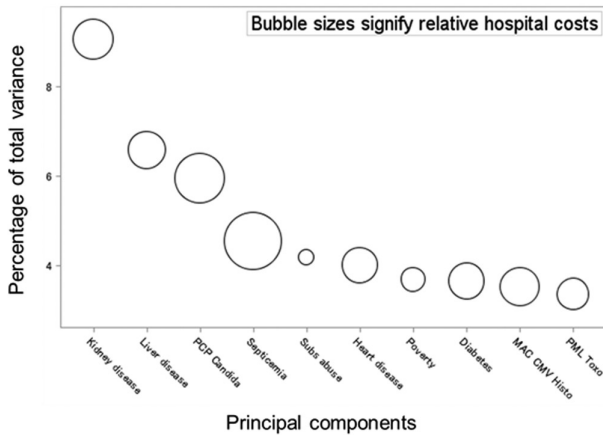HIV-related kidney and liver disease, as well as implementing strategies to promote early diagnosis and treatment of HIV.

Principal components and costs of HIV-associated hospitalization

1403. What Determines Do-Not-Resuscitate Status in Critically Ill HIV Patients?

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Background. Mortality and morbidity of people living with HIV have declined in the era of combination antiretroviral therapy (cART). However, Intensive Care Unit (ICU) admission rates remain high. In this study, we identified predictors of Do-Not-Resuscitate (DNR) status in critically ill HIV patients.

Methods. Retrospective cohort study of all first-time admissions of HIV-infected patients to five ICUs in Edmonton, Alberta from 2002 to 2014. Data collected included demographics, comorbidities, markers of HIV disease severity and control, admission diagnoses, severity of illness, organ failure, and DNR status. Multivariable logistic regression analysis was performed to identify factors associated with DNR status.

Results. During the study period, 282 patients were admitted to the ICU for the first time. Mean (SD) age was 44 (±10) years, 169 (60%) were male, 134 (48%) aboriginal, 153 (55%) co-infected with hepatitis C virus, and 184 (65%) had a history of polysubstance use. Median (IQR) CD4 count and viral load were 125 (30–300) cells/mm^{3} and 28,000 (110–270,000) copies/mL, respectively. Only 98 (35%) patients were receiving cART at the time of admission while 45 (16%) were newly diagnosed in the ICU. Most common admission diagnosis was sepsis 189 (64%), 213 (76%) received mechanical ventilation, 133 (47%) vasopressor support and 35 (12%) renal replacement therapy. Sixty-seven (24%) patients were DNR and support was withdrawn in 42 (15%).

In multivariable analysis, APACHE II score (adjusted odds ratio [aOR] 1.13; 95% CI, 1.08–1.19, $P < 0.001$), coronary artery disease (CAD) (aOR 5.7; 95% CI, 1.2–27.8, $P = 0.03$), prior opportunistic infection (OI) (aOR 2.6; 95% CI, 1.2–5.6, $P = 0.015$) and duration of HIV infection (aOR 1.07 per year; 95% CI, 1.01–1.14, $P = 0.025$) were independently associated with DNR status. Other factors such as ethnicity, HIV risk factor(s), CD4 count and viral load were not associated with DNR status.

Conclusion. In this relatively young cohort, one in four patients had DNR status during ICU admission. DNR designation was associated with severity of illness, along with CAD, prior OI, and duration of HIV infection. Future work should characterize the timing of patient DNR orders relative to ICU admission and describe patient and provider-specific factors that may influence decision-making towards DNR status.

1404. Hospitalization and Emergency Room Visits: The Opportunity for Re-Engagement for People Living with HIV/AIDS (PLWHA)

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Background. Persons living with HIV/AIDS (PLWHA) who are not engaged in HIV medical care are at greater risk for adverse individual health outcomes, as well as potential transmission to others. Thus, detecting and re-engaging PLWHA who are not in care is a public health priority. Unplanned hospitalizations or Emergency Department (ED) visits provide a potential opportunity to re-engage PLWHA who are out of care. Our Data-to-Care (D2C) pilot project was launched in July 2016 to identify PLWHA in the ED and inpatient settings and subsequently, establish re-engagement in HIV care (RIC) among those out of care.

