

HIV/AIDS Emergency Department Visits 2009–2014

Improved medication regimens have led to better quality of life and increased longevity for people living with HIV disease (PLWHA). However, PLWHA continue to experience opportunistic infections, HIV/AIDS-related cancers, and other consequences of living with untreated disease. For PLWHA on treatment, long-term antiretroviral therapy can lead to side effects. With more than one third of PLWHA in the U.S. over the age of 50 years, aging-associated illnesses such as cardiovascular disease and diabetes are increasing common among people living with HIV disease.

Hospital emergency department (ED) visit data allow us to understand outpatient health care utilization among PLWHA. Hospitals use diagnostic codes to indicate the reasons for a patient’s ED visit. The primary diagnosis code indicates the main reason for an ED visit. If a patient visits a hospital ED for the treatment of an HIV-related illness, the primary diagnosis code will be for HIV and the ED visit is considered a primary HIV ED visit. If a patient living with HIV disease visits an ED for an unrelated condition, this condition is listed as the primary diagnosis and, if the patient’s HIV status is known, HIV is listed as an additional diagnostic code. These types of ED visits among PLWHA are classified as secondary HIV ED visits.

ED visit data reported by hospitals located in Illinois are captured in two different data sets. One data set includes patients who visited the emergency department and were subsequently discharged from the hospital. The other data set contains data on patients who were hospitalized and includes a code to indicate if a patient was admitted to the hospital from the ED. To capture the total number of ED visits, data from these two data sets are combined. However, these data represent patients with different underlying health status and hospital utilization and thus, some of the analyses presented here are limited to patients who only visited the ED and were not admitted to the hospital for further treatment.

Data are not de-duplicated; therefore, ED visits do not represent unique individuals. Individuals who did

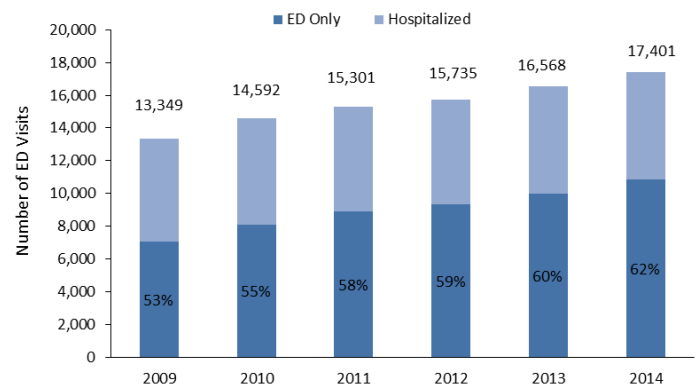
not reside in Illinois at the time of their ED visit were excluded from all analyses.*

All Emergency Department Visits

Among patients who visited the ED with any mention of HIV disease during 2009–2014, 58.3% were discharged from the ED and 41.7% were hospitalized. From 2009 to 2014, of PLWHA who visited a hospital ED, the proportion who were hospitalized declined from 47% to 38% (Figure 1).

An overall increase in the total number of ED visits among PLWHA during 2009–2014 was seen. This likely reflects the increase in HIV prevalence in Illinois during this time period (30,655 PLWHA in 2009 compared to 36,275 in 2014) and is consistent with national trends of increased ED visits in the U.S. population overall (Weiss et al., 2014).

Figure 1. Number of ED Visits and Proportion Hospitalized among PLWHA, Illinois, 2009–2014



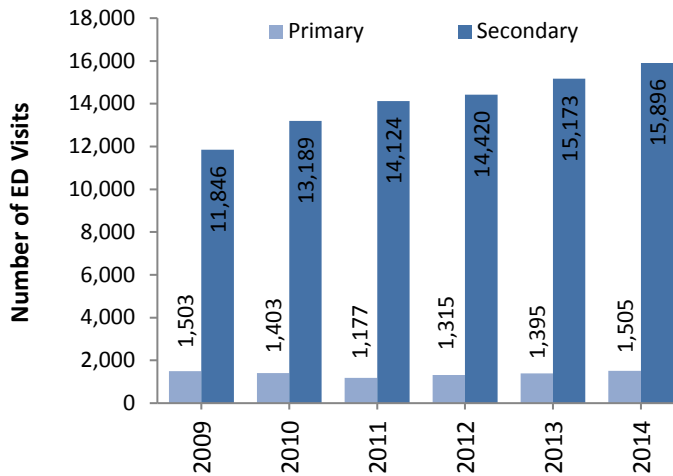
Source: Illinois Department of Public Health, Hospital Discharge Data

