00769

HIV care outcomes among foreign-born persons with diagnosed HIV infection, 2019

Tebitha Tendai Mawokomatanda[1], Sonia Singh[1], Eduardo Valverde[1]
[1]Centers for Disease Control and Prevention, Atlanta, Georgia, USA

BACKGROUND

- In 2010, foreign-born (FB) persons accounted for 13% of the US population and 16% of HIV diagnoses.
- Monitoring HIV diagnoses by region of birth (RoB) may assist in identifying culturally sensitive approaches to improve and optimize care outcomes

OBJECTIVE

- To determine status of HIV care outcomes among the foreign-born population

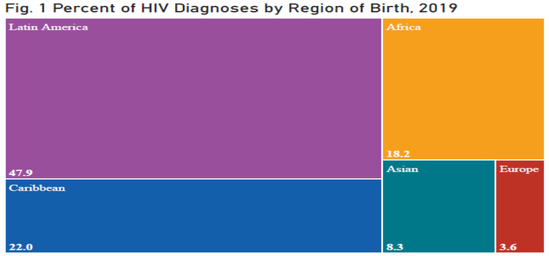
METHODS

We used NHSS data for persons aged ≥13 years with an HIV diagnosis made during 2019 and reported to CDC by December 2020 in 45 US areas.

We compared the percentage of HIV stage 3 (AIDS) at time of diagnosis, percentage of persons linked to medical care within 1 month of diagnosis, and viral suppression (VS) within 6 months of diagnosis in 2019 among FB persons.
We stratified data by RoB (Africa, Asia, Caribbean, Europe, Latin America, America), sex at birth, age at diagnosis, transmission category, and population area of residence.

Definitions: We defined FB persons as anyone who was born outside the US and US 6 dependent areas. HIV stage 3 (AIDS) at time of diagnosis was measured by a documentation of an AIDS-defining condition or either a CD4 count of <200 cells/μL or a CD4 percent of total lymphocytes of <14 within 3 months after the diagnosis of HIV infection. Linkage to care was determined by a documentation of ≥1 CD4 (count or percent) or viral load (VL) tests performed ≤1 month after HIV diagnosis. VS was determined by a VL result of <200 copies/mL at any VL test within 6 months of the HIV diagnosis.

Fig. 1 Percent of HIV Diagnoses by Region of Birth, 2019



HIV care outcomes varied by region of birth, sex at birth, age at diagnosis, transmission category, and population area of residence. Overall, foreign-born persons have better outcomes than US-born persons in linkage to care and viral suppression, but have higher percentages of late-stage diagnosis stage 3

Table 1. Stage 3 (AIDS)* at time of HIV diagnosis during 2019 among foreign-born persons aged ≥ 13 years, by global region of birth and selected characteristics — 44 states† and the District of Columbia, United States, 2019

