

# Development of a Monitoring and Evaluation Tool to Assess HIV Testing, Results and Linkage to Care within a Large Medical Center

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## Objective

Based in the Bronx, New York, Montefiore Medical Center (MMC) is the second largest hospital system in the New York City area and is in a period of great expansion. By 2014, MMC cared for more than 2,000,000 patients annually at sites that include 6 hospitals, 4 ERs and 23 CHCs. The HIV prevalence in the Bronx is 2% (2013), so MMC serves an epicenter of the HIV/AIDS epidemic in the US.

Montefiore has built an integrated service delivery system informed by innovative information technology tools. Since 2010, when New York State mandated the offer of HIV testing, MMC has initiated multiple strategies to ensure patients ages 13-64 are offered HIV testing when they visit any of its inpatient, outpatient or emergency sites.

Prior to this initiative, there was no easy way to systematically track HIV testing, results and linkage to care (LTC) of HIV positive patients across the institution, as different sectors had different data systems. To inform HIV monitoring and evaluation efforts, a data assessment tool drawing from existing MMC laboratory data was developed.

## Methods

In 2011, Montefiore's Adolescent AIDS Program began working with MMC's Care Management Organization to design an M&E tool tracking numerator data for HIV testing and positive diagnoses.

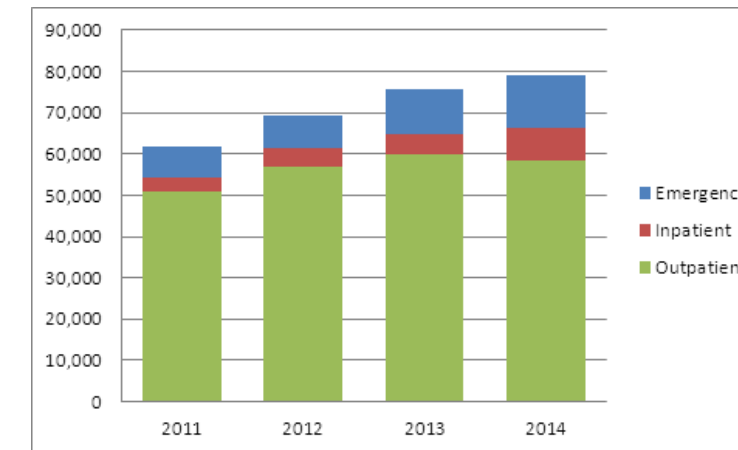
In 2014 the tool was expanded and refined, improving our ability to track LTC and more accurately identify newly diagnosed versus previously diagnosed HIV patients—an innovation that revealed almost half of MMC's HIV+ results were among those previously diagnosed but not engaged in care. That year, denominator data was also obtained using Clinical Looking Glass, a proprietary data system developed by MMC. Each indicator was validated by chart reviews and triangulated with existing data sources.

Refreshed monthly, the tool draws from MMC laboratory evidence of testing and results as well as CD4 and/or HIV Viral Load test results within three months of diagnosis as a proxy for linkage to care. The tool identifies both newly diagnosed and HIV+ patients who had fallen out of care but were relinked to care through routine testing efforts.

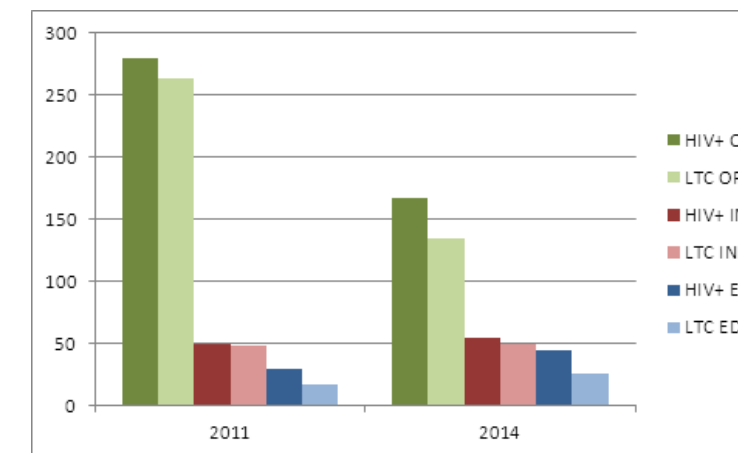
The data collected for this M&E tool was originally deemed exempt by the IRB and subsequent data modifications to the tool were approved by MMC's QI department.

## Results

HIV Testing at MMC



HIV+ Diagnosis and Linkage to Care at MMC



Using the tool MMC observed the following results:

- In 2011, 61,755 patients were tested, of whom 359 were HIV+ (.55% prevalence in the outpatient, 1.44% inpatient, and .30% ED) and 91% were linked to care at MMC.
- In 2014, 78,946 patients were tested, 296 of whom were HIV+ (.33% outpatient, .71% inpatient, .38% ED) and 79% were linked to care at MMC.
- 23 CHCs account for about half of all HCT in MMC's OPD. In those CHCs, about 28% of their patients are tested annually and 59% have ever been tested at MMC (2014).
- Previous use of all WB tests as proxies for HIV+ diagnoses found to overreport true number of HIV+ diagnoses due to false positives and duplicate tests.

## Conclusions

Creating effective monitoring/CQI tools at large, complex medical centers like MMC, which operates multiple inpatient, outpatient and emergency sites served by different data systems, requires creative problem solving skills and careful validation.

Numerator data is relatively easy to obtain but does not tell the whole story. The addition of denominator data gives M&E teams a better idea of QI successes and challenges, but in a hospital the size of MMC, this data is difficult to obtain and validate.

We also note that the only thing constant is change. To remain effective, M&E metrics must be updated whenever there are changes in:

- ◆ Testing Technologies
  - 4th Generation Tests allow for better tracking of acute HIV infections and true HIV+ diagnoses
  - Rapid HIV Test results can be in different places in EMR
- ◆ IT Systems
  - Data systems for labs, billing, scheduling, etc. can change/upgrade and thus invalidate data reports
  - New EMRs (like MMC's EPIC) can lack legacy data

In a highly iterative and incremental process of data collection and analysis, we have begun to identify segments of the institution's HIV treatment cascade that warrant quality improvement measures, including:

- ◆ Need for more HIV testing in the ED
- ◆ Need for better LTC for HIV+ ED patients
- ◆ Need for improvements in HIV testing at OPD sites

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