Public Health Action

International Union Against Tuberculosis and Lung Disease
Health solutions for the poor

VOL 7 NO 3 PUBLISHED 21 SEPTEMBER 2017

Why are HIV-infected people not started on antiretroviral therapy? A mixed-methods study from Gujarat, India

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http://dx.doi.org/10.5588/pha.16.0108

Setting: Five purposively selected antiretroviral therapy (ART) centres in Gujarat, India.

Objectives: To assess the proportion of ART-eligible people living with the human immunodeficiency virus (PLHIV) who were not initiated on ART within 2 months of being recorded as eligible, to identify factors associated with non-initiation and to explore reasons from the provider's perspective.

Design: We used a mixed-methods design (triangulation) of 1) a quantitative phase involving record reviews and cohort analysis (Poisson regression) of PLHIV registered during April 2014–March 2015, and 2) a qualitative phase involving one-to-one interviews with 25 providers.

Results: Of 2079 ART-eligible PLHIV, 339 (16%) were not started on ART within 2 months. PLHIV with CD4 counts of <350 cells/µl and patients who were labourers, hospitalised, bedridden or registered with certain ART centres were more likely not to be initiated on ART. Qualitative results were categorised into two broad themes: government health system- and patient-related challenges, which validated and complemented the quantitative findings.

Conclusion: Several patient subgroups at greater risk of ART non-initiation were identified, along with reasons for risk; this has important programme implications for achieving the UNAIDS 90–90–90 goal, and particularly the second 90 component of having 90% of diagnosed PLHIV start ART.

In 2015 an estimated 36.7 million people globally were living with the human immunodeficiency virus (PLHIV), with 1.1 million deaths. As of December 2015, 17 million PLHIV were accessing antiretroviral therapy (ART).[1] Despite these achievements, significant gaps remain in the uptake of ART, with only about half of estimated PLHIV receiving treatment in 2015.[1]

Studies from sub-Saharan Africa and Asia have reported high rates of attrition between HIV diagnosis and ART initiation.[2–4] Previously published studies from India have confirmed these findings: about 20–26% of diagnosed PLHIV are lost before being registered at the ART centres, while 40–80% of ART-ineligible PLHIV are lost after registration at ART centres during pre-ART care.[5–9] There is no published evidence in India as to what proportion of ART-eligible PLHIV are lost before initiating ART. Analysis of routinely reported aggregate data from the National AIDS (acquired immune-deficiency syndrome) Control Programme (NACP) in the state of Gujarat, India, indicates that the gap between the number of people eligible for ART initiation and the number actually initiated on ART was approximately 12% in 2014–2015.[10]

Having all PLHIV assessed for ART eligibility and initiated on ART is a global priority, and central to achieving the bold new UNAIDS (Joint United Nations Programme on HIV/AIDS) 90–90–90 vision of diagnosing 90% of the estimated PLHIV, treating 90% of those diagnosed and achieving viral suppression in 90% of those treated.[11] Achieving this target is crucial if we are to end the HIV/AIDS epidemic by 2030, as envisaged in the United Nations Sustainable Development Goals.[12] In this context, quantifying the gap between registration at ART centres and ART initiation and knowing the reasons for this gap are very important for the NACP.

There is limited evidence on factors influencing pre-ART attrition in India. A systematic review, mostly of studies from the African region and one qualitative study from Ethiopia, revealed multiple barriers for ART initiation which include costs, long distances to ART centres, stigma and fear of disclosure.[13,14] These factors tend to be context-specific, however, and there are challenges in generalising them to the national situation in India. While previous publications from India have quantitatively assessed the factors associated with pre-ART attrition among ART-ineligible PLHIV,[5–8] they have not provided insights into the reasons for attrition, which require qualitative study.[6,7]

We therefore aimed to quantify, among PLHIV enrolled for care in two districts of Gujarat, the gap between being recorded as eligible for ART and initiation on ART within 2 months of eligibility, and to assess the factors (both quantitatively and qualitatively) associated with non-initiation. The specific objectives were 1) to determine the number (proportion) not started on ART within 2 months among PLHIV eligible for ART at enrolment; 2) to assess the demographic and clinical factors associated with non-initiation of ART; and 3) to understand the perceived reasons for non-initiation of ART and explore suggestions for addressing non-initiation from the perspective of the providers.

MATERIAL AND METHODS

Study design

This was a mixed-methods design (triangulation), with a quantitative phase (cohort analysis using secondary data extracted from patient records) and a

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KEY WORDS
National AIDS Control Programme; ART-eligible; operational research; 90–90–90; SORT IT

Received 16 November 2016
Accepted 24 May 2017

PHA2017;7(3):183–192

qualitative phase (a descriptive study involving one-to-one interviews).[15]

Study setting

Gujarat, a state in western India that is divided into 33 districts, has an estimated 0.17 million PLHIV, with an estimated adult HIV prevalence of 0.42% (0.33–0.50).[16] As of 31 March 2015, there were 30 ART centres in Gujarat. This study was undertaken in five ART centres in two districts of Gujarat: three ART centres (Civil Hospital Ahmedabad, Sola Civil Hospital and V. S. Hospital) in Ahmedabad district (population 5.5 million) and two ART centres (SSG Hospital and Gotri Hospital) in Vadodara district (population 4.1 million). These five centres were purposively selected based on a preliminary analysis of aggregate programme data that showed that these centres had higher rates of ART non-initiation (within 2 months of eligibility) compared to the state average (~12%),[10] two of which also had the highest rates of ART non-initiation (20–24%). All five ART centres are located in Medical College Hospitals and are managed by a multi-disciplinary team of physicians, nurses, counsellors, pharmacists, data managers and care coordinators.

National AIDS Control Programme guidelines

Patients diagnosed with HIV infection at integrated counselling and testing centres (ICTC) are referred to the ART centre of their choice for follow-up and management. At the ART centre, patients are registered for care, assessed for ART eligibility and started on ART as per NACO guidelines.[7] All patients receive on average 2–3 sessions of ART preparedness counselling while undergoing clinical and laboratory screening. The counsellor provides detailed information so that the patient can understand the life-long nature of treatment, the drugs used and their adverse effects, and the need for strict adherence to treatment. Only when the counsellor certifies 'treatment preparedness' is the patient initiated on ART by the medical officer; this process usually takes approximately 7 days.[18]

All asymptomatic HIV-positive patients at WHO clinical stage 1 or 2 with a CD4 count <350 cells/μl are considered eligible for ART, while ART initiation is recommended irrespective of CD4 count in patients with WHO clinical stage 3 or 4, all those co-infected with TB, hepatitis co-infected patients with severe liver disease, all HIV-positive pregnant women and all HIV-positive children aged <5 years.[19]

While most PLHIV seek care in public sector ART centres, some seek care in the private sector, which is largely unregulated. The District AIDS Prevention and Control Unit (DAPCU) is the district level monitoring agency for NACP, which consists of a district AIDS control officer supported by a team of five, inclusive of the district supervisor and monitoring and evaluation officer. All care and support services for PLHIV are provided under one umbrella, the care and support centres (CSC). The CSC team comprises a project coordinator, a counsellor, a peer counsellor, and outreach workers, who provide counselling, outreach, referral and linkages, training in home-based care, life skill education, advocacy and support group meeting services. Information on all the clients enrolled at the ART centre is captured in standardised NACO paper-based tools (patient treatment cards, also referred to as 'white cards' and registers), and is also captured in an electronic database.