	Africa			Asia			Caribbean			Europe			Latin America			Total Foreign-Born			US-born		
	Total	Stage 3 (AIDS)		Total	Stage 3 (AIDS)		Total	Stage 3 (AIDS)		Total	Stage 3 (AIDS)		Total	Stage 3 (AIDS)		Total	Stage 3 (AIDS)		Total	Stage 3 (AIDS)	
Characteristic	No.	No.	%	No.	No.	%	No.	No.	%	No.	No.	%	No.	No.	%	No.	No.	%	No.	No.	%
Sex at birth																					
Female	524	131	25.0	55	18	32.7	352	85	24.1	36	9	25.0	299	74	24.7	1,266	317	25.0	3,312	626	18.9
Male	393	126	32.1	361	109	30.2	762	193	25.3	143	18	12.6	2,111	548	26.0	3,770	994	26.4	15,237	2,899	19.0
Age at diagnosis (yr)																					
13-24	82	19	23.2	61	13	21.3	121	16	13.2	13	1	7.7	325	38	11.7	602	87	14.5	4,313	334	7.7
25-34	196	44	22.4	131	33	25.2	285	51	17.9	64	6	9.4	910	211	23.2	1,586	345	21.8	6,803	1,057	15.5
35-44	270	87	32.2	106	33	31.1	252	65	25.8	52	9	17.3	668	190	28.4	1,348	384	28.5	3,222	777	24.1
45-54	192	56	29.2	75	29	38.7	220	62	28.2	32	7	21.9	360	123	34.2	879	277	31.5	2,341	734	31.4
≥55	177	51	28.8	43	19	44.2	236	84	35.6	18	4	22.2	147	60	40.8	621	218	35.1	1,870	623	33.3
Transmission category§,¶																					
Male-to-male sexual contact	195	52	26.7	312	88	28.2	535	104	19.4	120	14	11.7	1,854	436	23.5	3,016	694	23.0	12,262	2,178	17.8
Injection drug use	30	12	40.0	15	6	40.0	27	9	33.3	4	1	27.5	49	20	40.8	125	48	38.5	1,426	289	20.3
Male	11	5	45.5	11	5	45.5	15	7	46.7	3	0	-	36	16	44.4	76	33	43.6	756	186	24.6
Female	19	7	36.8	4	1	25.0	12	2	16.7	1	1	100.0	13	4	30.8	49	15	30.6	670	103	15.4
Male-to-male sexual contact with injection drug use	5	1	20.0	10	6	60.0	9	2	22.2	5	1	20.0	38	12	31.6	67	22	32.8	886	141	15.9
Heterosexual contact#	676	185	27.4	76	27	35.5	543	163	30.0	48	11	22.9	465	153	32.9	1,808	539	29.8	3,952	910	23.0
Male	177	64	36.2	26	10	38.5	203	80	39.4	14	3	21.4	181	83	45.9	601	240	39.9	1,317	389	29.5
Female	499	121	24.2	50	17	34.0	340	83	24.4	34	8	23.5	284	70	24.6	1,207	299	24.8	2,635	521	19.8
Population area of residence																					
Metropolitan statistical areas (500,000+)	817	227	27.8	375	114	30.4	1,039	255	24.5	158	22	13.9	2,158	550	25.5	4,547	1,168	25.7	14,489	2,638	18.2
Metropolitan area (50,000-499,999)	58	16	27.6	26	6	23.1	54	18	33.3	14	3	21.4	152	47	30.9	304	90	29.6	2,523	526	20.8
Nonmetropolitan area (<50,000)	32	12	37.5	11	5	45.5	18	5	27.8	6	2	33.3	82	23	28.0	149	47	31.5	1,267	321	25.3
Other/unknown	10	2	20.0	4	2	50.0	3	-	0	1	-	0	18	2	11.1	36	6	16.7	270	40	14.8
Total	917	257	28.0	416	127	30.5	1,114	278	25.0	179	27	15.1	2,410	622	25.8	5,036	1,311	26.0	18,549	3,525	19.0

Table 2. Linkage to HIV medical care within 1 month of diagnosis during 2019 among foreign-born persons aged ≥ 13 years, by global region of birth and selected characteristics — 44 states† and the District of Columbia, United States, 2019

