

STIs and LVHN: Using Billing Data as a Proof-of-Concept Tool to Inform a New LVHN STI Clinic in Decision Making.

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STIs and LVHN: Using Billing Data as a Proof-of-Concept Tool to Inform a New LVHN STI Clinic in Decision Making

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BACKGROUND

Population health is essential for a clinical health system to respond to disease threats.

Systematic tools are needed to assess a population for physician managers to understand baselines and changes.

Sexually transmitted infections (STIs) represent a model disease for the use of a population health tool.

LVHN is creating a new STI clinic at the 17th St. hospital.

We explore the use of billing data to create a public health dashboard for physician managers to understand the impact of STIs on patients of LVHN.

Methods

We queried de-identified billing records from the LVHN clinical database based on ICD9/10 codes for STIs between Fiscal Year 2011-2016.

Additional patient information included race, age, gender, geographic location, and facility type. Queries were completed by individual patient and by individual encounter.

We combined patient address with available US Census data that describes the demographics of the neighborhood the patient reports.

Pivot tables in Microsoft Excel were used for numerical analysis and ArcGIS for geographic visualization.

RESULTS

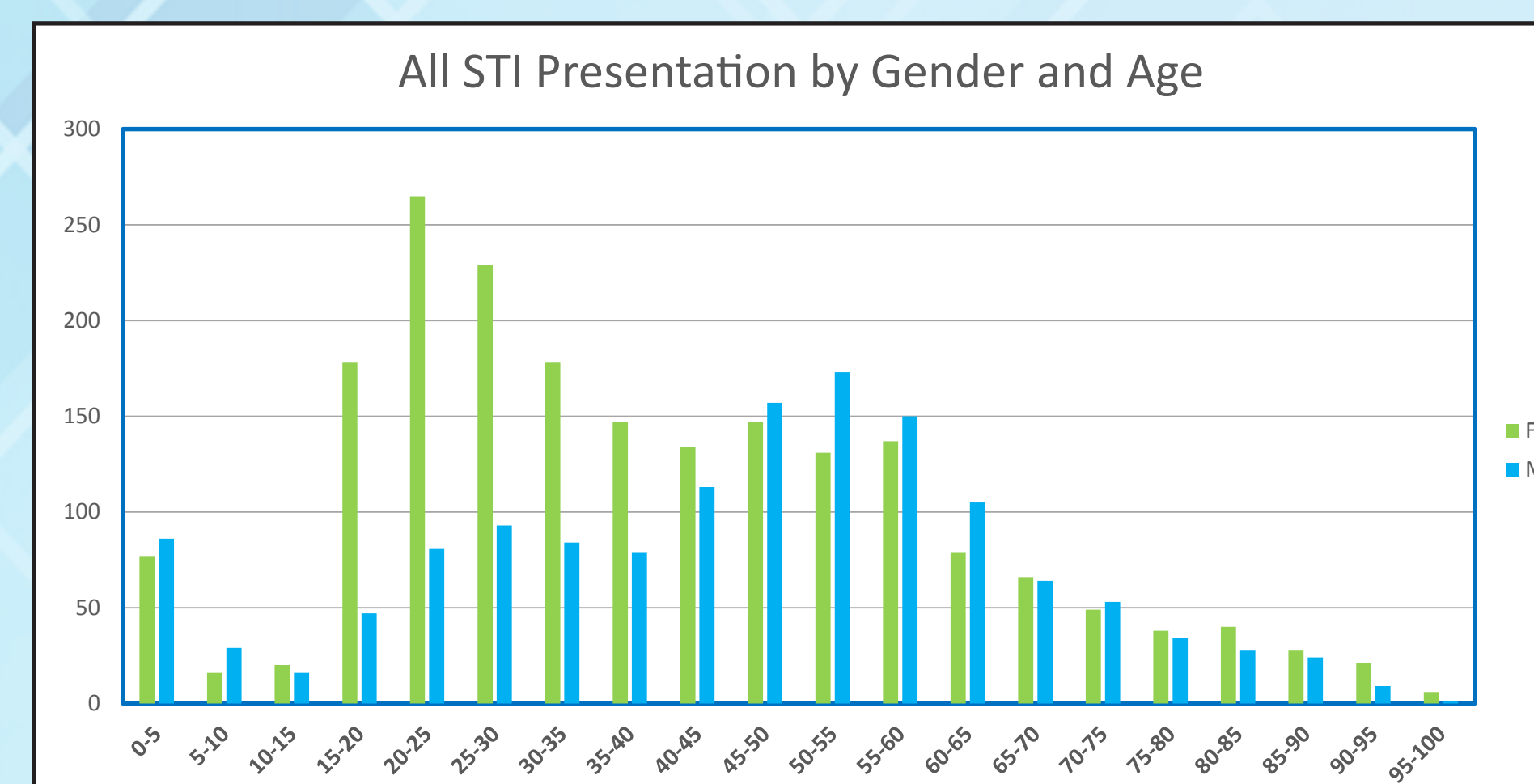


Figure 1. Basic demographics demonstrating a difference in gender ratios over different ages. There are two peaks: 15-25 driven by female patients, and 50-55 driven by male patients.

