Introduction

Despite advances in treatment, approximately 2 million people acquired HIV in 2015 and in total 36.7 million individuals live with the virus worldwide.

Given the high effectiveness of ART, HIV transmission and the associated mortality are largely attributed to the substantial number of HIV-infected individuals who are not aware of their infection and/or do not have access to care.

Aiming to HIV infection elimination, UNAIDS set the 90-90-90 target by 2020.

Unless a sufficient number of people with HIV (PLHIV) are engaged in all steps of the HIV care cascade (Diagnosis, Treatment, Care, Support), people will be fully benefiting from ART.

While a 4-stage Care has provided useful public health information, additional stages, such as the estimation of the diagnosed people who are linked to care and the proportion of people among those started treatment who are retained in care, could have an added value, particularly for the “test and” current policy.

Aim

We aimed to propose and construct a 6-stage Care in Greece, overall and by risk group, along with qualitative indicators, to depict the situation towards the UNAIDS goal and to assess risk group and stage-specific weaknesses.

Patients and Methods

The Care was constructed combining information from the HIV/AIDS surveillance system operated by the Hellenic Center for Disease Control and Prevention (HCDCP) and from the Athens Polytechnic AIDS Cohort Study (AAPCS), a nationwide cohort that began in 1996.

The Care included:

• (i) number of people living with HIV (PLHIV) by the end of 2013
• (ii) proportion of PLHIV ever diagnosed, the number of diagnosed individuals was retrieved from the HIV/AIDS registry at the HCDCP
• (iii) proportion of diagnosed linked to care, individuals with at least one CD4 measurement reported, an AIDS diagnosis or those initiated ART, were considered as linked to care.

The diagnosis of people linked to care was obtained based on HCDCP data, which was then cross-checked with the number of the diagnosed people who participated in the audits of the Health Care Centers, National Blood Service and National Virology Center.

• (iv) proportion of linked who ever initiated ART, according to HCDCP data, irrespective of treatment guidelines or antiretroviral regimes, the proportion of initiating ART among the HCDCP participants was also estimated and compared to that reported from the RDCPC.

• (v) the proportion of treated who retained in care, estimated using HCDCP data. All patients with at least one clinic visit, on treatment or with laboratory test taken between 15/07/2012 and 31/12/2013, were considered as being retained in care. Adjustments for HCDCP coverage and representation were made as well.

• (vi) proportion of the retained in care who are virally suppressed estimated using HCDCP participation率, and the proportion of those retained in care who have undetectable copies, or hepatitis care. Viral treatment accuracy was available only at the last visit between 15/07/2012 to 12/12/2013, were considered as being virally suppressed.

The number of PLHIV was estimated applying the Incidence Method of the ECDCC HIV model, using numerical data from HCDCP and other sources.

The interval from seroconversion (SC) to diagnosis estimated based on a randomized method and while the time from diagnosis to treatment initiation was based on the AAPCS data.

Results

Table. HIV cascade of care in Greece, overall and by risk group

<table>
<thead>
<tr>
<th>Group</th>
<th>All</th>
<th>PLHIV</th>
<th>MSM</th>
<th>PWID</th>
<th>MSW</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLHIV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virally suppressed</td>
<td>78.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retained</td>
<td>52.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever treated</td>
<td>45.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnosed</td>
<td>86.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linked</td>
<td>76.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retained Retained</td>
<td>63.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 1. Cascade of care for total population of PLHIV. The numbers on the arrows between the bars correspond to proportion of the previous stage, while the numbers above the bars correspond to proportions of PLHIV.

Figure 2. Cascade of care for Men who have sex with Men (MSM), people who inject drugs (PWID) and Menwomen who have sex with Men/women (MSW) and for migrants. The total number of migrants living with HIV could not be estimated, thus the first stage of their Care was considered as diagnosed. The numbers on the arrows between the bars correspond to proportion of the previous stage, while the numbers above the bars correspond to proportions of PLHIV for MSM, PWID and MSW and to proportions of diagnosed for migrants.

Conclusions

By the end of 2013, Greece was far from reaching the UNAIDS 90-90-90 goal. Barriers to achieving this goal differed by risk group. Reduced rate of diagnosis is a problem in all groups but particularly among MSW. Suboptimal linkage to care or reduced numbers of people who started treatment were key issues among PWID and migrants. Interestingly, among those who initiated treatment, retention in care was substantially higher than among those who never started treatment. These data provide useful public health information to policymakers. The rapid increase in ART is urgently needed to assess progression and the effects of the introduction of new treatment guidelines.

The recent surveillance report shows that the HIV diagnosis rates are not decreasing (except for PWID), which is an important finding of timely diagnosis, and of engaging and retaining in care for PLHIV. Targeted interventions are necessary focusing on early diagnosis and timely linkage. A high risk group 6-stage Care accompanied with quality indicators provide useful public health information and should be implemented when possible.