During 2009–2014, the majority of ED visits among PLWHA were secondary HIV visits (where HIV was not the primary reason for the ED visit) (Figure 2) with less than 10% of visits with HIV listed as the primary reason for the visit.

*923 ED visits where the patient’s ZIP code indicated that the patient did not reside in Illinois were excluded from all analyses



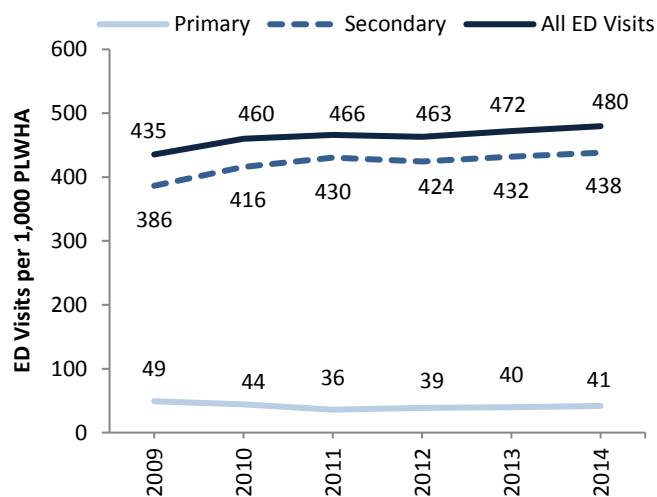
Figure 2. Number of Primary and Secondary HIV ED Visits, Illinois, 2009–2014



Source: Illinois Department of Public Health, Hospital Discharge Data, 2009–2014

To determine the annual rate of ED visits among PLWHA in Illinois, the annual number of ED visits was divided by the number of PLWHA (Figure 3) at the end of each calendar year (estimated from the Illinois HIV/AIDS registry). In 2014, there were an estimated 480 ED visits per 1,000 PLWHA in Illinois (Figure 3). From 2009 to 2014, the overall rate of primary HIV ED visits declined; however, the rate of HIV visits for other causes among PLWHA increased.

Figure 3. ED Visit Rates among Persons Living with HIV Disease by Year, Illinois, 2009–2014

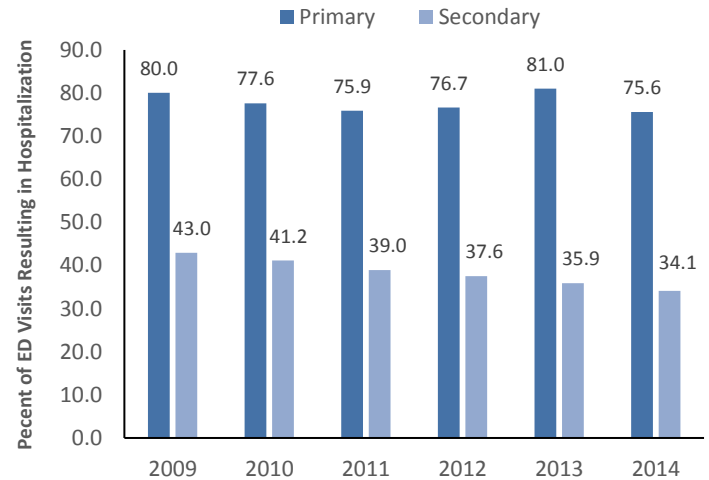


Source: Illinois Department of Public Health, Hospital Discharge Data and HIV Surveillance Data 2009–2014

Among PLWHA who visited the ED, those with a primary HIV diagnosis were much more likely to be hospitalized than PLWHA who visited the ED for a non-HIV diagnosis (Figure 4). The proportion of

primary HIV ED visits that resulted in hospitalization fluctuated during 2009–2014, but a downward trend in the number of PLWHA who visited the ED for other reasons and were hospitalized occurred from 2009 to 2014 (43% to 34%).

