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Antiretroviral therapy (ART) coverage at public and private ART facilities in Myanmar

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Abstract

The continuum of HIV care (from initial diagnosis to achieving viral suppression) is used to assess the progress of the national AIDS control programme in Myanmar. According to National Programme progress reports, ART coverage in Myanmar was 38% in 2014, 47% in 2015, and 56% in 2016. To evaluate antiretroviral therapy (ART) coverage and gaps in ART care, a serial cross-sectional study was done using the national programme data reported between January 2014 and December 2016. The study of 228 public and 62 private ART facilities in Myanmar found that the Yangon region, Mandalay region, and Kachin state had the highest numbers of people living with HIV (PLHIV). ART coverage among PLHIV under 15 years old was 89% in 2014, 93% in 2015, and 88% in 2016. Retention in ART care among adult women was higher than among adult men, in spite of women being more likely to discontinue care. PLHIV who were enrolled in care at the ART facilities had initiated ART at the rates of 60% in 2014, 68% in 2015, and 7% in 2016. Over the 3-year study period, these facilities reported that 2.5–3.7% of PLHIV taking ART had died, and that 3.3–4.8% were lost to follow-up (LTFU). The percentages of PLHIV who were tested for viral load were low (2.5–3%). The continuum of HIV care for PLHIV at ART facilities has improved, although more information about attrition and viral suppression are still needed. The reporting system for newly diagnosed PLHIV and facilities for viral load testing needs to be strengthened.

Keywords

Antiretroviral therapy (ART); ART coverage; Myanmar; continuum of HIV care; nationwide aggregate data

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Declaration of interests

In accordance with Taylor & Francis policy and our ethical obligations as researchers, we declare that we have no conflicts of interest.

Introduction

To achieve the world's commitment to end the AIDS epidemic, the progress of the continuum of HIV care should be assessed to determine whether it is on track to achieve the Joint United Nation Program on AIDS/HIV (UNAIDS) 90-90-90 targets by 2020 and 95-95-95 targets by 2030. The continuum of HIV care includes the sequential steps or stages of HIV care, from initial diagnosis of people living with HIV (PLHIV) to achieving viral suppression (HIV.gov, 2016). The UNAIDS 90-90-90 target is defined as 90% of all HIV-positive people being diagnosed, 90% of those diagnosed receiving ART (81% of all HIV-positives), and 90% of those on ART achieving viral suppression (73% of all HIV-positives) (UNAIDS, 2015). Global coverage of antiretroviral therapy (ART) reached 48% by the end of 2016. Scale-up of access to ART led to remarkable improvement in prevention of mother-to-child transmission of HIV infection and reductions of AIDS-related deaths globally (UNAIDS, 2017). In 2015, the global estimate was 36.7 million HIV-infected persons, most of whom were in the Asia and Pacific regions and Africa, with the greatest burden in sub-Saharan Africa (WHO, 2016). Southeast Asian countries have achieved significant progress in reducing new infections and AIDS-related deaths (Avert, 2018).

Myanmar is situated in Southeast Asia, bordering the Republic of China to the north and northeast, Laos to the east, Thailand to the southeast, Bangladesh to the west, and India to the northwest. As a developing country undergoing epidemiological transitions, Myanmar has a double burden of both communicable and non-communicable diseases. HIV/AIDS is one of the priority diseases in Myanmar (Myanmar Ministry of Health, 2015). Myanmar detected its first case of HIV in an injection drug user in 1988, and its first AIDS case was diagnosed in 1991. Since then, Myanmar's response to the HIV epidemic has significantly improved over the past three decades despite major political, social and financial challenges (Oo et al., 2016a). A report on the HIV epidemic in Southeast Asia (Pendse et al., 2016) estimated that new HIV infections in Myanmar declined by 20% between 2010 and 2015. Because of confidentiality and stigmatization concerns, mandatory HIV testing and registration of PLHIV could not be carried out in Myanmar; hence, estimating the numbers of PLHIV since 2005 was done with the Asian Epidemic Model (Oo et al., 2016a; National AIDS Programme, 2016; Brown & Peerapatanapokin, 2004). According to the programme data, the overall HIV prevalence in Myanmar in 2015 was estimated to be less than 0.6% among adults (15 years and older). Approximately 65% of high-risk populations are estimated to be in five regions and states of Myanmar (Mandalay, Yangon, Sagaing, Kachin and Shan North), mainly in urban areas. A small-scale AIDS treatment programme was introduced at the Waibargi Specialist Hospital in Yangon in 2003. The National AIDS Programme (NAP) began ART provision in five public ART facilities in 2005. Since then, ART facilities have been gradually scaled up each year to provide access to all PLHIV across the country. Myanmar is committed to ending HIV as a public threat, according to the National Strategic Plan III (2016–2020) (Oo et al., 2016a; Dhillon et al., 2012), by implementing more decentralized services. With scale-up of care and support, ART coverage in Myanmar was 38%, 47% and 56% of estimated PLHIV in 2014, 2015, and 2016, respectively (National AIDS Programme, 2015b; National AIDS Programme, 2017b;

National AIDS Programme, 2018). During the period of 2010–2015, HIV/AIDS-related deaths decreased by 39% (National AIDS Programme, 2015a).

