



Table 1: Detailed information of included studies in this review continued to Appendix A3.3.1 Table 1: Characteristics of included studies in this review (continued)

No. of study	study period	Median study period	Study	Region	Study method	Time lag	Definition of advanced HIV disease (AHD)	No. of AHD via MSM	No. of PLHIV via MSM	No. of AHD via IDU	No. of PLHIV via IDU	No. of AHD via HC	No. of PLHIV via HC	No. of AHD	No. of PLHIV	No. of male	No. of female	Age	Continents
78	2012-2016	2014	2019 Hu X	China (Mainland)	cross-section	3	advanced HIV disease was defined as a patient with a CD4+ T-cell count < 200/mm <sup>3</sup> , or a patient with an AIDS-defining illness regardless of CD4+ T-cell count during diagnosis	332	1439	347	1077	19526	41994	20325	45118	32028	13900	50.3	Asia
79	1998-2000	1999	2001 de Manain JL	Spain	surveillance	0	late diagnosis (stage C) was defined according to CD4 cell count at diagnosis	15	46	8	32	22	47	45	125	NA	NA	37.3	Europe
80	1990-2005	1997.5	2009 Chen KT	China (Taiwan)	surveillance	3	Persons with HIV were those who received a diagnosis of HIV with or without a diagnosis of AIDS at the same time. Persons with AIDS were those who had AIDS when they first received their HIV diagnosis, or those who progressed to having AIDS after first being reported with HIV infection. The diagnosis year for HIV diagnosis was the year of HIV diagnosis if AIDS was not contemporaneously present, but if HIV and AIDS were diagnosed within the same calendar month, it was the year of AIDS diagnosis. For people with AIDS, the year of AIDS diagnosis was used as the diagnosis year.	1154	3807	90	3240	1114	2734	2589	9961	9104	857	32	Asia
81	1998-2005	2001.5	2009 Shouse RL	USA	surveillance	12	AIDS diagnosis after 1 year HIV diagnosis	40994	100231	12887	32154	22766	61101	107784	281421	200882	80559	NA	North America
82	2000-2004	2002	2006 Castilla J	Spain	surveillance	NA	Patients with CD4+ lymphocyte count lower than 200 cells per microlitre and those who already presented signs of an AIDS defining disease were considered late diagnoses of HIV infection.	144	353	117	299	316	669	616	1407	1071	336	37	Europe
83	2015-2015	2015	2016 Reinhardt S	Guatemala	cohort	0	Baseline AIDS-defining illnesses	87	464	NA	NA	832	3174	931	3086	2133	1553	34.4	South America
84	1996-2002	1999	2005 Brannstrom J	Sweden	surveillance	3	A "late tester" was defined as a patient with AIDS where the time interval between first positive HIV test and AIDS diagnosis within 3 month	77	166	6	65	116	224	219	487	360	127	≥15	Europe
85	2005-2018	2011.5	2019 Luo TF	China (Mainland)	surveillance	NA	(1) The HIV/AIDS patients died from non-accidental causes. (2) Regardless of its surviving or not, the HIV/AIDS patients with CD4 count less than 200 $\mu$ l, were included. (3) The patients were diagnosed as AIDS with CD4 count between 200 and 499 $\mu$ l. (4) The patients were diagnosed as AIDS by clinicians without CD4 count test. (5) Based on the inference of existing data, a portion of patients was considered as AIDS without clinical diagnosis or CD4 count test.	6	28	NA	NA	312	576	320	608	442	166	NA	Asia
86	2006-2017	2011.5	2018 Chen LY	China (Mainland)	surveillance	NA	AIDS diagnosis at HIV diagnosis or within the calendar year among newly diagnosed cases	23	96	54	246	472	1790	549	2132	1254	878	≥18	Asia