Study population and study period

Quantitative study

A comprehensive sample of all ART-naïve PLHIV newly registered for care from 1 April 2014 to 31 March 2015 found to be eligible for ART at five selected ART centres of Gujarat were included in the study. PLHIV who were transferred in for care from other centres, and those who were not eligible for ART at enrolment but became eligible later, were excluded.

Qualitative study

For the quantitative aspect of the study, interviews were conducted with health care providers. Programme staff and research team members completed a brain-storming exercise to select a variety of key informants (providers). Key informants who were assumed to be knowledgeable (aware) about PLHIV care due to their direct and prolonged work experience, and who were articulate and willing to participate, were purposively selected for one-to-one interviews to explore the challenges encountered and suggestion solutions in patient care. The sample size was guided by the saturation of findings. The data were collected between October 2015 and January 2016.

Data collection and analysis

Quantitative study

Variables for quantitative analysis were extracted from the already existing electronic patient database maintained at each ART centre by the data manager in an MS Excel database (Microsoft Corp, Redmond, WA, USA) and analysed using EpiData analysis software v. 2.2.2.183 (EpiData Association, Odense, Denmark).

The variables included sociodemographic and clinical characteristics such as age, sex, occupation, education, caste, baseline WHO clinical stage,[17] baseline CD4 count, presence of opportunistic infections and baseline functional status (graded as working, ambulatory and bedridden).[17] The outcome variable was 'ART non-initiation' within 2 months of enrolment for HIV care at an ART centre. The 2-month cut-off for ART initiation was chosen based on national guidelines and a citizen charter, and not upon clinical or epidemiological criteria,[20] which included death, loss to follow-up and those 'still in pre-ART care at 2 months'. Although some patients still in pre-ART care were started on ART after 2 months, they were considered as 'not initiated on ART' for the purpose of this analysis.

Relative risks (RR) and 95% confidence intervals (CI) were used as measures of association. All the variables were entered into a multivariable model (Poisson regression) in line with the exploratory approach to analysis, and adjusted RRs were computed. Regression analysis was performed in STATA software (v. 12.1, StataCorp, College Town, TX, USA). Variables with a P value ≤ 0.05 as computed using likelihood ratio tests were considered statistically significant.

ACKNOWLEDGEMENTS

This research was conducted through the Structured Operational Research and Training Initiative (SORT IT), a global partnership led by the Special Programme for Research and Training in Tropical Diseases at the World Health Organization (WHO/TDR, Geneva, Switzerland). The model is based on a course developed jointly by the International Union Against Tuberculosis and Lung Disease (The Union, Paris, France) and Médecins Sans Frontières (MSF, Geneva, Switzerland). The specific SORT IT programme that resulted in this publication was jointly developed and implemented by The Union South-East Asia Office (New Delhi, India); the Centre for Operational Research, The Union; the Operational Research Unit (LUXOR), MSF Brussels Operational Centre (Luxembourg); the Department of Preventive and Social Medicine, Jawaharlal Institute of Postgraduate Medical Education and Research (Puducherry, India); the Department of Community Medicine, Sri Manakula Vinayagar Medical College and Hospital (Puducherry, India); the Department of Preventive and Social Medicine, Medical College Baroda (Vadodara, India); and the National Institute for Research in Tuberculosis (Chennai, India).

The authors acknowledge National AIDS Control Organisation (New Delhi, India) and the Gujarat State AIDS Control Society (Gujarat, India) for the opportunity to conduct this operational research. The authors are thankful to the officers and staff of the Gujarat State AIDS Control Society, the officers of the Department of Community Medicine GMERS Medical College Sola Civil Hospital (Ahmedabad, India), the staff of the Centre of Excellence (Ahmedabad) and the ART centres in Ahmedabad and Vadodara, especially M Rawal, the data manager of the ART centres of VS Hospital (Ahmedabad), and M Bhura, the data manager of the ART Centre, GG Hospital (Jamnagar), for enthusiastically assisting in the process of data collection and compilation. The authors are also grateful to the key informants from the NACP facilities level (ART Centre, District AIDS Prevention and Control Unit, ICTC and CSC) staff and the people living with the human immunodeficiency virus of Gujarat who indirectly contributed to this study. Special thanks to S Velusamy, Jawaharlal Institute of Postgraduate Medical Education & Research (JIPMER, Puducherry, India), P Chinnakali, JIPMER, and H Shewade The Union South-East Asia Office (New Delhi, India), for their help in revising the analysis at the time of peer review.

Conflicts of interest: none declared.

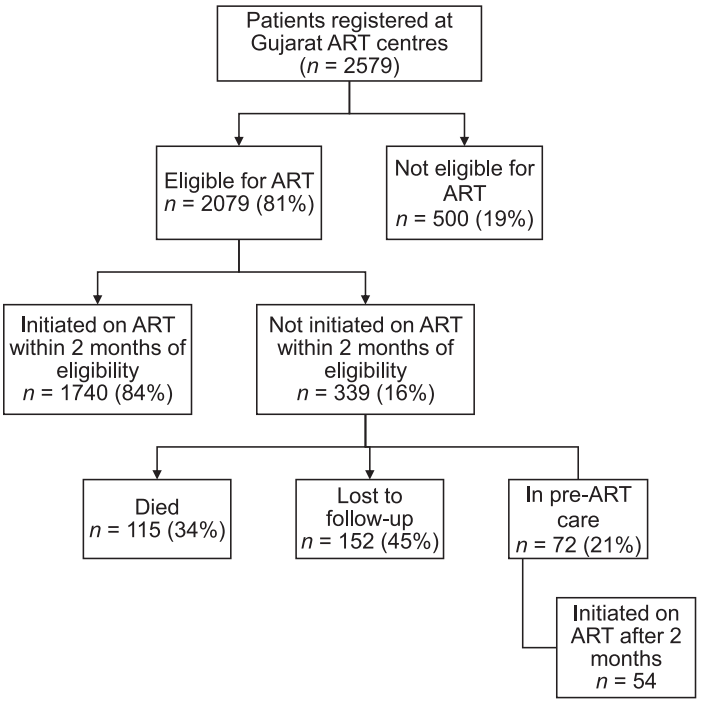

FIGURE 1 Flowchart depicting the cascade of care and outcomes among PLHIV eligible at enrolment in five selected ART centres of Gujarat, India, 2014–2015. ART = antiretroviral therapy; PLHIV = people living with the human immunodeficiency virus.