Methods. Our D2C program leverages electronic health records (EHR) as a mechanism to identify PLWHA and support RIC. An Infectious Diseases social worker (SW) generates an EHR-based report daily to identify PLWHA in the hospital in near real-time, then determines whether a patient currently receives HIV care. If not, the SW meets with the patient to determine needs, insurance status, schedules an HIV care appointment, and provides referrals for wraparound services. SW subsequently confirmed attendance at HIV care appointment. RIC was defined as attending an HIV clinical appointment, and X^2 analyses were used to compare differences between RIC and not RIC.

Results. Over a 10-month period, we identified 237 PLWHA seen in the ED or hospitalized. The majority of patients were African-American (AA) (92.7%), male (66.1%) and mean age 44.6 ± 14.6 years old. Of the 237 patients identified, 172 (72.6%) confirmed already in care, 7 (3.0%) deceased, and 2 (0.8%) incarcerated. Among patients eligible for RIC, 44 (73.3%) were contacted by staff, 39 (65.0%) were referred to care, and 32 (53.3%) were RIC. Patients not RIC were all AA, 69.2% male, and mean age 38.5 ± 14.2 years old. Patients identified in the inpatient setting were more likely to be RIC vs. those identified in the ED (81.3% vs. 18.8%, $P < 0.01$). Interestingly, insurance type was not associated with RIC vs. not RIC ($P = 0.17$).

Conclusion. Our pilot program demonstrates the potential for using the EHR to identify PLWHA who are in need of RIC during unplanned hospitalizations and ED visits. Inpatients were more likely to be RIC than ED patients, likely due to the ability to make in-person contact during hospitalization compared with ED visit by SW staff.

1405. Healthcare Resource Utilization and Costs Associated with Switching First-line Antiretroviral Therapy among HIV-infected Patients in the United States

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Background. Initial antiretroviral therapy (ART) is modified for non-virologic failure reasons in many patients, and the healthcare resource utilization (HRU) and costs associated with these switches in the real world is not well understood.

Methods. Administrative claims data from the Optum Research and Impact National Benchmark Databases were utilized. Adult patients (≥18 years) with HIV-1 diagnosis code, and claim for an anchor agent of the protease inhibitor (PI) or non-nucleoside reverse transcriptase inhibitor (NNRTI) class in first-line ART between July 1, 2006 and December 31, 2015 were identified (see Figure 1 for addl. criteria). Patients with a claim for an anchor agent (PI or NNRTI) different from that in first-line ART were defined as switchers, with index date as date of first claim for new anchor agent. Switchers were matched to patients who did not switch (non-switchers) at 1:3 ratio using propensity score matching on patient and first-line ART characteristics. For non-switchers, date following corresponding duration of first-line ART in matched switcher was assigned as index date. Per-patient-per-month (PPPM) all-cause HRU and costs (US$) during switch period (±15 days of index date) were compared descriptively.

Results. 11,302 patients met study criteria. After matching, switcher (1,204) and non-switcher (3,612) groups were comparable on mean age (41.9 vs. 41.7 years), percent male (85.8% vs. 82.6%), percent commercial enrollee (96.0% vs. 95.8%), mean Quan-Charlson comorbidity index score (both 0.4), and mean ART pill burden (both 2.2) with standard difference less than absolute value of 10%. During switch period, switchers had higher mean PPPM ambulatory visits (2.30 vs. 1.26), emergency room visits (0.12 vs. 0.06), inpatient stays (0.04 vs. 0.01), and pharmacy fills (4.52 vs. 3.01) than non-switchers (all $P < 0.001$). Switchers also incurred greater mean PPPM costs during switch than non-switchers, with an additional $2,261/month total cost, and $1,031/month pharmacy cost (Figure 2).

Conclusion. The study gives a more complete view of the burden of switching initial ART with pharmacy costs driving this burden. Assuming some patients will switch regardless of the regimen selected, less expensive initial ART could reduce this burden further.