87	2011-2017	2014	2019 Zhang M	China (Mainland)	surveillance	NA	(1) The HIV/AIDS patients died from non-accidental causes. (2) Regardless of its surviving or not, the HIV/AIDS patients with CD4 count less than 200 $\mu$ l, were included. (3) The patients were diagnosed as AIDS with CD4 count between 200 and 499 $\mu$ l. (4) The patients were diagnosed as AIDS by clinicians without CD4 count test. (5) Based on the inference of existing data, a portion of patients was considered as AIDS without clinical diagnosis or CD4 count test.	11	63	130	267	444	1198	592	1562	1038	524	46.75	Asia
88	2011-2016	2013.5	2018 Liang HM	China (Mainland)	surveillance	NA	(1) The HIV/AIDS patients died from non-accidental causes. (2) Regardless of its surviving or not, the HIV/AIDS patients with CD4 count less than 200 $\mu$ l, were included. (3) The patients were diagnosed as AIDS with CD4 count between 200 and 499 $\mu$ l. (4) The patients were diagnosed as AIDS by clinicians without CD4 count test. (5) Based on the inference of existing data, a portion of patients was considered as AIDS without clinical diagnosis or CD4 count test.	542	2162	NA	NA	1181	2764	1885	5213	4357	856	36.567	Asia
89	2012-2016	2014	2018 Xie H	China (Mainland)	surveillance	NA	(1) The HIV/AIDS patients died from non-accidental causes. (2) Regardless of its surviving or not, the HIV/AIDS patients with CD4 count less than 200 $\mu$ l, were included. (3) The patients were diagnosed as AIDS with CD4 count between 200 and 499 $\mu$ l. (4) The patients were diagnosed as AIDS by clinicians without CD4 count test. (5) Based on the inference of existing data, a portion of patients was considered as AIDS without clinical diagnosis or CD4 count test.	4	27	9	19	662	1324	679	1387	977	410	NA	Asia
90	2012-2016	2014	2018 Tang H	China (Mainland)	surveillance	NA	(1) The HIV/AIDS patients died from non-accidental causes. (2) Regardless of its surviving or not, the HIV/AIDS patients with CD4 count less than 200 $\mu$ l, were included. (3) The patients were diagnosed as AIDS with CD4 count between 200 and 499 $\mu$ l. (4) The patients were diagnosed as AIDS by clinicians without CD4 count test. (5) Based on the inference of existing data, a portion of patients was considered as AIDS without clinical diagnosis or CD4 count test.	1272	4926	NA	NA	3236	6906	4508	11832	9679	2153	≥15	Asia
91	2016-2017	2016.5	2019 Yang K	China (Mainland)	surveillance	NA	Late diagnosis was defined as the first CD4 cell count < 200/mm <sup>3</sup> within the calendar year for diagnosis	644	2459	14	23	1293	3323	1953	5826	4748	1078	43	Asia
92	2007-2017	2012	2019 Xu Y	China (Mainland)	surveillance	NA	(1) The HIV/AIDS patients died from non-accidental causes. (2) Regardless of its surviving or not, the HIV/AIDS patients with CD4 count less than 200 $\mu$ l, were included. (3) The patients were diagnosed as AIDS with CD4 count between 200 and 499 $\mu$ l. (4) The patients were diagnosed as AIDS by clinicians without CD4 count test. (5) Based on the inference of existing data, a portion of patients was considered as AIDS without clinical diagnosis or CD4 count test.	149	412	1	35	37	181	187	628	532	96	37.56	Asia
93	2011-2017	2014	2018 Huang YL	China (Mainland)	surveillance	NA	(1) The HIV/AIDS patients died from non-accidental causes. (2) AIDS diagnosis at HIV diagnosis or within the calendar year among newly diagnosed cases	139	537	9	28	745	1966	901	2551	2071	480	NA	Asia
94	2015-2017	2016	2019 Yang ZK	China (Mainland)	surveillance	NA	(1) The HIV/AIDS patients died from non-accidental causes. (2) Regardless of its surviving or not, the HIV/AIDS patients with CD4 count less than 200 $\mu$ l, were included. (3) The patients were diagnosed as AIDS with CD4 count between 200 and 499 $\mu$ l. (4) The patients were diagnosed as AIDS by clinicians without CD4 count test. (5) Based on the inference of existing data, a portion of patients was considered as AIDS without clinical diagnosis or CD4 count test.	56	241	NA	NA	137	494	202	776	626	150	39.32	Asia