Qualitative study

Investigators trained in qualitative research methods interviewed the participants (interview guide in Appendix 1). If participants gave their consent, interviews were audio-recorded. If not, notes were taken. Each interview took approximately 15–20 minutes. Participant validation was undertaken after each interview by summarising the key findings to the participants. Transcription was performed on the same day as the interview to strengthen the completeness and accuracy of information. We performed descriptive content analysis. Coding was performed using Atlas.ti 7.5 software (Atlas.ti Scientific Software Development, Berlin, Germany). The categorisation of codes and the generation of themes from the categories were performed manually.[21] The findings were reviewed by KS and by ARD and AMVK to reduce subjective bias and to increase interpretive credibility. Any disagreements among the authors were resolved by discussion.[22] We followed the Consolidated criteria for reporting qualitative research (COREQ) for reporting the study.[23]

Ethics approval

Ethics approval was obtained from the Institutional Ethics Committee of the BJ Medical College and Civil Hospital, Ahmedabad, Gujarat, India, and the Ethics Advisory Group of the International Union Against Tuberculosis and Lung Disease, Paris, France. Informed consent was obtained from all the participants who were interviewed. To maintain confidentiality, the names of the ART centres were not reported in the analysis.

RESULTS

Quantitative

A total of 2079 PLHIV were found eligible for ART at the time of enrolment at the five ART centres during the study period. The median time to ART initiation was 7 days, with an interquartile range (IQR) of 4–16 days. Of the 2079 PLHIV eligible for ART, 339 (16%) were not started on ART within 2 months of registration. Of these, 115 (34%) died, 152 (45%) were lost to follow-up and 72 (21%) were still in pre-ART care at 2 months of enrolment (Figure 1). Of the latter group, 54 were started on ART after 2 months and 18 were still in pre-ART care as of 31 May 2015 (the date of data extraction).

Sociodemographic and clinical characteristics

The mean (standard deviation) age of the participants was 36 (±13) years and about two thirds were males. The majority of the participants were married. About one third of PLHIV were illiterate, a quarter were daily-wage labourers and two thirds belonged to socio-economically marginalised and vulnerable groups (referred to as scheduled castes, scheduled tribes and other backward classes by the Indian constitution).[24] The median CD4 count was 183 cells/µl (IQR 91–297), and 28% were WHO clinical stage 3 or 4. The proportion not initiated on ART varied between 10% and 21% across the ART centres. While most participants were working or ambulatory, about 12% were severely ill and bedridden. The median CD4 cell count among those who were started on ART (191 cells/µl, IQR 95–307) was higher than among those who were not (143 cells/µl, IQR 62–267 overall; 55 cells/µl, IQR 25–132 among patients who died; 207 cells/µl, IQR 116–284 among patients lost to follow-up). Among the 18 patients who remained in pre-ART care as of 31 May 2015, the median CD4 count was 958 cells/µl (IQR 231–2435) (Table 1).

Factors associated with non-initiation of ART

On adjusted analysis, PLHIV with CD4 counts <350 cells/ul, who were labourers, hospitalised, bedridden or registered at certain ART centres were more likely not to be initiated on ART (Table 2).

Qualitative

Twenty-five health care providers (13 male and 12 female) directly involved in the care of PLHIV were purposively sampled and interviewed in person. These included 5 staff nurses, 4 doctors, 1 community care coordinator, 11 counsellors, 1 monitoring and evaluation officer, 2 programme coordinators and 1 district supervisor from all five ART centres, co-located HIV testing centres, care and support centres and a district AIDS prevention and control unit.

Challenges in ART initiation and suggestions for improvement from the providers' point of view

The challenges in the initiation of ART as perceived by the providers were coded under 35 codes organised into 10 categories. These 10 categories were grouped into two broad themes: 1) government health system-related challenges, and 2) patient-related challenges. These are listed in Table 3 and briefly described below. Suggestions on how to improve ART uptake were coded under 29 codes and organised into six categories. These are presented in Table 4 and discussed later. All the themes and the categories are depicted in Figure 2.

Theme 1: Government health system-related challenges

The respondents identified the following factors as key barriers to ART initiation: long queues and increased waiting times for laboratory investigations, overburdened staff in centres with high patient loads, inadequate remuneration, delays in salary payment leading to a lack of job satisfaction and indifferent behaviour toward the patients, frequently changing programme guidelines on ART eligibility, and occasional shortages in supplies of anti-retro-

TABLE 1 Sociodemographic and clinical characteristics of ART-eligible PLHIV enrolled in five ART centres, Gujarat, India, 2014–2015

Variable	Total ART eligible *n* (%)	Started on ART *n* (%)	Not started on ART *n* (%)
Total	2079	1740	339
Age, years			
0–14	90 (4)	71 (4)	19 (6)
15–44	1389 (67)	1175 (68)	214 (63)
45–64	548 (26)	450 (26)	98 (29)
⩾65	52 (3)	44 (2)	8 (2)
Sex			
Male	1371 (66)	1129 (65)	242 (72)
Female	698 (33)	602 (34)	96 (28)
Transgender	10 (1)	9 (1)	1 (0)
Caste			
General	646 (31)	566 (32)	80 (24)
SC	349 (17)	288 (17)	61 (18)
ST	172 (8)	130 (8)	42 (12)
OBC	796 (38)	661 (38)	135 (40)
Unknown	116 (6)	95 (5)	21 (6)
Hospital admission			
Outdoor	1654 (80)	1428 (82)	226 (67)
Indoor	425 (20)	312 (18)	113 (33)
Education			
Illiterate	648 (31)	521 (30)	127 (37)
Primary	625 (30)	528 (30)	97 (29)
Secondary	696 (34)	596 (34)	100 (30)
College	110 (5)	95 (6)	15 (4)
Occupation			
Labourer	567 (27)	443 (26)	124 (37)
Other	1512 (73)	1297 (74)	215 (63)
Marital status			
Never married	392 (19)	312 (18)	80 (24)
Married/ cohabiting	1377 (66)	1176 (68)	201 (60)
Divorced/ widowed	310 (15)	252 (14)	58 (17)
WHO stage			
1	606 (29)	532 (30)	74 (22)
2	767 (37)	639 (37)	128 (38)
3	361 (17)	291 (17)	70 (20)
4	345 (17)	278 (16)	67 (20)
Functional status			
Working/ ambulatory	1796 (86)	1559 (90)	237 (70)
Bedridden	283 (14)	181 (10)	102 (30)
OI			
Present	647 (31)	524 (30)	123 (36)
Absent	1301 (63)	1113 (64)	188 (56)
Unknown	131 (6)	103 (6)	28 (8)
CD4 count (cells/μl)			
<350	1713 (82)	1421(82)	292 (86)
>350	350 (17)	314 (18)	36 (11)
Unknown	16 (1)	5 (0)	11 (3)
ART centre			
ARTC1	758 (37)	647 (37)	111 (33)
ARTC2	69 (3)	55 (3)	14 (4)
ARTC3	267 (13)	212 (12)	55 (16)
ARTC4	589 (28)	470 (27)	119 (35)
ARTC5	396 (19)	356 (21)	40 (12)

ART = antiretroviral therapy; PLHIV = people living with the human immunodeficiency virus; SC = scheduled caste; ST = scheduled tribe; OBC = other backward class; WHO = World Health Organization; OI = opportunistic infection.

viral drugs. Providers felt that these might be the reason for patients' loss of faith in government health facilities and preference for seeking care in the private sector.