Figure 4. Proportion of ED Visits among PLWHA Resulting in Hospitalization by Primary and Secondary HIV Diagnosis, Illinois, 2009–2014



Source: Illinois Department of Public Health, Hospital Discharge Data

Outpatient ED Visits

The rest of this fact sheet will focus on outpatient data only (i.e., patients who visited the ED and were subsequently discharged from the ED). Data on trends in hospitalization among PLWHA can be found in the IDPH fact sheet “Hospitalization Trends among PLWHA” (IDPH, 2017).

Primary Reason for Visit

The Agency for Healthcare Research and Quality has developed a system to collapse the large number of diagnostic codes into a smaller number of clinically meaningful categories (AHRQ, 2016). This clinical classification scheme was utilized to look at the reason for ED visits among PLWHA.

Among PLWHA who visited the ED and were discharged, the most common diagnosis was chest pain, followed by abdominal pain (Table 1). However, these diagnoses accounted for only 9–12% of ED visits among PLWHA highlighting the variety of different conditions for which PLWHA visit the ED.

Table 1. Primary Diagnosis Associated with ED Visits among PLWHA Discharged from the ED, Illinois, 2009–2014

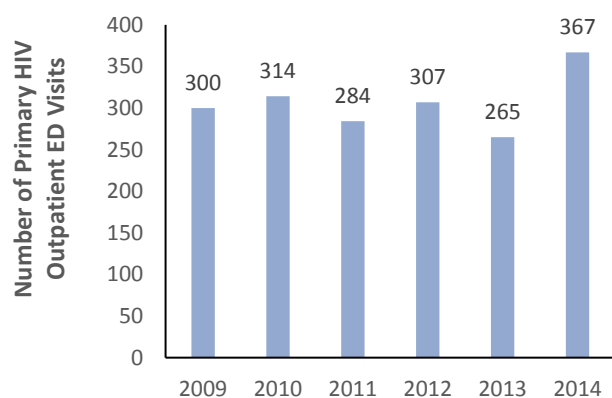
Rank	2009	#	%	2012	#	%	2014	#	%
1	Chest pain	362	5.1	Chest pain	600	6.4	Chest pain	720	6.6
2	Abdominal pain	306	4.3	Abdominal pain	499	5.4	Abdominal pain	543	5.0
3	HIV infection	300	4.3	Skin infection	320	3.4	Back problem	385	3.6
4	Skin infection	278	3.9	Headache/migraine	317	3.4	HIV infection	367	3.4
5	Other upper respiratory infection	241	3.4	HIV infection	307	3.3	Other upper respiratory infection	316	2.9
6	Alcohol-related	216	3.1	Back problem	266	2.9	Alcohol-related	314	2.9
7	Headache/migraine	194	2.7	Other upper respiratory infection	250	2.7	Other connective tissue	310	2.9
8	Superficial injury; contusion	189	2.7	Sprain	224	2.4	Skin infection	305	2.8
9	Back problem	178	2.5	Superficial injury; contusion	212	2.3	Other lower respiratory disease	288	2.7
10	Sprain	172	2.4	Other GI disease	210	2.3	Headache/migraine	276	2.5
11	COPD	171	2.4	Other lower respiratory disease	207	2.2	Asthma	225	2.1
12	Other connective tissue	165	2.3	Asthma	201	2.2	Superficial injury; contusion	225	2.1
13	Other lower respiratory disease	160	2.3	COPD	199	2.1	UTI	223	2.1
14	Mood disorders	153	2.2	Other connective tissue	199	2.1	COPD	221	2.0
15	Asthma	150	2.1	UTI	195	2.1	Mood disorders	220	2.0

Source: Illinois Department of Public Health, Hospital Discharge Data, 2009–2014

Primary HIV Outpatient ED Visits

Among outpatient ED visits, HIV infection as the primary reason for the visit accounted for 3.2–4.3% of visits during 2009–2014 (Table 1) with <350 primary outpatient HIV ED visits annually (Figure 5). Part of the reason the number is low is the high proportion of hospitalization for persons with a primary HIV diagnosis (Figure 4).