95	2012-2016	2014	2019 Duan RR	China (Mainland)	surveillance	NA	(1) The HIV/AIDS patients died from non-accidental causes. (2) Regardless of its surviving or not, the HIV/AIDS patients with CD4 count less than 200 $\mu$ l, were included. (3) The patients were diagnosed as AIDS with CD4 count between 200 and 499 $\mu$ l. (4) The patients were diagnosed as AIDS by clinicians without CD4 count test. (5) Based on the inference of existing data, a portion of patients was considered as AIDS without clinical diagnosis or CD4 count test.	10	53	2	6	269	632	282	693	598	185	53	Asia
96	2012-2017	2014.5	2018 Bing PF	China (Mainland)	surveillance	NA	Late diagnosis was defined as newly diagnosed and the first CD4 cell count < 200/mm <sup>3</sup> within the calendar year for diagnosis	448	2336	NA	NA	368	1208	820	3405	3239	366	35.36	Asia
97	2005-2016	2010.5	2018 Xu QS	China (Mainland)	surveillance	12	Late diagnosis was defined as AIDS diagnosis at HIV diagnosis or within one year following HIV diagnosis	10	58	2	62	21	90	33	210	168	42	30.32	Asia
98	2013-2017	2015	2019 Zhang ZH	China (Mainland)	surveillance	NA	(1) The HIV/AIDS patients died from non-accidental causes. (2) Regardless of its surviving or not, the HIV/AIDS patients with CD4 count less than 200 $\mu$ l, were included. (3) The patients were diagnosed as AIDS with CD4 count between 200 and 499 $\mu$ l. (4) The patients were diagnosed as AIDS by clinicians without CD4 count test. (5) Based on the inference of existing data, a portion of patients was considered as AIDS without clinical diagnosis or CD4 count test.	109	393	NA	NA	136	301	253	714	627	87	36.2	Asia
99	2010-2017	2013.5	2018 Ye L	China (Mainland)	surveillance	NA	(1) The HIV/AIDS patients died from non-accidental causes. (2) Regardless of its surviving or not, the HIV/AIDS patients with CD4 count less than 200 $\mu$ l, were included. (3) The patients were diagnosed as AIDS with CD4 count between 200 and 499 $\mu$ l. (4) The patients were diagnosed as AIDS by clinicians without CD4 count test. (5) Based on the inference of existing data, a portion of patients was considered as AIDS without clinical diagnosis or CD4 count test.	126	438	0	24	205	502	333	972	830	142	39	Asia
100	2012-2017	2014.5	2019 Zhu Y	China (Mainland)	surveillance	NA	(1) The newly diagnosed HIV/AIDS patients died from non-accidental causes. (2) Regardless of its surviving or not, the HIV/AIDS patients with CD4 count less than 200 $\mu$ l, were included. (3) The patients were diagnosed as AIDS with CD4 count between 200 and 499 $\mu$ l. (4) The patients were diagnosed as AIDS by clinicians without CD4 count test. (5) Based on the inference of existing data, a portion of patients was considered as AIDS without clinical diagnosis or CD4 count test.	13	46	4	6	425	897	442	931	667	264	56	Asia
101	2012-2016	2014	2018 Huang SZ	China (Mainland)	surveillance	NA	(1) The newly diagnosed HIV/AIDS patients died from non-accidental causes. (2) Regardless of its surviving or not, the HIV/AIDS patients with CD4 count less than 200 $\mu$ l, were included. (3) The patients were diagnosed as AIDS with CD4 count between 200 and 499 $\mu$ l.	115	377	26	56	180	377	323	933	802	131	36.5	Asia

For convergence of estimate in analysis of heterogeneity, we deleted the 'no. of AHD via IDU' and the 'no. of PLHIV via IDU' of 2018 Ye L's study arbitrarily when conducting statistical analysis, which provides with 0 case of AHD via IDU and 24 cases of PLHIV via IDU