Respondents felt that the main reason for the lack of knowledge among patients about the importance of timely ART initiation was ineffective counselling. Among bed-ridden and hospitalised patients, it is the care givers who interact with the ART staff and they do not always pass the information on to the patients. Patients thus continue to remain unaware of their HIV status and the need for life-long ART.

In Gujarat, the cost of patients' travel to the ART centre is expected to be reimbursed under the Jatan Project, a state government scheme for travel reimbursement for PLHIV visiting ART centres. Due to irregularities in travel cost reimbursements, however, financially poor patients found it difficult to adhere to the ART centre appointments.

Theme 2: Patient-related challenges

According to the health care providers, some patients perceived themselves as being healthy and were in denial about the existence of the HIV infection or the need for ART, while others reported fears related to HIV, disclosure to family members and resulting stigma and discrimination, and the adverse effects of ART and other medicines for co-infections. The providers suggested that the counsellors should discuss and clarify these fears and misconceptions with the PLHIV.

The patients' preference for private health sector and other systems of medicine was cited as another reason for non-initiation of ART. While some severely sick patients from rural areas sought treatment from traditional faith healers or ayurvedic healers (the traditional Indian system of medicine), others, especially wealthy patients, preferred to go to private providers to keep their HIV status confidential. The providers felt that patients tended to avoid government health facilities due to the long queues, fear of disclosure and unfriendly staff behaviour.

Household responsibilities, the non-availability of care givers, frequent job-related travel, travelling for social events and the non-reimbursement of indirect costs by the Jatan Project were cited as other reasons for ART non-initiation. According to the providers, many patients who were diagnosed late and reached the ART centre with severe illness (including those bedridden at home) died before the initiation of ART. Providers also felt that migrants tended not to comply with appointments and returned to their native places without leaving accurate contact details with the ART centre staff. While these patients might be enrolled with other ART centres, this information is not communicated between centres, and such cases are recorded as 'lost to follow-up'.

DISCUSSION

This is to our knowledge the first study from India to quantify non-initiation of ART among ART-eligible PLHIV and provide insights into possible reasons. About one in six PLHIV were not initiated on ART within 2 months despite being eligible; of these, about 80% died or were lost to follow-up. Of those who were receiving pre-ART care at 2 months, the vast majority were started on ART after 2 months. A small minority continued to remain in pre-ART care, possibly because they were relatively healthier. ART non-initiation varied across ART centres, and was more likely to occur among in-patients, bedridden patients, daily wage labourers and those with advanced immune deficiency.

TABLE 2 Sociodemographic and clinical characteristics associated with non-initiation of ART among ART-eligible PLHIV enrolled in five ART centres, Gujarat, India, 2014–2015

Variable	Total ART eligible *n*	Not initiated on ART *n* (%)	Crude RR (95%CI)	*P* value	aRR (95%CI)	*P* value
Total	2079	339 (16)				
Age, years				0.35		0.52
0–14	90	19 (21)	1.4 (0.9–2.1)		1.6 (0.9–3.0)	
15–44	1389	214 (15)	1.0		1.0	
45–64	548	98 (18)	1.2 (0.9–1.4)		1.0 (0.8–1.4)	
⩾65	52	8 (15)	1.0 (0.5–1.9)		0.9 (0.4–2.0)	
Sex				0.06		0.75
Male	1371	242 (18)	1.3 (1.0–1.6)		1.1 (0.8–1.5)	
Female	698	96 (14)	1.0		1.0	
Transgender	10	1 (10)	0.7 (0.1–4.7)		0.9 (0.1–6.8)	
Caste				0.003		0.12
General	646	80 (12)	1.0		1.0	
SC	349	61 (18)	1.4 (1.0–1.9)		1.3 (0.9–1.9)	
ST	172	42 (24)	2.0 (1.4–2.8)		1.6 (1.1–2.4)	
OBC	796	135 (17)	1.4 (1.1–1.8)		1.2 (0.9–1.6)	
Hospital admission				0.0001		0.08
Outdoor	1654	226 (14)	1.0		1.0	
Indoor	425	113 (27)	2.0 (1.6–2.4)		1.3 (0.9–1.8)	
Education				0.05		0.78
Illiterate	648	127 (20)	1.4 (0.9–2.4)		1.0	
Primary	625	97 (16)	1.1 (0.7–1.9)		0.9 (0.6–1.2)	
Secondary	696	100 (14)	1.1 (0.6–1.7)		0.9 (0.6–1.2)	
College	110	15 (14)	1.0		1.0 (0.5–1.8)	
Occupation				0.0001		0.01
Labourer	567	124 (22)	1.5 (1.3–1.9)		1.4 (1.1–1.8)	
Other	1512	215 (14)	1.0		1.0	
Marital status				0.01		0.20
Never married	392	80 (20)	1.4 (1.1–1.8)		1.3 (0.9–1.8)	
Married/cohabiting	1377	201 (15)	1.0		1.0	
Divorced/widowed	310	58 (19)	1.3 (1.0–1.7)		1.2 (0.8–1.6)	
WHO stage				0.007		0.24
1 and 2	1373	202 (15)	1.0		1.0	
3 and 4	706	137 (19)	1.3 (1.1–1.6)		0.6 (0.4–1.1)	
Functional status				0.0001		0.001
Working/ambulatory	1796	237 (13)	1.0		1.0	
Bedridden	283	102 (36)	2.7 (2.3–3.3)		2.4 (1.7–3.3)	
OI				0.01		0.21
Present	647	123 (19)	1.3 (1.1–1.6)		1.6 (0.9–2.8)	
Absent	1301	188 (15)	1.0		1.0	
CD4 count (cells/μl)				0.002		0.04
<350	1713	292 (17)	1.7 (1.2–2.3)		1.5 (1.0–2.3)	
>350	350	36 (10)	1.0		1.0	
ART centre				0.0001		0.004
ARTC1	758	111 (15)	1.5 (1.0–2.0)		1.6 (1.1–2.4)	
ARTC2	69	14 (20)	2.0 (1.2–3.5)		2.0 (1.0–3.9)	
ARTC3	267	55 (21)	2.0 (1.4–3.0)		2.4 (1.4–4.0)	
ARTC4	589	119 (20)	2.0 (1.4–2.8)		2.0 (1.3–2.9)	
ARTC5	396	40 (10)	1.0		1.0	

ART = antiretroviral therapy; PLHIV = people living with the human immunodeficiency virus; RR = relative risk; aRR = adjusted relative risk; CI = confidence interval; SC = scheduled caste; ST = scheduled tribe; OBC = other backward class; WHO = World Health Organization; OI = opportunistic infection.