Since HIV arrived in Myanmar in the mid- to late 1980s, AIDS cases were reported from hospitals all over the country, and active surveillance of HIV/AIDS has operated in Myanmar since 1985 (National AIDS Programme, 2015a; National AIDS Programme, 2017a). The Myanmar NAP database mainly depends on a paper-based reporting system, but reporting from public and private sectors has yet to be standardized. Hence, there are few studies examining national coverage of HIV care and treatment in Myanmar, although selected areas and non-government organization (NGO) study reports are available. Data on PLHIV diagnosed and enrolled in care were incomplete in a cross-sectional study of the HIV treatment continuum in Myanmar in 2016 (Evidence to Action). Therefore, sequential data on PLHIV who seek care and treatment are necessary. This study describes ART coverage in Myanmar, using the national programme data from 1 January 2014 to 31 December 2016, and identifies gaps in the continuum of HIV/AIDS care and treatment.

Materials and methods

A serial cross-sectional descriptive study was conducted using routine NAP data in Myanmar, which is administratively divided into Nay Pyi Taw Union Territory and 14 states and regions. Myanmar had a population of 51,486,253 in 2014 and an area of 676,577.2 square kilometers, with a population density of 76.1 per square kilometer. Total expenditure on health was 2.3% of the GDP in 2014 (Myanmar Ministry of Health, 2015; Myanmar Department of Population, 2015; World Health Organization, 2017b).

Source of data and data extraction

ART has been provided at public and private/NGO ART facilities under NAP supervision (Myanmar Department of Public Health, 2016). We utilized routinely collected data from 2014 to 2016 from all reporting ART facilities of the NAP to assess ART coverage in Myanmar. All public ART facilities in Myanmar must report to NAP monthly, and all private facilities report on a quarterly basis, using a standard reporting form recording PLHIV demographic characteristics, age, gender, type of ART facility, site of ART facility, and year of data entry. To assess ART coverage in Myanmar from 2014–2016, all ART facilities' data were reviewed as programme aggregate data. To obtain more information on the continuum of HIV care, NAP developed a monthly reporting format for adult PLHIV that collected data on those enrolled in care, initiation of ART, and outcome. During the study period, 14 facilities reported data on newly enrolled PLHIV, numbers of PLHIV on ART, and outcomes and patient referrals for viral and CD4 testing (Figure 1).

Numbers of PLHIV by year were obtained from HIV estimates and projections, and suggested that in Myanmar there were approximately 226,079 PLHIV in 2014, 227,573 in 2015, and 229,541 in 2016; during each year, 36% were female. To identify the gaps in the treatment continuum, we included information from monthly reporting, annual reports, and relevant publications of the Myanmar NAP.

Variable definitions

We defined ART coverage as the proportion of PLHIV receiving ART, using the estimated PLHIV numbers as the denominator. Newly enrolled PLHIV received baseline testing, including haemoglobin, serum creatinine, liver function, and pregnancy, as well as counseling sessions. Possible recorded outcomes of PLHIV included those who initiated ART, died, were lost to follow-up (LTFU), discontinued ART, transferred out, or remained in pre-ART care. PLHIV LTFU or who missed three consecutive months of treatment were recorded as LTFU at the end of the reporting period. Discontinuing ART was defined as not taking ART for any reason, as reported at follow-up visits. Retention in care included PLHIV who remained on ART and were still alive (Geng et al, 2010).

Data management and analysis

Descriptive analyses were performed to measure frequency for categorical data. Trends over time and distribution of patients on ART by geographical regions in Myanmar were reported. Univariate analyses calculated the quantile distribution of PLHIV receiving ART in the states and regions of Myanmar. We then calculated ART coverage using estimated numbers of PLHIV by year extracted from HIV estimates and projections (2010–2015 and 2016–2020, estimations by five-year intervals; National AIDS Programme, 2016). The outcomes of PLHIV (deaths, LTFU, retained on ART, and/or discontinued ART for any reason) were used as dichotomous outcome variables in the logit model, using gender as a predictor variable. Log odds of each outcome were reported with 95% confidence intervals. Analyses were performed using Statistical Analytical System Software (SAS) version 9.4 (SAS Institute Inc., Cary, NC, USA) and ArcMap GIS software (ESRI) version 10.5.

Findings

ART coverage in Myanmar (2014–2016)

Between January 2014 and December 2016, 228 public ART facilities and 62 different private/NGO ART facilities in Myanmar reported numbers of PLHIV receiving ART. There were 107 public ART facilities and 51 private ART facilities in 2014, 184 public ART facilities and 51 private ART facilities in 2015, and 224 public ART facilities and 48 private ART facilities in 2016. The numbers, distributions and locations of private facilities varied each year.

Among PLHIV who received ART, 54% were men and 46% were women in each year: 2014 (46,321 males and 39,305 females), 2015 (57,468 males and 49,022 females), and 2016 (69,226 males and 58,176 females). Of these, 93% were adults (15 years and older) and 7% were children (younger than 15 years). The total reported numbers of PLHIV retained on ART were 85,626 in 2014, 106,490 in 2015, and 127,402 in 2016. Reported ART coverage in Myanmar was 38% in 2014, 47% in 2015, and 56% in 2016, using the yearly estimations of numbers of PLHIV (Table 1).

