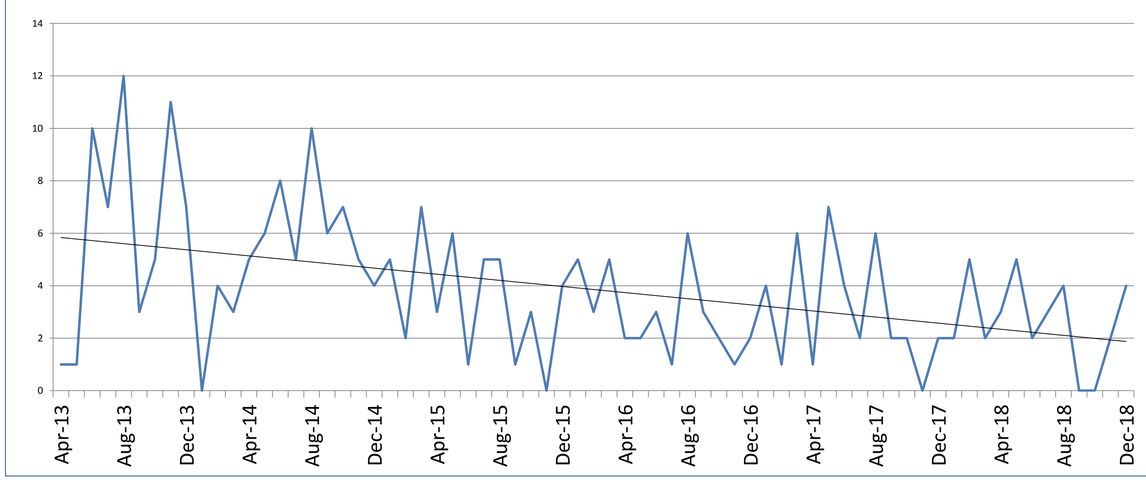
Results

The number of new diagnoses in Brighton declined from 76 in 2013 to 33 in 2018 (57% reduction).
Postcode mapping for new diagnoses between 2015 and 2018 revealed a diffuse distribution geographically with clustering in Kemptown, the central seafront area and central Hove. Higher numbers than expected were noted in the west of the city in the last 2 years.

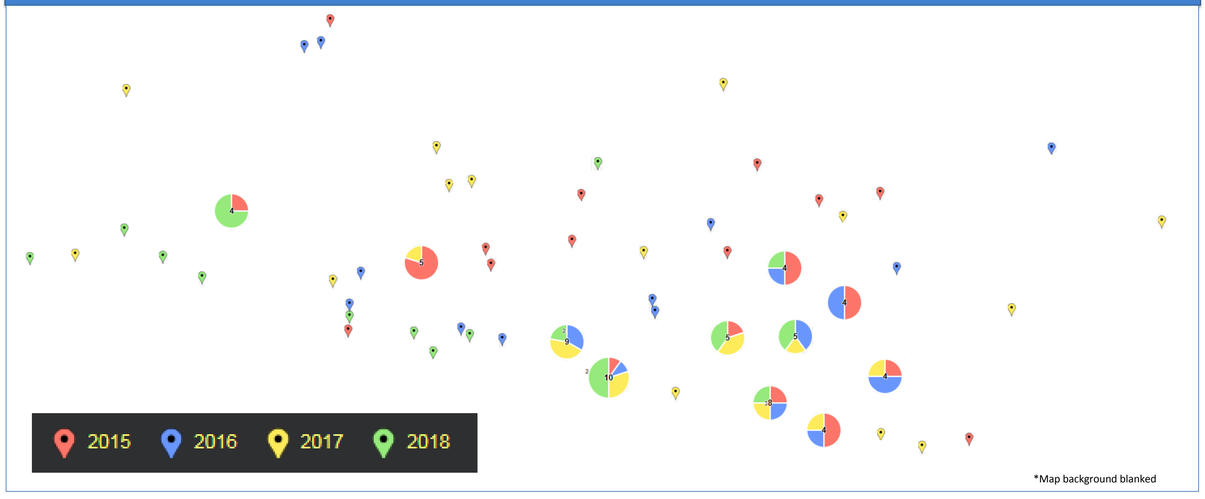
106/148 (72%) of the people newly diagnosed with HIV in the last 4 years were registered with a GP, at one of 28 practices. Clustering was noted in the primary care centres located by the main train station (which serves a large transient population with a walk in policy), near the gay venues and in central Brighton. 50/128 (39%) of the new diagnoses were confirmed to be incident by STARHS testing.

The median baseline CD4 count was 453 cells/mm ^{3}; 37% presented late (CD4 of <350 cells/mm^3) compared with 43% nationally in 2017 [5]. The median baseline viral load was 472, 555 copies/ml.