The findings of our study are strikingly similar to those conducted elsewhere, mainly in Africa. Studies from Kenya, Malawi, South Africa and Uganda[25–28] reported an 18–26% gap in ART initiation, of whom up to 39% were non-traceable and approximately 34% had died. Another systematic review summarising patient and programmatic factors associated with linkage to ART care identified transport costs, distance, stigma and fear of disclosure as the main reasons for not initiating ART, followed by staff shortages, long waiting times, fear of medication side effects, male sex, younger age and the need to take time off from work. All of these elements have also been identified as contributing factors in our study.[8,9,13,14]

TABLE 3 Challenges in ART initiation from providers' point of view in five selected ART centres of Gujarat, India, 2014–2015

Category	Subcategory	Verbatim quotes
Theme 1: Government health system-related challenges		
Health facility-related challenges	High patient load Long queues and waiting times for investigations, especially USG Lack of coordination between the different departments within the hospital and ART centre	At the time of enrolment, multiple laboratory investigations have to be done for which patients have to visit many places in the hospital, due to long queues at these places or due to their sick condition, they drop out [Counsellor 1, male, age 37 years] Sometimes patients have to undergo USG or X-ray for confirmation of tuberculosis or other opportunistic infections, but due to long waiting period of 2–3 months for USG, the decision about eligibility gets delayed [Counsellor 1, male, age 37 years] They are tired of various referrals in hospital for various investigations [SMO 15, male, age 35 years] For various opportunistic infections client have to approach concerned OPDs as per referral so he/she is exhausted [Counsellor 25, male, age 28 years]
Programme-related challenges	Frequently changing guidelines for initiating ART Occasional shortages in supplies of antiretroviral drugs	Once upon a time, due to shortage of ART, we were not able to initiate ART in new patients [Counsellor 2, female, age 36 years]
Staff-related challenges	Overburdened staff Inadequate remuneration, delays in salary payment, leading to lack of job satisfaction Frequent change in job postings from heavily crowded on-ART care services to less crowded pre-ART care services and vice versa Indifferent behaviour by health care staff towards patients	Counselling should not be affected by delay in salary payment, but it does affect us. After all, we are also human beings [Counsellor 3, male, age 29 years]
Counselling-related challenges	Inadequate information given to patient during counselling Unrealistic expectations on the part of the patient leading to disappointment with government staff and non-initiation of ART Lack of knowledge regarding the importance of timely ART initiation and harms of non-initiation among PLHIV, especially among admitted patients	Patients referred from ICTC, expects immediate initiation of ART. However, assessment for eligibility and preparedness counselling may take 2–3 visits to the counsellor. Patients tend to drop out during this phase [Counsellor 1, male, age 36 years] At the time of discharge, patient feels that his medical treatment is completed and does not come for follow-up visits [Counsellor 1, male, age 36 years]
Travel and finance-related challenges	Irregularities in travel cost reimbursement (in Gujarat, patients' travel expenditures to ART centre are expected to be reimbursed under the Jatan Project, a state government scheme for travel reimbursement of PLHIV visiting ART centres)	As the travel reimbursement under Jatan project is not regular, patients think that we are misguiding them for the same [Counsellor 1, male, age 36 years] Problem of reimbursement of travel allowance under Jatan project as it is sometimes not reimbursed [CCC 1, Female, 37 years]
Theme 2: Patient-related challenges		
Fears and misconceptions	Perceived healthy status Fears related to HIV Fear of disclosure to family members Stigma and discrimination Fear of adverse effects of ART and other medicines	Some patients say: As I do not have any problem, do I need any medication? [District supervisor 1, male, age 36 years] Very big disease! [Staff nurse, 1, female, age 34 years] Taking two medicines together will be hot for me [Counsellor 4, male, age 30 years] Some patients have inherent stigma related to daily need of taking medicine in the presence of others [Counsellor 4, male, age 30 years]
Health care-seeking behaviour	Faith in traditional faith healers Belief in Ayurveda (Indian system of medicine) Faith in private providers due to their reassurance of cure from the disease Patients financially better off prefer private providers Avoiding government facility due to long queues or fear of disclosure or poor support from the staff	Severely ill patients from rural area approach supernatural powers such as saints and tantric faith healers [Counsellor 5, female, age 28 years] If client is from upper middle class or middle class then he prefers private hospitals [MO 1, male, age 40 years] Because of fear of disclosure, they did not turn up [Counsellor 1, male, age 37 years]
Personal, social and financial problems	Household responsibilities Non-availability of caregivers Frequent job-related travel Travelling for social events Non-reimbursement of indirect costs by the Jatan Project	Female patients not able to spare time due to responsibility of household work [Counsellor 2, female, age 36 years] There are some truck drivers whose post-test counselling is done, but when contacted to come for treatment, they say that they are out of station due to job and will contact once they return, but never do so [District supervisor 1, male, 36 years]
Severe clinical conditions	Poor general clinical condition Late detection of HIV status	Those who are seriously ill prefer to go to their village for their last days [Counsellor 2, female, age 36 years]
Migration	Migrants tend to be lost to follow-up, not having valid proof of address, difficult to track	Migrant patients not able to provide valid proof of Gujarat address [Counsellor 4, male, age 30 years] On tracking, we came to know that patient returned to native place [District supervisor, 1, male, age 36 years]

ART = antiretroviral therapy; SMO = senior medical officer; OPD = out-patient department; CCC = community care coordinator; MO = medical officer; ICTC = integrated counselling and testing centres; PLHIV = people living with the human immunodeficiency virus.