The prevalence of PLHIV under the age of 15 years who received ART was 89% in 2014, 93% in 2015 and 88% in 2016. Coverage among women was greater than among men during each of the three years of the study (Table 1). ART coverage improved over time, and

coverage trends by gender and age groups over the three-year study period were examined and found not to differ from each other. The distributions of PLHIV receiving ART were categorized as quantiles and are illustrated in Figures 2–4. The Yangon region, Mandalay region and Kachin state were in the highest quintile for each of the three years. The Sagaing region, Tanintharyi region and Shan state were in the second highest quintile of those receiving ART during each of the three years.

The continuum of HIV care and treatment in selected public sector ART facilities in Myanmar (2014–2016)

This study obtained data on adult PLHIV from public ART facilities under the NAP. Not all ART facilities during 2014–2016 could be reviewed, due to lack of availability of information on PLHIV characteristics. There were 81 facilities in 2014, 157 in 2015, and 193 in 2016, from which data on deaths, LTFU, and discontinuation of ART were extracted. Numbers of PLHIV retained on ART were 18,683 in 2014, 35,581 in 2015, and 49,707 in 2016. Numbers of PLHIV newly enrolled in HIV care were 14,971 in 2014, 21,655 in 2015, and 23,716 in 2016. Among PLHIV enrolled in care, the percentages who initiated ART were 60% in 2014, 68% in 2015, and 7% in 2016 (Table 2a).

Among PLHIV receiving ART, 3.3% in 2014, 6.6% in 2015, and 8% in 2016 transferred to other facilities (mostly transferring to a decentralized ART facility from their centralized ART initiation facility) (Table 2b). Less than 1% of PLHIV discontinued ART for any reason. More females discontinued ART than males for any reason, but the retention rate in ART care was still higher for females than for males. Deaths among PLHIV on ART were 3.7% in 2014, 3% in 2015, and 2.5% in 2016, showing a decreasing trend.

The prevalence odds ratios of deaths among male PLHIV attending the facilities to those of females were 1.52 (1.3–1.77, 95% CI) in 2014, 1.60 (1.42–1.81, 95% CI) in 2015, and 1.61 (1.43–1.81, 95% CI) in 2016. The percentages of LTFU were 3.28% in 2014, 3.76% in 2015, and 4.83% in 2016. The odds ratios of LTFU among males compared to females were 1.23 (1.05–1.45, 95% CI) in 2014, 1.17 (1.05–1.31, 95% CI) in 2015, and 1.27 (1.17–1.37, 95% CI) in 2016 (Table 3). After combining all possible outcomes in each of the years, nearly 93% of PLHIV were retained in care in these facilities in each of the three years of the study. The researchers studied 14 public ART facilities across the states and regions in Myanmar to explore the characteristics of PLHIV in terms of the continuum of care. Viral load testing data were only available for the study period years of 2015 and 2016 in those 14 ART facilities. The percentages of those who were tested for viral load were 1.3% in 2015 and 3% in 2016 (Table 4).

Discussion

We analysed and reviewed ART coverage nationwide in Myanmar. It increased from 38% to 56% among the 0.1 million PLHIV who attended public and private facilities between 2014 and 2016. ART coverage of eligible PLHIV under 15 years old was higher than that of adult PLHIV. Coverage among women was greater than among men. Male PLHIV were more prone to both death and LTFU than females. The study revealed high retention rates of those in HIV care and treatment once enrolled.

Annual ART coverage in Myanmar increased over time, from 5% in 2005 to 56% in 2016 (Oo et al., 2016a). The increase in ART coverage was comparable to coverage in other countries in Southeast Asia (53% [39–71%]) (WHO, 2018). The higher ART coverage among children (under 15 years) than adults was encouraging, but globally, overall ART coverage among children is lower than among adults (WHO, 2018).

We found that the numbers of male PLHIV in care was higher than for females, but the numbers of female PLHIV increased over the three-year study period, whereas numbers of males did not. More deaths and LTFU of male PLHIV were reported in the selected public ART facilities in this study. Although our study found differences in LTFU and deaths between males and females, a study conducted to predict the factors for LTFU among PLHIV at a hospital in Ethiopia (2005–2013) found no significant differences in risks of LTFU between males and females (Berheto et al., 2014). Cumulative mortality incidence at 12 months was 2.7% in 2010–2013 (Pham et al., 2017), similar to our finding of 2.5–3.7%. The decreasing trend of reported HIV/AIDS-related deaths in our study suggested improvement in HIV care and treatment in Myanmar. The finding of 3.3–4.8% LTFU among PLHIV was similar to the results of a study of 7 ART programmes in Asia that reported LTFU at 12-months of follow-up as 4% during 2010–2013 (Pham et al., 2017). Previous studies conducted in Myanmar found that being male was one of the factors affecting pre-ART care attrition (Thida et al., 2014; Oo et al., 2016b). The finding that females were more likely to discontinue ART for any reason underscores the need to identify possible causes, such as adverse drug effects, family-related issues, and religious beliefs (Tabatabai et al., 2014).

The low percentages of viral load testing for PLHIV during the study period were due to the limited numbers of sites with testing facilities in Myanmar and the high unit cost of viral load testing, which requires a sophisticated PCR machine platform and technology. In 2015, it was reported that 87% of PLHIV on ART in Myanmar who tested for viral load achieved viral suppression (Oo et al., 2016a), but public sector facilities could not provide viral load testing as the routine standard of care for all PLHIV until late 2017.