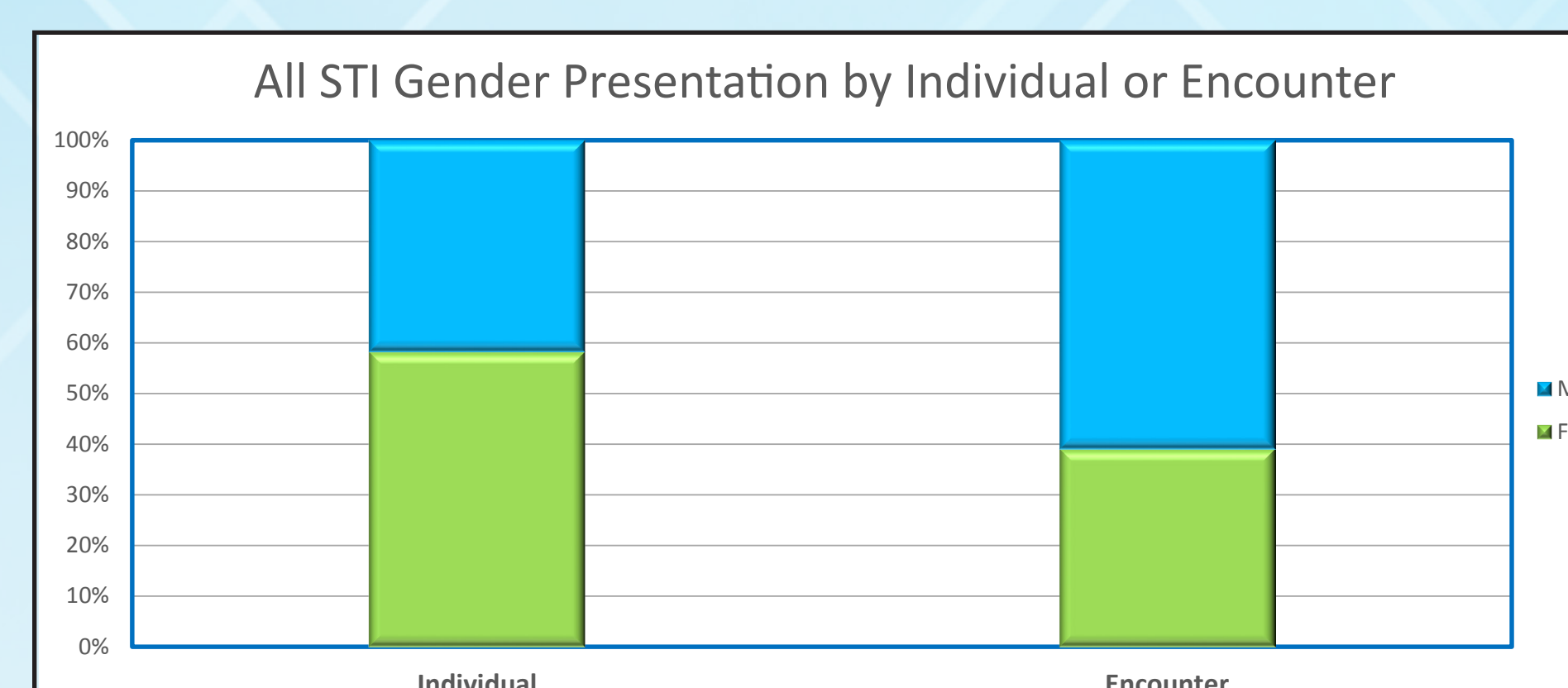


Figure 2. Gender ratios compared between individual patients