Evaluation of HIV Reporting Form in Sana’a City, Yemen, 2016

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Abstract
Yemen has witnessed a significant rise in AIDS-related deaths because of very poor access to antiretroviral treatment and because of the current war situation. This study aimed to assess the attributes of human immunodeficiency virus (HIV) reporting form, including usefulness, simplicity, flexibility, and acceptability, which is used for reporting HIV cases in Sana’a, Yemen. A descriptive cross-sectional study was conducted among 311 physicians from public and private health facilities in Sana’a city. Physicians were interviewed using a structured questionnaire to assess the form’s attributes. The mean score was calculated for each attribute and converted to percentages which were interpreted as very poor, poor, average, good, and excellent. The usefulness overall score was 76%, indicating average usefulness. Of the total participants, 283 (91%) and 304 (97.7%) stated that the form is clear and easy to fill, respectively. More than two-thirds (68.5%) of physicians stated that the form ensures the privacy of the customer’s identity. The simplicity attribute score was 74.5%, indicating average simplicity. The overall flexibility was 69.2%, indicating average flexibility. A total of 175 (56%) physicians indicated that they are completely satisfied with the reporting form. The acceptability score was 75.2%, indicating that the HIV/AIDS reporting form of HIV is average in acceptability. The HIV/AIDS reporting form in Yemen was scored average in usefulness, simplicity, flexibility, and acceptability. Training health workers on using the reporting form would improve the performance of HIV/AIDS reporting. Moreover, the reporting form could be adapted to be integrated with other surveillance such as tuberculosis surveillance.

Keywords
evaluation, HIV, reporting form, Yemen, field epidemiology training program

Introduction
Human immunodeficiency virus (HIV)/AIDS is a leading cause of disease burden and mortality in many countries of the world.¹ The number of people living with HIV/AIDS has been increasing and reached 36.7 million at the end of 2016.² At the same time, HIV/AIDS mortality has been declining from a peak of 1.8 million deaths in 2005 to 1.2 million deaths in 2015.³ In the Middle East and North Africa (MENA) region, 230 000 people were estimated to live with HIV in 2015. In the same year, there were about 21 000 new HIV

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infections and 12,000 AIDS-related deaths. Despite that MENA had a low HIV prevalence, it becomes an area of concern because of the rise in AIDS-related deaths as a result of poor access to antiretroviral treatment (ART), with only 24% of those requiring ART in the region having access—far below the global level of 53%.

Since the detection of the first HIV case in Yemen in 1987, the Ministry of Public Health and Population (MoPHP) established the National AIDS Program (NAP) to monitor and control HIV spread. The major activities of NAP included providing antiretroviral therapy for people living with HIV in 5 governorates, providing voluntary counseling and testing, providing initiated testing and counseling services at 36 sites in several governorates, and prevention of mother-to-child transmission. In 2004, the program followed the Primary Health Care Directorate. The program receives reports every 3 months from different NAP sites. According to the 2011 HIV estimates of NAP, Yemen had a low prevalence of HIV (0.2%). A total of 3,995 HIV cases were reported during the years 1987-2013.

It is evident that a very rigorous, advanced, and consistent surveillance system is needed to control HIV spread. The system needs to go beyond the detection of infected cases to plunge in the inherent root causes and risk behaviors that stimulate the progression of the epidemic. A standardized form is cornerstone to ensure standard data collection. This study aimed to determine the usefulness of the HIV reporting form and assess its performance in Sana’a city according to Centers for Disease Control and Prevention (CDC) guidelines.

Methods

Study Design

A descriptive cross-sectional study was conducted to evaluate the performance of HIV reporting form in Yemen using CDC guidelines for evaluation of the public health surveillance system. 

Data Collection

All public health facilities (8 governmental hospitals, 2 district hospitals, 34 health centers) and all private health facilities in Sana’a City were visited by the investigator as the first step. All stakeholders who are responsible for HIV reporting in their health facilities and who had ever used HIV reporting from were identified and invited to participate in the study.