The finding of male PLHIV being more prone to death and LTFU indicated a need to increase retention and psychosocial support for males. Information on PLHIV who had achieved viral suppression was not included in the routine reports, indicating the need to scale up more viral load testing facilities. We had data on PLHIV newly enrolled in care in selected ART facilities, but did not have estimates of the numbers of PLHIV in each catchment area. Obtaining complete data on all diagnoses of HIV, including those not in care, is one of the challenges for HIV/AIDS monitoring and evaluation in Myanmar. Strengthening public and private partnership and use of computerized data systems with unique code identifiers and sub-national PLHIV estimations will be necessary to overcome these difficulties.

Our study has several strengths. We analyzed nationwide data on ART coverage among the ART facilities of public and private sectors to gain insights into the progress of HIV care and treatment services in Myanmar. Our study included the distributions of PLHIV receiving

ART across Myanmar, and we could therefore review the possible outcomes of PLHIV to analyse the continuum of HIV care.

However, we could not include many predictor variables to estimate relevant outcome variables (McCaston, 2005). Thus, we could not exclude any possible biases and confounding of the results. The reported data we obtained for 2014–2016 might have had missing data due to the paper-based reporting system and the possibility of inconsistent data entry by multiple individuals (Gloyd et al., 2016). We can only report PLHIV characteristics by age groups and gender, but not other factors involved in retaining PLHIV in ART coverage.

Conclusions

This study was able to provide estimates of current ART coverage. The increasing trend of ART coverage indicates that Myanmar is making significant progress in fighting HIV/AIDS. The findings of improvements in the continuum of HIV care for PLHIV attending public ART facilities support the feasibility of decentralizing ART service delivery. However, ART coverage still needs to be increased, and the reporting systems of the public and private sectors and facilities for viral load testing need to be improved and strengthened. We also recommend further studies determining the PLHIV characteristics that facilitate or hinder ART coverage.

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Ethical considerations

Permission for the study was obtained from the Ethics Committee of the Department of Medical Research, Yangon, Myanmar and an IRB exemption (use of existing data) was obtained from the Institutional Review Board of the University of California, Los Angeles.

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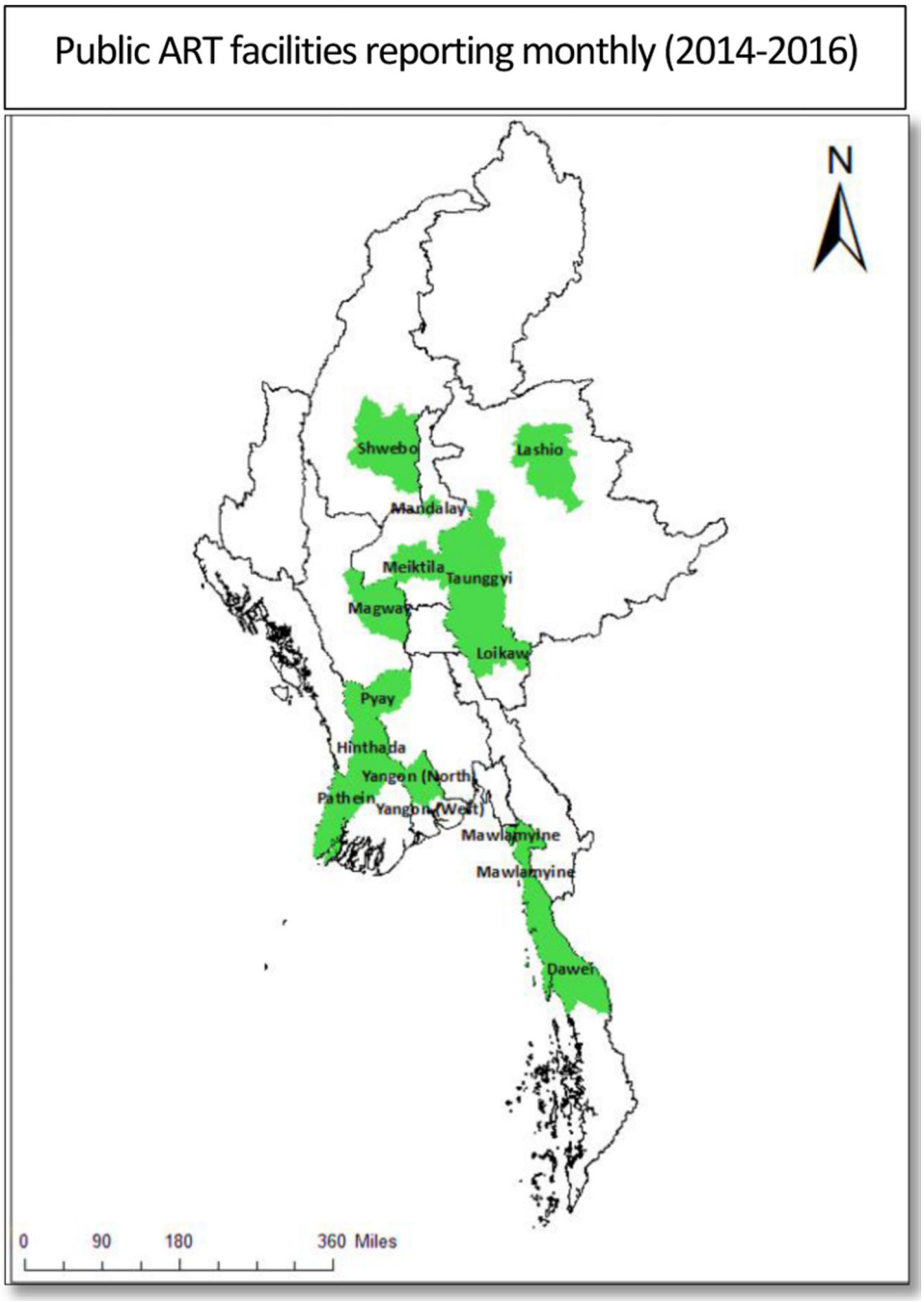