TABLE 4 Suggestions to improve ART initiation from the providers' point of view in five selected ART centres of Gujarat, India, 2014–2015

Category	Sub-category	Verbatim quotes
Theme 1: Government health system-related suggestions		
Health facility-related suggestions	Infrastructural expansion of ART centres Expansion of links between ART centre facilities Blood sample collection at ARTC and ICTC Priority appointment for USG Closely scheduled appointments Strengthen inter-departmental linkage and referral	To manage patient load at ART centre, every ICTC may be converted to link ART centre [Counsellor 6, male, age 32 years]
Staff-related suggestions	Regular workshops to improve communication skills of health care workers Regularise monthly remunerations and annual increments Appoint additional staff as per workload Adopt methods to improve job satisfaction among staff Change in rotation policy of counsellors from pre-ART to on-ART care	To avoid misconceptions, sensitisation and awareness workshops must be organised [Counsellor 7, female, age 40 years] One counsellor can be fixed for follow-up of pre-ART patient care and during the duty rotation in on-ART care, the documentation related work can be done by another counsellor [Counsellor 2, female, age 36 years]
Counselling-related suggestions	Strengthen post-test counselling at ICTC Strengthen preparedness counselling at ARTC	Counsellors' skills to be improved for counselling on acceptance of HIV; proper counselling need to happen at ICTC [Counsellor 6, male, age 32 years]
Travel and finance-related suggestions	Regularise travel reimbursement under state government Jatan Project	Travel reimbursement under Jatan project, must be regularised [Counsellor 1, male, 37 years]
Theme 2: Patient-related suggestions		
Fears and misconceptions	Counselling services of ICTC and ARTC to be strengthened and should be sensitive to the fears and misconceptions of PLHIV	Fear of status disclosure may not be a reason for all patients [Counsellor 6, male, 32 years]
Personal, social and financial problems	ART dispensing on hospital holidays Linkage of PLHIV to social welfare schemes	ART dispensing needs to be started on hospital holidays especially for those who are not able to come on regular days due to any reason [Counsellor 2, female, 36 years].
Severe clinical conditions	Complete clinical work-up of patients Fast tracking while seeking care in hospital Early diagnosis of tuberculosis Priority appointments for sick patients Instituting helpline number for emergency	A circular may be sent from hospital to all departments that HIV patients need to be fast tracked, so that they need not wait in queues [Counsellor 6, male, 32 years] If dates are given for USG within 7 days of request, it will reduce the problem [Counsellor, 4, Male, 30 years]
Migration	Home address verification e-tracking across the ART centres Telephone tracking Mobile phone reminders to PLHIV Strengthening of Vihaan project provision of outreach worker at ART centre Migrant policy	If one ORW given for every 500 patients at the ART centre, then home visit may be planned by ART centre for migrant patients address verification [Counsellor 6, male, 32 years] There should be some policy to get feedback about interdistrict/state LTFU tracking activities [Counsellor 1, Male, 37 years]

ART = antiretroviral therapy; ICTC = integrated counselling and testing centres; ARTC = ART centres; USG = ultrasonography; PLHIV = people living with the human immunodeficiency virus; ORW = outreach worker; LTFU = loss to follow-up.

There were several strengths to this study. First, the mixed-methods research design helped in providing a complete picture of the magnitude, causes and possible solutions to the problem of non-initiation of ART among ART-eligible PLHIV. The quantitative and qualitative components of the study each mutually validated and complemented the findings of the other component. Second, as the study was conducted under routine programmatic settings, the findings reflect the ground reality and provide actionable information for programme managers. Third, the study used high quality data from a large sample size with very few missing values. A large number of providers were interviewed and saturation was achieved.

There were some limitations. As the study was conducted in five selected ART centres, all of which were based in medical college hospitals, caution is required before extrapolating the findings to other ART centres based at secondary care level. While several possible reasons for non-initiation of ART were identified, the relative significance of these reasons in quantitative terms was not assessed. This needs further investigation using quantitative survey methods. The findings from the qualitative component of this study should be helpful in feeding into the questionnaire for such a survey.

Programme implications

The study has many programme implications. First, ineffective post-test counselling at the ICTCs was one of the key factors attributed to the non-initiation of ART. This needs attention. The insights found in this study are around patient fears and misconceptions, and the preference for private providers and unqualified providers should be used to prepare a counselling guide used for training. This will help to customise counselling to the unique needs and circumstances of the patients and prevent the risk of non-initiation of ART.

The time spent with the patient during counselling was related to patient load and to staff shortages. Two strategies were suggested to address this issue, one to reduce the patient load and another to increase the staff strength. The suggestion to expand and establish links between ART centres in all ICTCs is excellent, as this would shift clinically stable patients on ART from the main ART centres and reduce congestion. This would provide more time per patient for the staff at the main ART centres, who could focus on more complex and clinically challenging cases and ensure that all PLHIV are started on ART.

Second, the study identified several patient subgroups at higher risk for ART non-initiation. These subgroups should re-

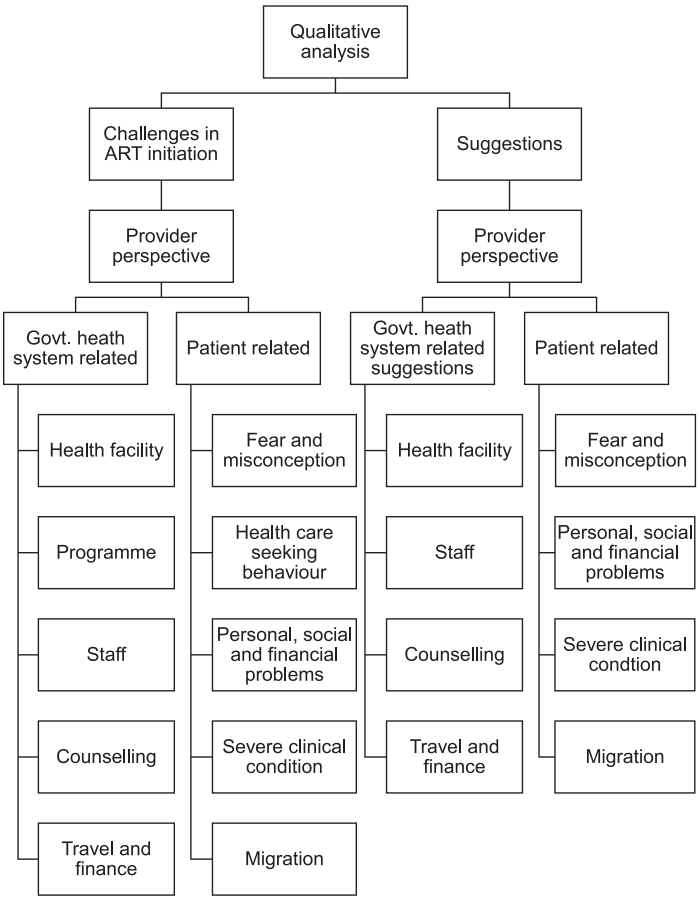

FIGURE 2 Challenges in ART initiation and suggested solutions in five selected ART centres of Gujarat, India, 2014–2015. Govt. = government; ART = antiretroviral therapy.

ceive prioritised attention from ART centre staff, who should spend more time with such patients during counselling and provide more frequent follow-up by outreach workers.

Third, there were several suggestions to improve health service delivery, which include prioritising PLHIV for all investigations, especially ultrasonography, single-window blood sample collection at ART centres, improving coordination among the different departments of the hospital and the ART centre, escorting patients wherever required, and fast-tracking them for services within the hospital and enhanced tracking and monitoring. These interventions would likely reduce delays in ART initiation and save lives.