Figure 5. Number of Primary HIV Outpatient HIV ED Visits, Illinois, 2009–2014



Source: Illinois Department of Public Health, Hospital Discharge Data, 2009–2014

At least two diagnostic codes are needed for complete diagnostic coding of patients with a primary HIV ED visit. The first code indicates that the primary reason the patient visited the ED was for HIV disease and the subsequent code indicates the condition associated with the HIV diagnosis. During 2009–2014, the most common condition associated with primary HIV outpatient ED visits in Illinois was mycoses.

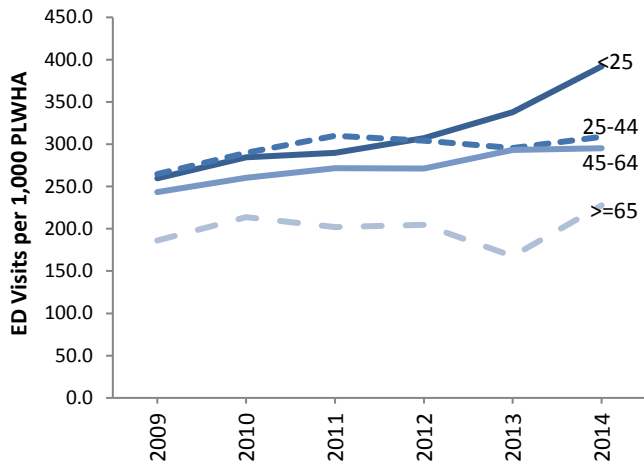
All-Cause Outpatient ED Visits

The following analyses look at all outpatient ED visits among PLWHA, regardless of the reason for the ED visit, to understand overall outpatient ED utilization among PLWHA in Illinois.

Age Group

The rate of outpatient ED visits among PLWHA increased among all age groups from 2009 to 2014 (Figure 6). The highest ED visit rate during 2012–2014 was among PLWHA aged <25 years. Higher ED visit rates among this younger population may reflect higher rate of HIV disclosure, a pattern of using the ED as the primary place of care, or other age-specific behaviors. Nationally, ED visit rates among the general population were highest among children <1 year and adults >85 years (Weiss et al, 2014).

Figure 6. Rate of All-Cause Outpatient ED Visits among PLWHA by Age Group and Year, Illinois, 2009–2014

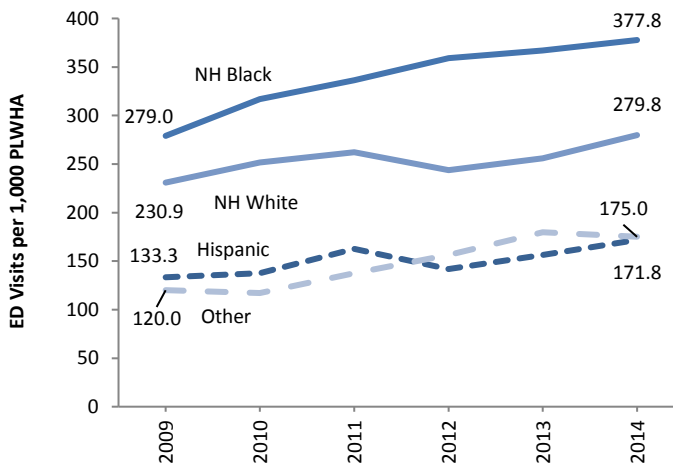


Source: Illinois Department of Public Health, Hospital Discharge Data and HIV Surveillance Data 2009–2014

Race/Ethnicity

ED visit rates among all racial/ethnic groups increased from 2009 to 2014 (Figure 7). Non-Hispanic (NH) black PLWHA had the highest rate of ED visits compared to other racial/ethnic groups across this time range. In 2014, the rate of outpatient ED visits was lowest among Hispanic PLWHA. This may be due to lower disclosure or unknown HIV status in this population. However, hospitalization rates were also lower in this population (IDPH, 2017).