Figure 1.
Distribution of 14 public ART facilities reporting monthly, 2014–2016

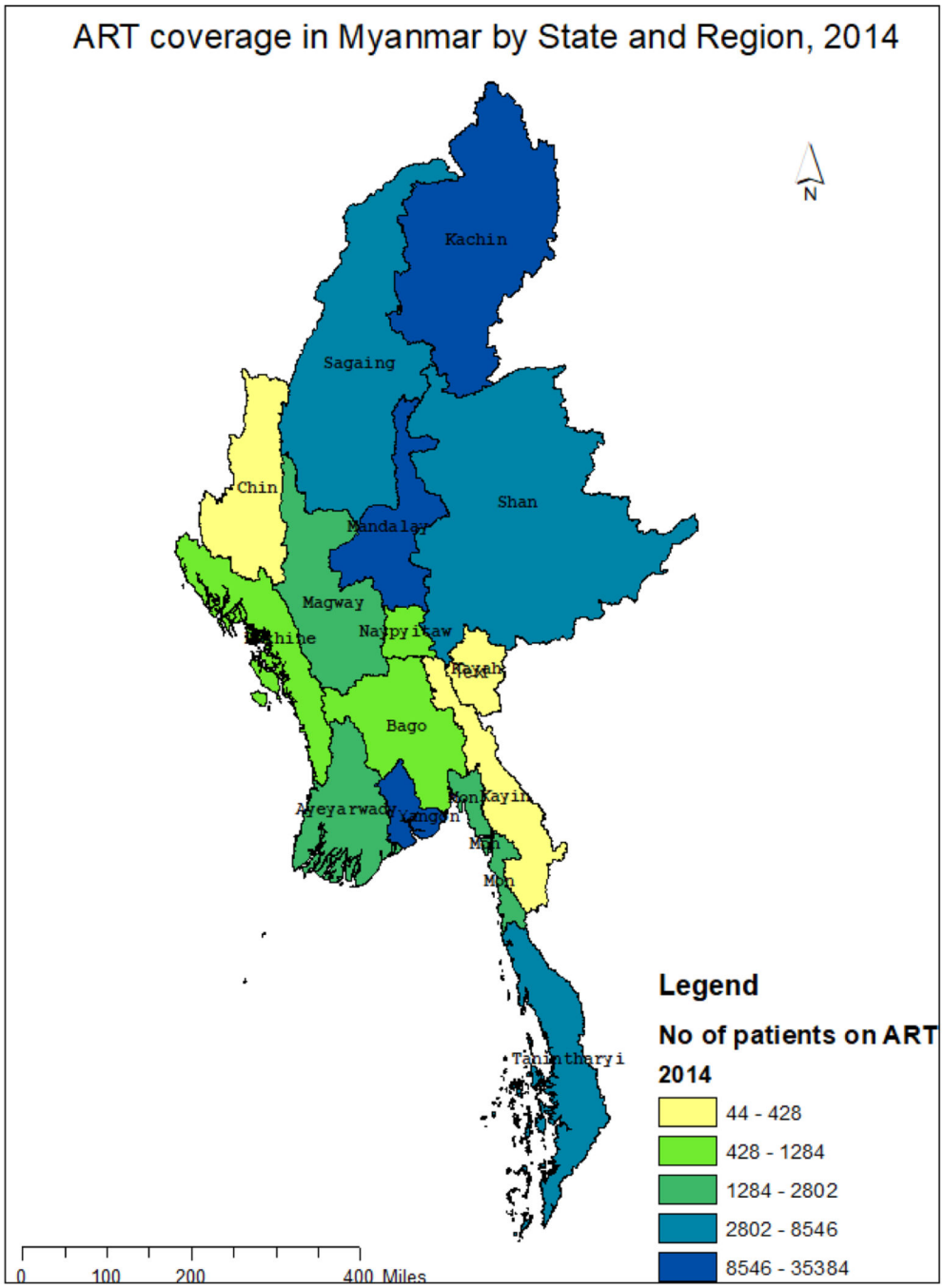

Figure 2:

Antiretroviral therapy coverage in Myanmar by state and region, 2014

Source: Myanmar Information Management Unit, Myanmar National AIDS Program

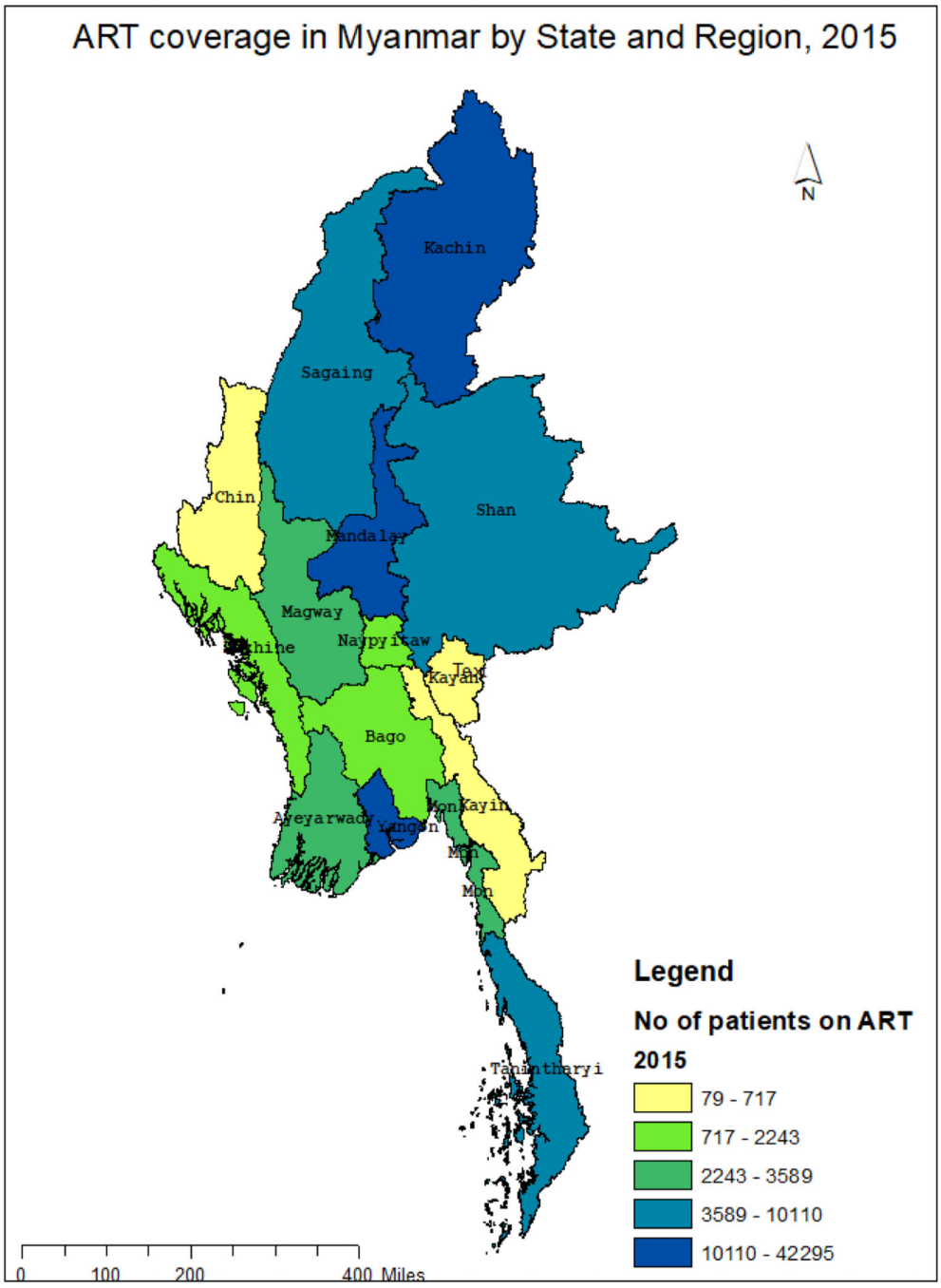

Figure 3:

Antiretroviral therapy coverage in Myanmar by state and region, 2015

Source: Myanmar Information Management Unit, Myanmar National AIDS Program

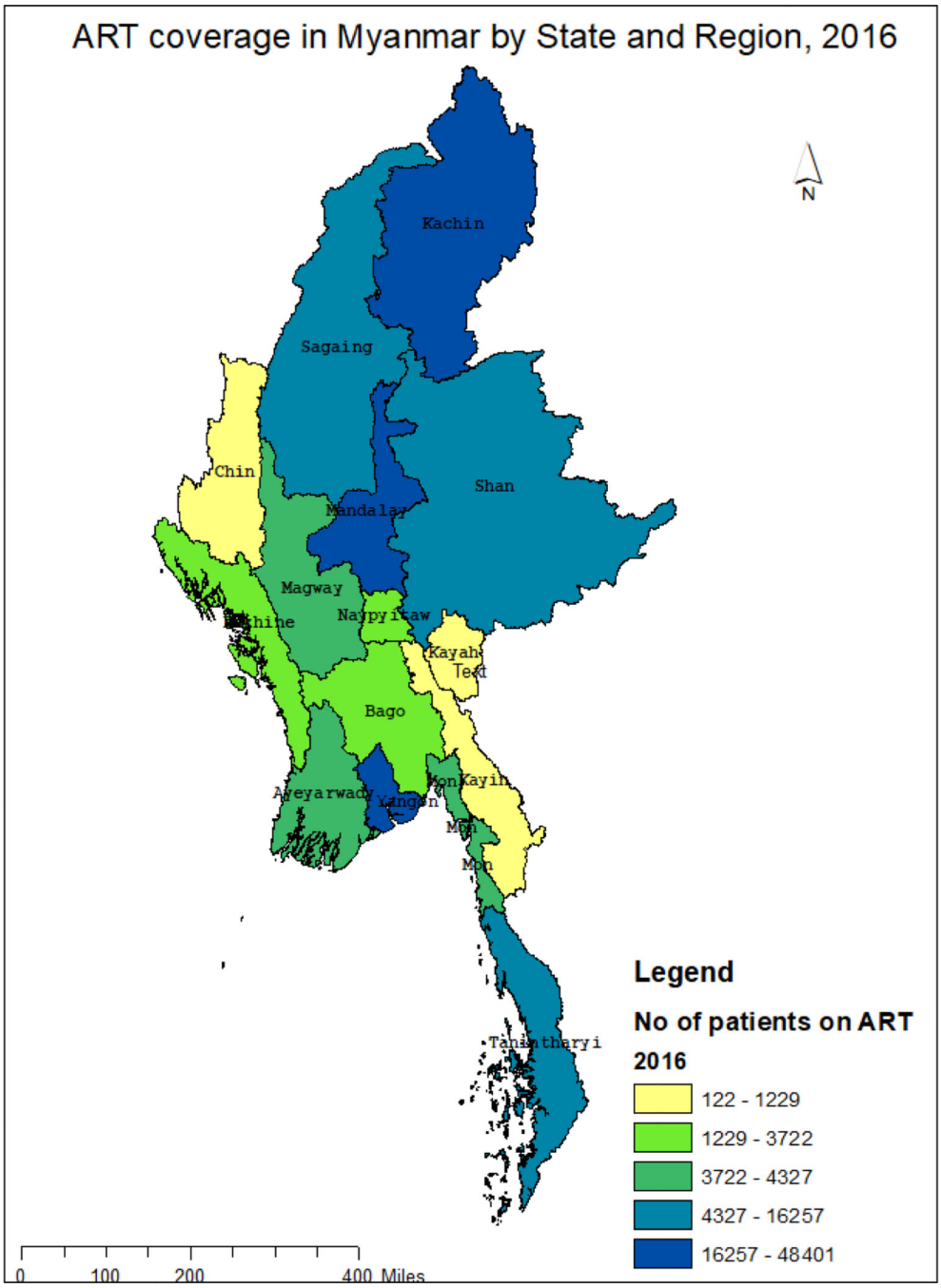

Figure 4:

Antiretroviral therapy coverage in Myanmar by state and region, 2016

Source: Myanmar Information Management Unit, Myanmar National AIDS Program

Table 1.

Antiretroviral Therapy Coverage in Myanmar by Age Groups and Gender (2014 – 2016)

Year	Age group	Gender	Total estimated PLHIVs*	Estimated New Infections*	ART needed**	On ART
			N	N (%)	N (%)	N (%)
2014	Adults (>15 yrs)	Male	139,468	7,865 (5.64)	74,145 (53.16)	43,368 (31.10)
		Female	77,195	3,704 (4.80)	43,315 (56.11)	36,310 (47.04)
	Children (<15 yrs)	Male	4,728	360 (7.61)	6,680 (70.94)	2,953 (62.46)
		Female	4,688	350 (7.47)		2,995 (63.89)
2015	Adults (>15 yrs)	Male	139,513	7,566 (5.42)	119,909 (85.95)	53,787 (38.55)
		Female	78,660	3,439 (4.37)	68,766 (87.42)	45,617 (57.99)
	Children (<15 yrs)	Male	4,716	364 (7.72)	7589 (80.73)	3,681 (78.05)
		Female	4,684	355 (7.58)		3,405 (72.69)
2016	Adults (>15 yrs)	Male	140,196	7,253 (5.17)	122,089 (87.08)	65,385 (46.64)
		Female	80,101	3,179 (3.97)	71,608 (89.40)	54,719 (68.31)
	Children (<15 yrs)	Male	4,634	255 (5.50)	8,317 (89.97)	3,841 (82.89)
		Female	4,610	248 (5.38)		3,457 (74.99)

*Source (AEM)

**Need of ART (CD4<350 up to 2014, CD4 <500 in 2015–2016)

Table 2a.

Characteristics of HIV Care and Treatment among Adult PLHIVs in ART Facilities Reported to the National AIDS Program (2014–2016)