Fourth, poor staff behaviour was another reason for patients' preference for seeking care in the private sector, often through unqualified providers, which could be hazardous. This could partly be addressed by training staff in 'soft' skills, including effective communication. Poor staff behaviour may also, however, be a reflection of a lack of job satisfaction, which in turn is related to the irregular payment of salaries and annual increments. These issues need to be urgently addressed.

Finally, most patients who were not initiated on ART either died or were lost to follow-up, and had significantly lower CD4 counts compared to patients started on ART. This indicates that PLHIV are accessing care at advanced stages of immune deficiency. To prevent this and to diagnose HIV early, HIV testing needs to be decentralised to health sub-centres in the public health system, and provider-initiated HIV testing needs to be expanded to include presumptive TB patients, all in-patients and partners of PLHIV. The WHO 2016 guidelines recommend that all diagnosed PLHIV should be started on ART irrespective of CD4 count.[29] Programmatic data from several countries offering earlier ART have shown significant increases in ART uptake and linkage to care, reduction in the time between HIV diagnosis and ART initiation regardless of baseline CD4 cell count, and an increase in the median CD4 value at ART initiation.[29–32] The NACP in India should consider implementing this recommendation as soon as possible if we are to achieve the 90–90–90 targets and end the HIV epidemic by 2030.[11,12] These goals cannot be achieved without integrating HIV care and support into the general health system and making HIV care the responsibility of all health care providers.

In conclusion, about 16% of ART-eligible PLHIV were not started on ART in five selected ART centres of Gujarat, and most of these died or were lost to follow-up. Several patient sub-groups at higher risk of ART non-initiation and reasons for non-initiation of ART from the provider perspective were identified in this study. These findings have important programme implications.

References

1 Joint United Nations Programme on HIV/AIDS. HIV Fact Sheet 2016. Geneva, Switzerland: UNAIDS, 2016. http://www.unaids.org/en/resources/fact-sheet Accessed July 2017.
2 Rosen S, Fox M P. Retention in HIV care between testing and treatment in sub-Saharan Africa: a systematic review. PLOS Med 2011; 8: e1001056.
3 Mugglin C, Estill J, Wandeler G, et al. Loss to programme between HIV diagnosis and initiation of antiretroviral therapy in sub-Saharan Africa: systematic review and meta-analysis. Trop Med Int Health 2012; 17: 1509–1520.
4 Alvarez-Uria G. Description of the cascade of care and factors associated with attrition before and after initiating antiretroviral therapy of HIV infected children in a cohort study in India. PeerJ 2014; 2: e304.
5 Shastri S, Sathyanarayna S, Nagaraja S B, et al. The journey to antiretroviral therapy in Karnataka, India: who was lost on the road? J Int AIDS Soc 2013; 16: 18502.
6 Shankar D, Kumar A M V, Rewari B, et al. Retention in pre-antiretroviral treatment care in a district of Karnataka, India: how well are we doing? Public Health Action 2014; 4: 210–215.
7 Devi N P G, Ajay K M V, Palanivel C. High loss to follow-up among children on pre-art care under national AIDS program in Madurai, South India. J Acquir Immune Defic Syndr 2015; 69: 109–114.
8 Chakravarty J, Kansal S, Tiwary N, Sundar S. Why do patients in pre-anti retroviral therapy (ART) care default: a cross-sectional study. Indian J Community Med 2016; 41: 241–244.
9 Sarna A, Bachani D, Sebastian M, Sogarwal R, Battala M. Factors affecting enrolment of PLHIV into ART services in India. New Delhi, India: Population Council, 2010.
10 Gujarat State AIDS Control Society. Annual report : 2013–14 National AIDS Control Programme Phase IV. Ahmedabad, India: Gujarat State AIDS Control Society, 2014.
11 Joint United Nations Programme on HIV/AIDS. 90–90–90 an ambitious treatment target to help end the AIDS epidemic. Geneva, Switzerland: UNAIDS, 2014. http://www.unaids.org/sites/default/files/media_asset/90-90-90_en_0.pdf Accessed July 2017.
12 United Nations. Transforming our world: the 2030 Agenda for Sustainable Development. New York, NY, USA: UN, 2015.
13 Govindasamy D, Ford N, Kranzer K. Risk factors, barriers and facilitators for linkage to antiretroviral therapy care: a systematic review. AIDS 2012; 26: 2059–2067.
14 Kulkarni S, Hoffman S, Gadisa T, et al. Identifying perceived barriers along the HIV care continuum: findings from providers, peer educators, and observations of provider-patient interactions in Ethiopia. J Int Assoc Provid AIDS Care 2016; 15: 291–300.
15 Creswell J W, Vicki L, Clark P. Designing and conducting mixed methods research. In: Tashakkori A & Teddle C, eds. Sage handbook of mixed methods research in social and behavioral research. 2nd ed. Thousand Oaks, CA, USA: Sage Publications, 2011.
16 National AIDS Control Organisation and National Institute of Medical Statistics. India HIV estimations 2015. New Delhi, India: Ministry of Health and Family Welfare, 2015.
17 National AIDS Control Organisation. Antiretroviral therapy guidelines for

HIV-infected adults and adolescents: May 2013. New Delhi, India: Ministry of Health and Family Welfare, 2013.
18 National AIDS Control Organisation. Operational guidelines for ART services. New Delhi, India: Ministry of Health and Family Welfare, 2012. http://naco.gov.in/sites/default/files/Operational guidelines for ART services.pdf Accessed July 2017.
19 World Health Organization. Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public health approach. Geneva, Switzerland: WHO, 2010.
20 National AIDS Control Organisation. Citizens and clients charters 2013–2014. New Delhi, India: Ministry of Health and Family Welfare, 2014. http://naco.gov.in/sites/default/files/Citizens_Clients%20Charter_2013-14.pdf Accessed July 2017.
21 Kvale S. Doing interviews. London, UK: Sage Publications, 2007.
22 Lincoln Y S, Guba E G. Naturalistic inquiry. New York, NY, USA: Sage Publications, 1985.
23 Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. Int J Qual Health Care 2007; 19: 349–357.
24 Ministry of Law, Government of India. The Constitution (Scheduled Castes) Order, 1950. New Delhi, India, 1950 http://lawmin.nic.in/ld/subord/rule3a.htm Accessed July 2017.
25 Karcher H, Omondi A, Odera J, Kunz A, Harms G. Risk factors for treatment denial and loss to follow-up in an antiretroviral treatment cohort in Kenya. Trop Med Int Health 2007; 12: 687–694.
26 Zachariah R, Harries A D, Manzi M, et al. Acceptance of anti-retroviral therapy among patients infected with HIV and tuberculosis in rural Malawi is low and associated with cost of transport. PLOS ONE 2006; 1: e121.
27 Lawn S, Myer L, Harling G, Orrell C, Bekker L, Wood R. Determinants of mortality and non death losses from an antiretroviral treatment service in South Africa: implications for program evaluation. Clin Infect Dis 2006; 43: 770–776.
28 Amuron B, Namara G, Birungi J, et al. Mortality and loss-to-follow-up during the pre-treatment period in an antiretroviral therapy programme under normal health service conditions in Uganda. BMC Public Health 2009; 9: 290.
29 World Health Organization. Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection. 2nd ed. Geneva, Switzerland: WHO, 2016. http://apps.who.int/iris/bitstream/10665/208825/1/9789241549684_eng.pdf?ua=1 Accessed July 2017.
30 World Health Organization. Maximizing the treatment and prevention potential of antiretroviral drugs: early country experiences towards implementing a treat-all policy. WHO/HIV/2015.35. Geneva, Switzerland: WHO, 2015 http://www.unaids.org/en/PolicyAndPractice/HIVTreatment/default.asp Accessed July 2017.
31 Brasilia Ministerio da Saúde. Bolentim epidemiológico DST/HIV/AIDS Ano III, 2014. Brasilia, Brazil: Ministry of Health, 2015. http://saude.es.gov.br/Media/sesa/NEVE/Boletim%20Epidemiologico/AN%C3%81LISE%20Dados%20da%20AIDS,%20S%C3%8DFILIS%20e%20HV%20%20-%20BOL%20EPID%20ES%20N.%2030-%20at%C3%A9%20DEZ%202014%20novo.pdf Accessed July 2017. [Portuguese]
32 Kato M, Long N H, Duong B D, et al. Enhancing the benefits of antiretroviral therapy in Vietnam: towards ending AIDS. Curr HIV/AIDS Rep 2014; 11: 487–495.