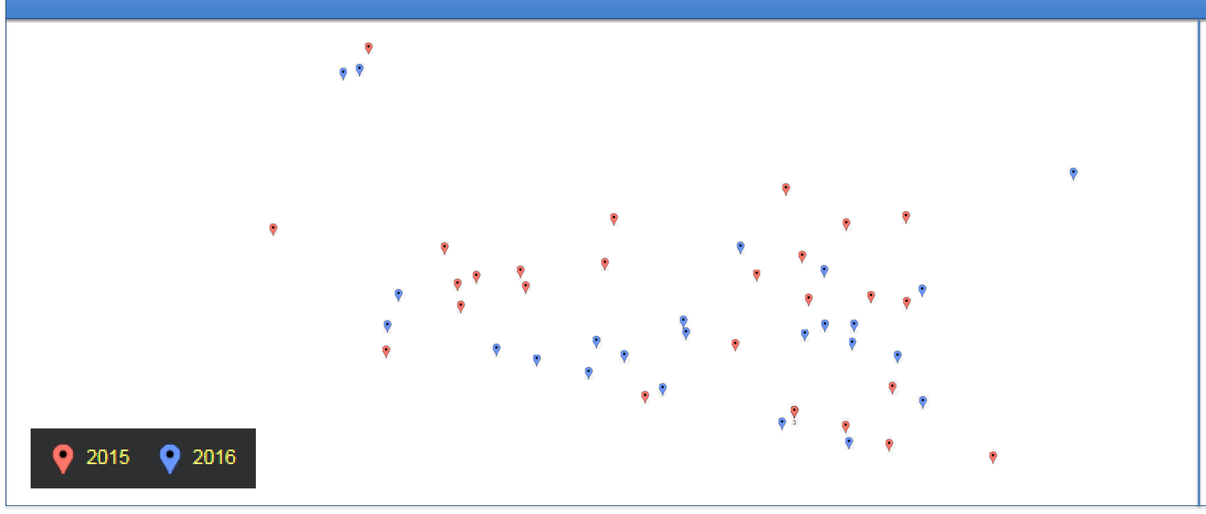
Numbers of New diagnoses in Brighton 2015-2018

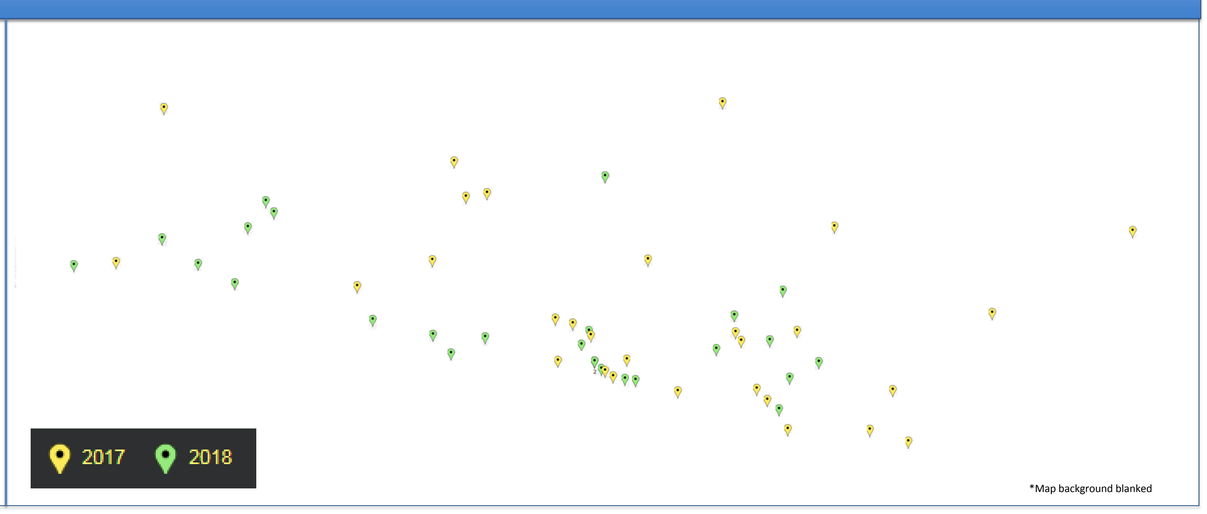


Clusters of New diagnoses in Brighton 2015-2018



Mapping of New diagnoses in Brighton 2015-2016 compared to 2017-18





Conclusions

These data demonstrate that individuals with HIV present early in Brighton with higher baseline CD4 counts; perhaps due to greater awareness of seroconversion symptoms in the local MSM population. The high median baseline viral load of 472, 555 copies/ml suggests a significant proportion had early infection.

This work has uncovered geographical clustering of the new infections in the city. Mapping these data will be useful in planning future HIV testing interventions, and directing resources to where they will be most effective. This information will be used to encourage GPs to increase testing in areas where clusters of new cases are resident.

Further analysis of patient demographics (age, ethnicity, sexuality) will help us more fully understand our epidemic and will be beneficial in working towards zero new HIV infections and zero HIV-related deaths by 2025 in Brighton & Hove [4].

References

1. *An earlier fall in new HIV diagnosis seen in Brighton prior to the 2017 PHE data for steep fall clinics in London. Dr Sarah Cavilla, Dr Gillian Dean, Dr Duncan Churchill. BHIVA poster, April 2018, Edinburgh*
2. *Trends in new HIV diagnoses and people receiving HIV-related care in the United Kingdom: data to the end of December 2017 [v2]Volume 12 Number 32 4 September 2018 Public Health England*
3. *Public Health England. HIV in the United Kingdom, 2017 report*
4. *Fast Track Cities Year 1 Report. November 2018. https://phantom.brighton-hove.gov.uk/Published/C00000826/M00008124/AI00070582/$Year1reportdraft1Final.docxA.ps.pdf (last accessed 27/03/2019)*
5. *Progress towards ending the HIV epidemic in the United Kingdom. 2018 report, Public Health England*