Year	Variable	Total	Gender	
		N	Male, N (%)	Female, N (%)
2014	Number of reported ART facilities	81		
	New PLHIV enrolled in HIV care *	14971	8353 (100%)	6618 (100%)
	New PLHIV started ART	8985	5034 (60%)	3951 (60%)
	Total PLHIV attending facilities **	20165	10953(100%)	9212 (100%)
	Number of reported deaths	745	477 (4%)	268 (3%)
	Number of PLHIV missing or LTFU	661	392 (4%)	269 (3%)
	Number of PLHIV discontinuing ART	76	27 (0.3%)	49 (0.5%)
	PLHIV with active follow up on ART at the end of the year **	18683	10057 (92%)	8626 (94%)
2015	Number of reported ART facilities	157		
	New PLHIV enrolled in HIV care *	21655	12507 (100%)	9148 (100%)
	New PLHIV starting ART	14708	8187 (66%)	6521 (71%)
	Total PLHIV attending facilities **	38297	20867(100%)	17430(100%)
	Number of reported deaths	1151	753 (4%)	398 (2%)
	Number of PLHIV missing or LTFU	1440	839 (4%)	601 (3%)
	Number of PLHIV discontinuing ART	125	71 (0.3%)	54 (0.3%)
	PLHIV with active follow up on ART at the end of the year **	35581	19204 (92%)	16377 (94%)
2016	Number of reported ART facilities	193		
	New PLHIV enrolled in HIV care *	23716	13841 (100%)	9875 (100%)
	New PLHIV starting ART	17529	9972 (72%)	7557 (77%)
	Total PLHIV attending facilities **	53734	29325(100%)	24409(100%)
	Number of reported deaths	1339	866 (3%)	453 (2%)
	Number of PLHIV missing or LTFU	2596	1559 (5%)	1037 (4%)
	Number of PLHIV discontinuing ART	92	45 (0.2%)	47 (0.2%)
	PLHIV with active follow up on ART at the end of the year **	49707	26835 (92%)	22872 (94%)

* Missing data,

** Cumulative number of PLHIV from previous year included,

*** Cumulative number of CD4 tests done

Table 2b.

Characteristics of HIV Care and Treatment among Adult PLHIVs in ART Facilities Reported to the National AIDS Program (2014–2016)

Year	Variable	Total	Gender	
		N	Male, N (%)	Female, N (%)
2014	Total number of PLHIV who attended**	20165	10953(100%)	9212 (100%)
	Number of PLHIV transferred in	2150	1114 (10%)	1036 (11%)
	Number of PLHIV transferred out	666	366 (3%)	300 (3%)
2015	Total number of PLHIV who attended**	38297	20867(100%)	17430(100%)
	Number of PLHIV transferred in	5192	2611 (13%)	2581 (15%)
	Number of PLHIV transferred out	2521	1282 (6%)	1239 (7%)
2016	Total number of PLHIV who attended**	53734	29325(100%)	24409(100%)
	Number of PLHIV transferred in	7413	3981 (14%)	3432 (14%)
	Number of PLHIV transferred out	4330	2452 (8%)	1878 (8%)

Table 3

Prevalence Odds Ratios of Males to Females for Taking ART, Loss to Follow Up and Deaths among Adult PLHIVs in ART Facilities reported to the National AIDS Programme (2014–2016)

	Number of PLHIV			Prevalence OR (95% CI)		
	2014	**2015**	**2016**	**2014**	**2015**	**2016**
Total PLHIVs attending	20,165	38,297	53,734			
Female	9,212	17,430	24,409			
Male	10,953	20,867	29,325			
PLHIV on ART						
Female	8,626	16,377	22,872	1.00 (ref)	1.00 (ref)	1.00 (ref)
Male	10,057	19,204	26,835	**0.76 (0.68 to 0.85)**	**0.74 (0.69 to 0.80)**	**0.72 (0.68 to 0.77)**
Discontinued ART						
Female	49	54	47	1.00 (ref)	1.00 (ref)	1.00 (ref)
Male	27	71	45	**0.46 (0.29 to 0.74)**	1.10 (0.77 to 1.57)	0.80 (0.53 to 1.20)
Loss to follow-up						
Female	269	601	1,037	1.00 (ref)	1.00 (ref)	1.00 (ref)
Male	392	839	1,559	**1.23 (1.05 to 1.45)**	**1.17 (1.05 to 1.31)**	**1.27 (1.17 to 1.37)**
Deaths						
Female	268	398	453	1.00 (ref)	1.00 (ref)	1.00 (ref)
Male	477	753	886	**1.52 (1.30 to 1.77)**	**1.60 (1.42 to 1.81)**	**1.61 (1.43 to 1.81)**

Table 4

Characteristics of HIV Care and Treatment among Adult PLHIV in 14 ART Facilities (2014–2016)

Year	Variable	Total	Gender	
		N	Male, N (%)	Female, N (%)
2014	Total number of PLHIV who attended	1,371	712 (100%)	659 (100%)
	PLHIV with active follow-up on ART at the end of the year **	1,305	670 (94%)	635 (96%)
	Number of PLHIV tested for CD4 count ***	0	0	0
	Number of PLHIV tested for viral load	0	0	0
2015	Total number of PLHIV who attended	6,635	3,520 (100%)	3,115 (100%)
	PLHIV with active follow-up on ART at the end of the year **	6,257	3,304 (94%)	2,953 (95%)
	Number of PLHIV tested for CD4 count ***	7,066	3,665	3,401
	Number of PLHIV tested for viral load	81	48 (1.4%)	33 (1.1%)
2016	Total number of PLHIV who attended	10,958	5,906 (100%)	5,052 (100%)
	PLHIV with active follow-up on ART at the end of the year **	10,308	5,535 (94%)	4,773 (95%)
	Number of PLHIV tested for CD4 count ***	13,607	7,238	6,369
	Number of PLHIV tested for viral load	304	176 (3.0%)	128 (2.5%)

** Cumulative number of PLHIV from previous year included;

*** Cumulative number of CD4 tests done (one patient may have been tested more than once)