	Africa			Asia			Caribbean			Europe			Latin America			Total Foreign-Born			US-born		
	Total	Linkage to Care		Total	Linkage to Care		Total	Linkage to Care		Total	Linkage to Care		Total	Linkage to Care		Total	Linkage to Care		Total	Linkage to Care	
Characteristic	No.	No.	%	No.	No.	%	No.	No.	%	No.	No.	%	No.	No.	%	No.	No.	%	No.	No.	%
Sex at birth																					
Female	524	455	86.8	55	43	78.2	352	301	85.5	36	26	72.2	299	260	87.0	1,266	1,085	85.7	3,312	2,645	79.9
Male	393	334	85.0	361	316	87.5	762	677	88.8	143	121	84.6	2,111	1,866	88.4	3,770	3,314	87.9	15,237	12,442	81.7
Age at diagnosis (yr)																					
13-24	82	67	81.7	61	55	90.2	121	108	89.3	13	8	61.5	325	286	88.0	602	524	87.0	4,313	3,420	79.3
25-34	196	164	83.7	131	119	90.8	285	251	88.1	64	50	78.1	910	800	87.9	1,586	1,384	87.3	6,803	5,508	81.0
35-44	270	238	88.1	106	86	81.1	252	221	87.7	52	45	86.5	668	599	89.7	1,348	1,189	88.2	3,222	2,638	81.9
45-54	192	162	84.4	75	65	86.7	220	191	86.8	32	30	93.8	360	310	86.1	879	758	86.2	2,341	1,962	83.8
≥55	177	158	89.3	43	34	79.1	236	207	87.7	18	14	77.8	147	131	89.1	621	544	87.6	1,870	1,559	83.4
Transmission category§,¶																					
Male-to-male sexual contact	195	164	84.1	312	275	88.1	535	483	90.3	120	102	85.0	1,854	1,640	88.5	3,016	2,664	88.3	12,262	10,100	82.4
Injection drug use	30	25	83.3	15	13	86.7	27	24	88.9	4	2	50.0	49	42	85.7	125	106	84.8	1,426	1,081	75.8
Male	11	9	81.8	11	10	90.9	15	13	86.7	3	1	33.3	36	31	86.1	76	64	84.2	756	581	76.9
Female	19	16	84.2	4	3	75.0	12	11	91.7	1	1	100.0	13	11	84.6	49	42	85.7	670	500	74.6
Male-to-male sexual contact with injection drug use	5	4	80.0	10	9	90.0	9	8	88.9	5	4	80.0	38	31	81.6	67	56	83.6	886	713	80.5
Heterosexual contact#	676	587	86.8	76	62	81.6	543	461	84.9	48	37	77.1	465	408	87.7	1,808	1,555	86.0	3,951	3,173	80.3
Male	177	153	86.4	26	22	84.6	203	172	84.7	14	13	92.9	181	161	89.0	601	521	86.7	1,317	1,034	78.5
Female	499	434	87.0	50	40	80.0	340	289	85.0	34	24	70.6	284	247	87.0	1,207	1,034	85.7	2,634	2,139	81.2
Population area of residence																					
Metropolitan statistical areas (500,000+)	817	701	85.8	375	323	86.1	1,039	916	88.2	158	132	83.5	2,158	1,906	88.3	4,547	3,978	87.5	14,489	11,832	81.7
Metropolitan area (50,000-499,999)	58	53	91.4	26	22	84.6	54	45	83.3	14	9	64.3	152	137	90.1	304	266	87.5	2,523	2,048	81.2
Nonmetropolitan area (<50,000)	32	29	90.6	11	10	90.9	18	15	83.3	6	6	100.0	82	71	86.6	149	131	87.9	1,267	1,002	79.1
Other/unknown	10	6	60.0	4	4	100.0	3	2	66.7	1	0	-	18	12	66.7	36	24	67.8	270	205	75.9
Total	917	789	86.0	416	359	86.3	1,114	978	87.8	179	147	82.3	2,410	2,126	88.2	5,036	4,389	87.4	18,549	15,087	81.3