and patient encounters. The gender ratios showing that more women seek care, but more encounters are for men.

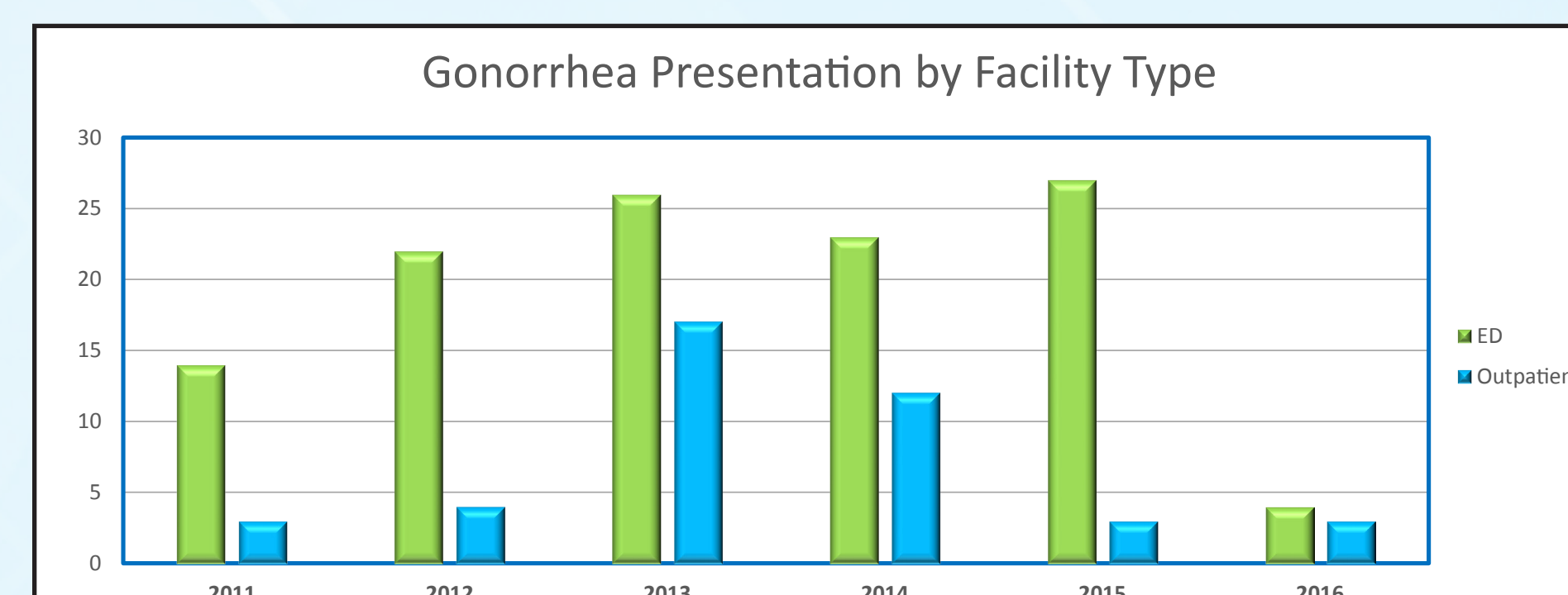
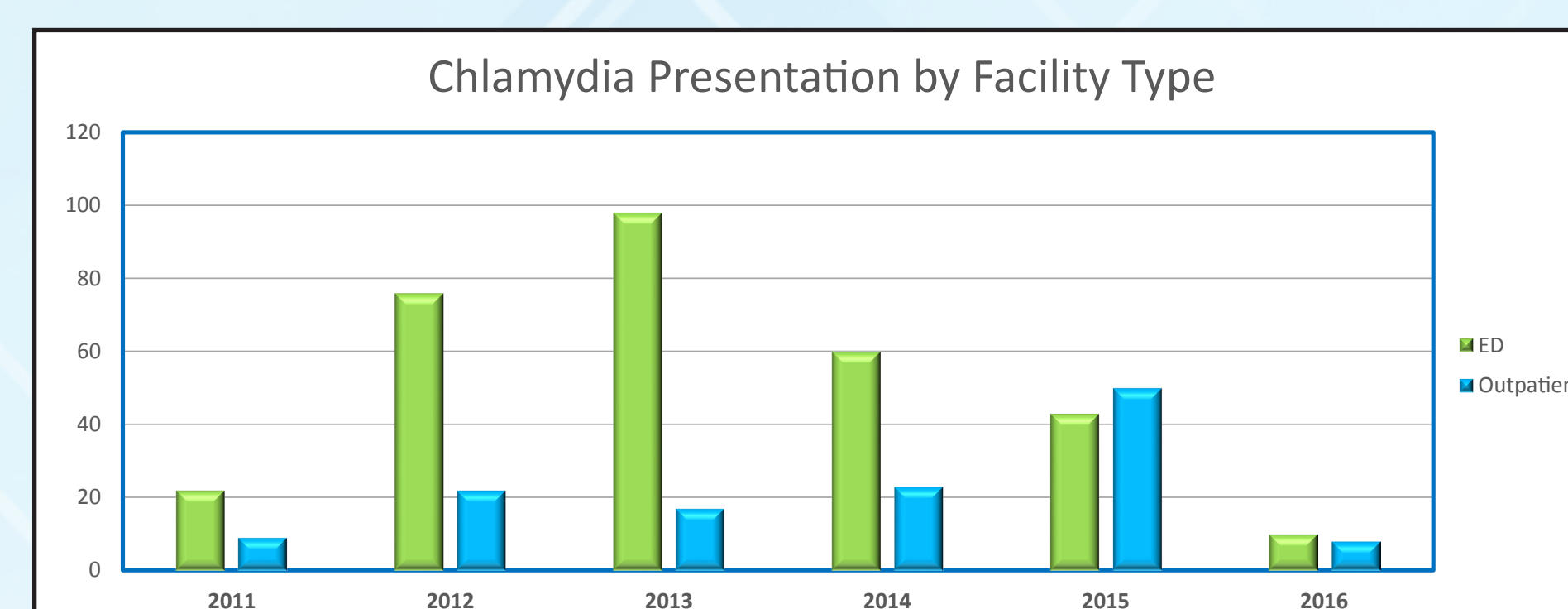