APPENDIX

Key informant interview: interview guide
Name of the participant:
Designation:
Date of interview:
Interview start/end time:
Name of the interviewer:
After a brief introduction to the participant regarding the purpose of the interview, the interviewer will obtain written informed consent for the interview. Written informed consent will also be requested for audio recording.

1 What are the challenges at programme level for initiation of ART? [probe… guidelines, logistics, manpower, referral and linkages, investigation, etc.]
2 What are the suggested solutions for these problems? [probe ... any ideas can be given]
3 What are the patient related problems in early initiation of ART? [probe … time, work, money, distance, etc.]
4 What are the suggested solutions for the same? [probe…any ideas can be given]
5 Anything else you want to share with me? [your experiences]

Investigator will complete the interview by acknowledging the time spared by the participant from his/her busy schedule. He/she will also give a summary of the notes taken and confirm the same from the participant.

Patient interview: interview guide
Date of interview:
Place of interview:
Interview start/end time:
Name of the interviewer:
After a brief introduction to the participant regarding the purpose of the interview, the interviewer will obtain written informed consent for the interview. Written informed consent will also be requested for audio recording. Based on the basic information available in the patient's treatment card, we will probe specific issues related to the patient.

1 How is your treatment going on? [probe ... source, regularity, problems]
2 What are the challenges/problems you are taking/facing while getting treatment from us? [probe … example, social, work, time, money]
3 Is there anything we can do to help you start treatment? [probe … your suggestion]
4 Anything else you want to share with me? [your experience]

Investigator will complete the interview by acknowledging the time spared by the participant from his/her busy schedule. He/she will also give a summary of the notes taken and confirm the same from the participant.

Contexte : Cinq centres du TAR (traitement antirétroviral) sélectionnés dans ce but dans l'état de Gujarat, Inde.
Objectifs : Evaluer la proportion de personnes vivant avec le virus de l'immunodéficience humaine (PVVIH) éligibles pour le TAR non mis sous TAR dans les 2 mois de leur éligibilité, identifier les facteurs associés à la non initiation et explorer les raisons vues par les prestataires de soins.
Schéma : Nous avons eu recours à un mélange de méthodes (triangulation) : 1) une phase quantitative impliquant une revue des dossiers et une analyse de la cohorte (régression de Poisson) des PVVIH enregistrés entre avril 2014 et mars 2015, et 2) une phase qualitative impliquant des entretiens individuels avec 25 prestataires de soins.
Résultats : Sur 2079 PVVIH éligibles au TAR, 339 (16%) n'ont pas été mis sous traitement dans les 2 mois. Les PVVIH ayant un taux de CD4 <350 cellules/µl, les patients qui étaient des travailleurs journaliers, hospitalisés, alités ou suivis par certains centres du TAR ont été plus susceptibles de ne pas être mis sous TAR. Les résultats qualitatifs ont été classés en deux vastes catégories : système de santé du gouvernement et défis liés aux patients ; ceux-ci ont validé et complété les résultats quantitatifs.
Conclusion : Plusieurs sous-groupes de patients ayant un risque plus élevé de non mise en route du TAR et les raisons de ce problème ont été identifiés ; ceci pourrait avoir des implications importantes pour le programme dans l'atteinte de l'objectif 90–90–90, surtout en ce qui concerne le deuxième 90, qui consiste à débuter le TAR chez 90% des PVVIH diagnostiqués.

Marco de referencia: Cinco centros de suministro del tratamiento antirretrovírico (TAR) de Gujarat en la India, escogidos por muestreo dirigido.
Objetivos: Evaluar la proporción de personas positivas frente al virus de la inmunodeficiencia humana (PPVIH) aptas para recibir el TAR, que no habían iniciado el tratamiento 2 meses después de haberse considerado idóneas; determinar los factores asociados con la falta de iniciación del TAR; y analizar las razones desde la perspectiva de los profesionales de salud.
Método: Se utilizó un diseño de métodos mixtos (triangulación), con una fase cuantitativa de análisis de las historias clínicas y de cohortes de PPVIH registradas de abril del 2014 a marzo del 2015 y una fase cualitativa con entrevistas personales a 25 profesionales de salud.
Resultados: De las 2079 PPVIH aptas para recibir el TAR, 339 no lo habían iniciado en un lapso de 2 meses (16%). La probabilidad de no iniciar el TAR fue mayor en las PPVIH con cifras de linfocitos CD4 <350 células/µl, los pacientes que eran obreros, estaban hospitalizados, encamados o que acudían a determinados centros de suministro de TAR. Los resultados se clasificaron en dos amplias categorías, a saber: problemas relacionados con el sistema público de salud o atribuibles a los pacientes, con lo cual se validaron y complementaron los resultados cuantitativos.
Conclusión: Varios subgrupos de pacientes presentaron un mayor riesgo de no iniciar el TAR y se determinaron las razones del riesgo; los resultados pueden tener repercusiones importantes en el programa y favorecer el progreso hacia el cumplimiento del triple objetivo 90–90–90, sobre todo de su segundo componente, según el cual el 90% de las PPVIH debe iniciar el TAR.

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e-ISSN 2220-8372
Editor-in-Chief: Dermot Maher, MD, Switzerland
Contact: pha@theunion.org
PHA website: http://www.theunion.org/what-we-do/journals/pha
Article submission: http://mc.manuscriptcentral.com/pha