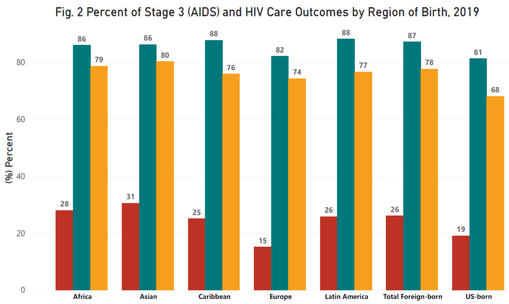
RESULTS

- In 2019, of 23,585 persons with a known country of birth who received an HIV diagnosis 5,036 (21.4%) were FB persons (Africa 18.2%, Asia 8.3%,Caribbean 22.0%, Europe 3.6%, and Latin America 47.9%)
- Overall, 26.0% of FB persons received a late-stage diagnosis (stage 3, AIDS) compared to 19.0% of US-born persons. Among FB persons, Asian-born females (32.7%), African-born males (32.1%) and persons aged 55+ years (35.1%) received the highest proportions of late-stage diagnosis (stage 3, AIDS)
- European-born persons received the lowest percentage of linkage to medical care (82.1%)
- Among FB persons, European-born persons (74.3%), persons aged 55+ years (74.4%), males who use injection drugs (61.6%), and those living in other/unknown population area of residence (61.7%) received the lowest percentages of viral suppression

Table 3. HIV viral suppression within 6 months of diagnosis during 2019 among foreign-born persons aged ≥ 13 years, by global region of birth and selected characteristics — 44 states† and the District of Columbia, United States, 2019

	Africa			Asia			Caribbean			Europe			Latin America			Total Foreign-Born			US-born		
	Total	Viral Suppression		Total	Viral Suppression		Total	Viral Suppression		Total	Viral Suppression		Total	Viral Suppression		Total	Viral Suppression		Total	Viral Suppression	
Characteristic	No.	No.	%	No.	No.	%	No.	No.	%	No.	No.	%	No.	No.	%	No.	No.	%	No.	No.	%
Sex at birth																					
Female	524	419	80.0	55	40	72.7	352	259	73.6	36	26	72.2	299	226	75.6	1,266	970	76.6	3,312	2,203	66.5
Male	393	303	77.1	361	294	81.4	762	587	77.0	143	107	74.8	2,111	1,623	76.9	3,770	2,914	77.3	15,237	10,434	68.5
Age at diagnosis (yr)																					
13-24	82	61	74.4	61	53	86.9	121	92	76.0	13	7	53.8	325	257	79.1	602	470	78.1	4,313	2,965	68.7
25-34	196	155	79.1	131	110	84.0	285	229	80.4	64	43	67.2	910	701	77.0	1,586	1,238	78.1	6,803	4,626	68.0
35-44	270	215	79.6	106	85	80.2	252	184	73.0	52	44	84.6	668	523	78.3	1,348	1,051	78.0	3,222	2,166	67.2
45-54	192	151	78.6	75	57	76.0	220	166	75.5	32	26	81.3	360	263	73.1	879	663	75.4	2,341	1,603	68.6
≥55	177	140	79.1	43	29	67.4	236	175	74.2	18	13	72.2	147	105	71.4	621	462	74.4	1,870	1,275	68.2
Transmission category§,¶																					
Male-to-male sexual contact	195	159	81.5	312	255	81.7	535	427	79.8	120	93	77.5	1,854	1,458	78.6	3,016	2,392	79.3	12,262	8,582	70.0
Injection drug use	30	23	76.7	15	11	73.3	27	20	72.2	4	1	30.0	49	28	57.1	125	83	66.2	1,426	793	55.6
Male	11	9	81.8	11	8	72.7	15	11	70.7	3	0	-	36	19	52.8	76	47	61.6	756	428	56.6
Female	19	14	73.7	4	3	75.0	12	9	74.2	1	1	100.0	13	9	69.2	49	36	73.3	670	365	54.5
Male-to-male sexual contact with injection drug use	5	4	80.0	10	9	90.0	9	7	81.1	5	3	60.0	38	26	68.4	67	49	73.6	886	567	64.0
Heterosexual contact#	676	528	78.1	76	58	76.3	543	391	72.0	48	33	68.8	465	333	71.6	1,808	1,343	74.3	3,952	2,676	67.7
Male	177	127	71.8	26	21	80.8	203	142	69.9	14	9	64.3	181	118	65.2	601	417	69.4	1,317	845	64.2
Female	499	401	80.4	50	37	74.0	340	249	73.3	34	24	70.6	284	215	75.7	1,207	926	76.7	2,635	1,831	69.5
Population area of residence																					
Metropolitan statistical areas (500,000+)	817	645	78.9	375	299	79.7	1,039	797	76.7	158	119	75.3	2,158	1,671	77.4	4,547	3,531	77.7	14,489	9,959	68.7
Metropolitan area (50,000-499,999)	58	49	84.5	26	22	84.6	54	37	68.5	14	8	57.1	152	114	75.0	304	230	75.7	2,523	1,622	64.3
Nonmetropolitan area (<50,000)	32	21	65.6	11	11	100.0	18	10	55.6	6	6	100.0	82	53	64.6	149	101	67.8	1,267	869	68.6
Other/unknown	10	7	70.0	4	2	50.0	3	2	66.7	1	0	-	18	11	61.1	36	22	61.7	270	187	69.3
Total	917	722	78.7	416	334	80.3	1,114	846	75.9	179	133	74.4	2,410	1,849	76.7	5,036	3,884	77.1	18,549	12,637	68.1