Figure 3. Presentation of chlamydia and gonorrhea to the ED and outpatient facilities. There is a rise and fall of chlamydia to the ED, with a continuous rise in outpatient visits. The opposite is true for gonorrhea with a continuous rise to the ED with a rise and fall in outpatient visits.

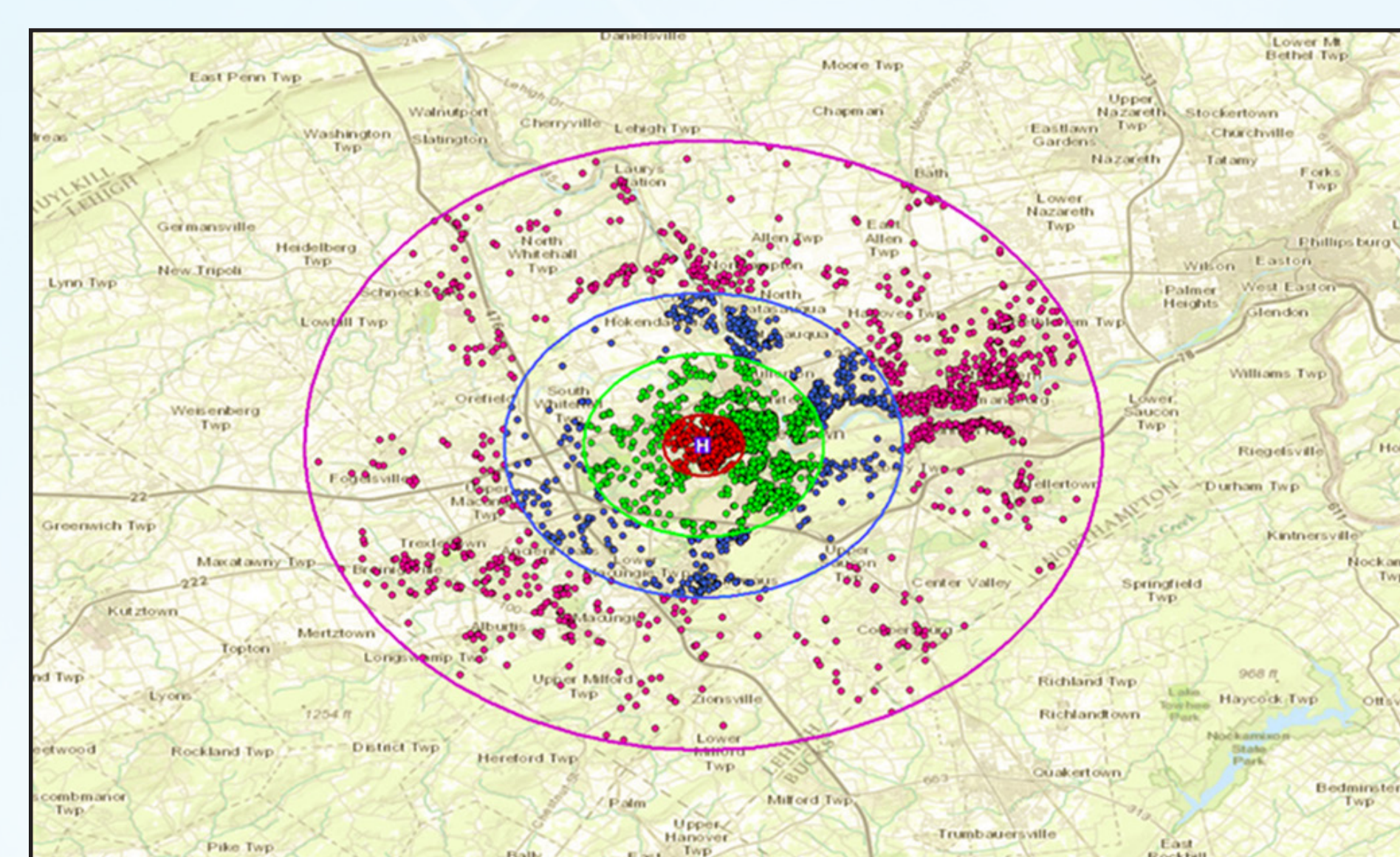


Figure 4. Map of all STIs seen at LVHN between FY 11-16 in a 1, 3, 5, and 10 mile radius from LVH-17th Street campus.

DISCUSSION

Drawbacks:

Billing data is a proxy for disease. Reflects changes in 1) disease, 2) population, 3) LVHN and 4) US policy.

Next Steps:

Validate the STI billing data demographic patterns against non-STI patterns.

Expand the clinical questions.

Compare findings from billing data to databases at other system levels.

Investigate other disease categories and develop other dashboards.

CONCLUSIONS

Dashboard is useful for displaying high level information about STIs at LVHN.

Dashboard can be created without IRB approval, dedicated software, and in a short time frame.

Basic Demographics, gender ratios, facility presentation should be key metrics in an STI dashboard.

Billing dashboard is best used in conjunction with surveys, chart review, and regional disease data from the health department.

REFERENCES:

- Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2015. Atlanta: U.S. Department of Health and Human Services; 2016.
- Population Health Management: A Roadmap for Provider-Based Automation in a new Era of Healthcare. Institute for Health Technology Transformation. Accessed 02 JUNE 2016.
- Eng TR, Butler WT, editors; Institute of Medicine (US). The hidden epidemic: confronting sexually transmitted diseases. Washington (DC): National Academy Press; 1997.

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