Figure 7. Rate of All-Cause Outpatient ED Visits among PLWHA by Race/Ethnicity and Year, Illinois, 2009–2014

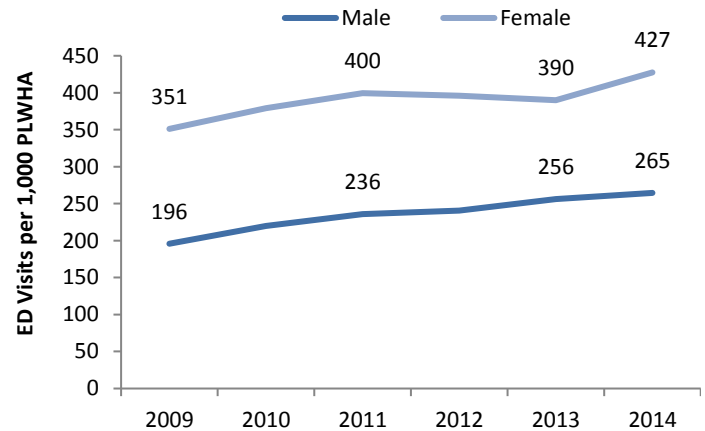


Source: Illinois Department of Public Health, Hospital Discharge Data and HIV Surveillance Data 2009–2014

Sex

The number of HIV ED visits was higher among males than females from 2009–2014, reflecting the higher prevalence of HIV disease among males (data not shown). However, the rate of ED visits among PLWHA was almost two times higher among females than males across the entire time period (Figure 9).

Figure 9. Rate of All-Cause Outpatient ED Visits among PLWHA by Sex and Year, Illinois, 2009–2014

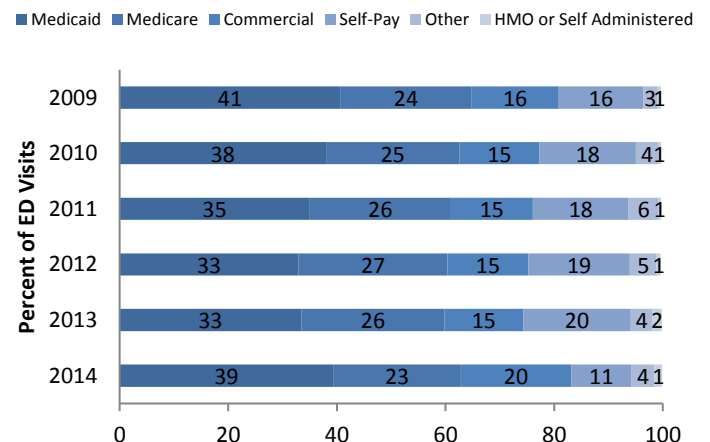


Source: Illinois Department of Public Health, Hospital Discharge Data and HIV Surveillance Data 2009–2014

Primary Payer

The primary payer indicates the expected first payer for ED visit charges. During 2009–2014, Medicaid was the primary payer for the highest proportion of ED visits among PLWHA, followed by Medicare. No major changes in the primary payer for ED visits were observed during 2009–2014.

Figure 10. Primary Payer of All-Cause Outpatient HIV Visits among PLWHA by Year, Illinois, 2009–2014



Source: Illinois Department of Public Health, Hospital Discharge Data, 2009–2014

Summary

ED visit rates among PLWHA in Illinois increased during 2009–2014, with higher ED visit rates among young adults <25 years, women and NH blacks. HIV diagnosis in the emergency department setting may be underreported. It is important that ED providers keep in mind that PLWHA may present with a variety of conditions and that patients may not disclose their HIV status during an ED encounter.

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