Fig. 2 Percent of Stage 3 (AIDS) and HIV Care Outcomes by Region of Birth, 2019



LIMITATIONS

- First, the analysis was limited to 45 US jurisdictions with complete laboratory reporting and might not be representative of all foreign-born persons living with diagnosed HIV infection in the United States
- Second, analyses of transmission categories, metropolitan areas from some RoB/subpopulation with small sizes should be interpreted with caution
- Third, diagnoses were reported only from individuals with complete country of birth (CoB) data. Individuals with missing data on CoB were excluded from the analysis, therefore we may have overestimated or underestimated the proportions of people born in each RoB
- Fourth, data are not presented by gender

CONCLUSIONS

The overall prevalence of HIV stage 3 (AIDS) at time of diagnosis among FB individuals continues to be higher than among US-born persons. States and major metropolitan areas where significant numbers of foreign-born persons live need to increase their HIV testing efforts targeting this community in order to meet the goals of the *Ending the HIV Epidemic in the U.S. initiative*. Monitoring the proportion of HIV diagnoses and care outcomes by region of birth among the FB populations is important in reducing HIV-infections, informing HIV prevention services, build culturally sensitive programs, and helping gauge progress towards national goals among this highly vulnerable population.

This footnote applies to all 3 tables
*Opportunistic illness or CD4+ T-lymphocyte count <200 cells/μL or <14% percentage (i.e., AIDS-defining condition).
Note. Stage of disease at time of HIV diagnosis is based on the first CD4 test performed or documentation of an AIDS-defining condition ≤3 months after a diagnosis of HIV infection. Data are based on residence at time of diagnosis. Data not provided for states and associated counties that do not have laws requiring reporting of all CD4 and viral loads, or that have incomplete reporting of laboratory data to CDC: Areas without laws: Idaho and New Jersey. Areas with incomplete reporting: Kansas, Kentucky, Pennsylvania, Vermont, and Puerto Rico.
†Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Illinois, Indiana, Iowa, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, West Virginia, Wisconsin and Wyoming.
§Hispanic/Latino persons can be of any race.
¶Data have been statistically adjusted to account for missing transmission category; therefore, values may not sum to subtotals and total.
#Includes persons whose infection was attributed to hemophilia, blood transfusion, perinatal exposure or whose risk factor was not reported or not identified. Data not displayed because the numbers were too small to be meaningful.
**Heterosexual contact with a person known to have, or with a risk factor for, HIV infection.

ACKNOWLEDGEMENTS

HIV surveillance staff at state and local health departments.

CONTACT INFORMATION

Tebitha Mawokomatanda, MSPH
tkajese@cdc.gov

www.cdc.gov | Contact CDC at: 1-800-CDC-INFO or www.cdc.gov/info The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.