A structured questionnaire was used to collect the necessary data from various stakeholders from public and private health facilities in Sana’a city. A total of 311 physicians, 153 men (49%) and 158 women (51%), were eligible and were interviewed (response rate = 100%). The questionnaire consisted of a number of items assessing the performance attributes of HIV reporting form using CDC guidelines, including usefulness, simplicity, flexibility, and acceptability. The 5-point Likert-type scale (1 = strongly disagree, 2 = disagree, 3 = not sure, 4 = agree, 5 = strongly agree) was used to rate the questionnaire items. The mean score was calculated for each attribute and converted to percentages to show the score. Based on the percentages, the score was interpreted as very poor (< 40%), poor (40% - < 60%), average (60% - < 80%), good (80% - 90%), and excellent (> 90%). Data were analyzed using Epi info version 7, and data were described using means, frequencies, and proportions.

Results

Participants’ Characteristics

A total of 311 physicians from several public and private health facilities in Sana’a city were interviewed. Of the men, 108 (71%) were general practitioners (GP) and 45 (29%) were specialists. Of the women, 127 (80%) were GPs and 31 (20%) were specialists. The distribution of participants according to health facility is shown in Table 1.

Usefulness

A total of 279 (89.7%) physicians stated that the surveillance data are useful for decision makers and 180 (57.9%) stated that the data help to identify the areas at greater risk (Table 2). The overall usefulness score was 76%, indicating average usefulness.

Simplicity

Of the total participants, 283 (91.0%) and 304 (97.7%) stated that the form is clear and easy to fill, respectively. More than two-thirds (68.5%) of the physicians stated that the form ensures privacy. The majority (85.9%) stated that the form is detailed and 71% stated that the form contains sufficient data. A total of 118 (37.9%) participants reported that filling the form needs a trained specialist, 118 (37.9%) reported that notification form has case definition of the problem, 196 (63.0%) reported that HIV/AIDS case definition is easy to apply, and 255 (82.0%) said that the form contains enough
HIV tests for diagnosis (Table 2). The overall simplicity score was 74.5%, indicating average simplicity.

**Flexibility**

Of the 311 participants, 169 (54.3%) mentioned that case definition is applicable. More than half (55%) stated that it is possible to add other data to the reporting form and 108 (35%) mentioned that the reporting form could be adapted to be integrated with other surveillance such as tuberculosis surveillance (Table 2). The overall flexibility score was 69.2%, indicating average flexibility.

**Acceptability**

Regarding the participants’ willingness to fill the reporting form, 282 (91%) were willing to do that. A total of 175 (56%) physicians indicated that they are completely satisfied with the reporting form (Table 2). The acceptability score was 75.2%, indicating that the HIV/AIDS reporting form of HIV surveillance system acceptability is average.

**Summary of the Performance Attributes**

Table 3 shows the summary of the performance attributes of HIV reporting form according to sex of physicians and type of health facility. The overall performance scores for usefulness, simplicity, flexibility, and acceptability did not differ significantly between physicians according to sex and type of health facility.

**Discussion**

This study showed that the HIV/AIDS reporting form was clear and easy to fill. This finding was reported in another study in Portugal. The simplicity of the reporting form was average. For improving the simplicity of the form, HIV/AIDS case definition should be modified and written in the reporting form.

### Table 2. Usefulness, Simplicity, Flexibility, and Acceptability of Human Immunodeficiency Virus Reporting Form, Yemen 2016.

| Attribute/statement | Strongly disagree/disagree | Not sure | Agree/strongly agree |
|---------------------|----------------------------|----------|---------------------|
| Data form is useful for decision makers | 3 | 29 | 279 |
| The form is identifying areas at greater risk | 9 | 122 | 180 |
| **Simplicity** | | | |
| The form is clear | 17 | 11 | 283 |
| The form is easy to fill | 2 | 5 | 304 |
| The form ensures the privacy of customer’s identity | 31 | 67 | 213 |
| The form is detailed | 9 | 35 | 267 |
| The form contains sufficient data | 19 | 73 | 219 |
| Filling out the form needs a trained specialist | 105 | 88 | 118 |
| Notification form has case definition of the problem | 81 | 112 | 118 |
| **Flexibility** | | | |
| HIV/AIDS case definition is easy to apply | 30 | 85 | 196 |
| HIV tests mentioned in the form are enough | 16 | 40 | 255 |
| In case of having case definition, it is applicable | 16 | 126 | 169 |
| You can add other data in this form | 34 | 107 | 170 |
| The form adapted to integrate with other surveillance such as tuberculosis | 26 | 161 | 124 |
| **Acceptability** | | | |
| You do not mind to fill this form | 7 | 22 | 282 |
| You are completely satisfied with HIV surveillance system form | 17 | 119 | 175 |

### Table 3. Summary of the Performance Attributes of Human Immunodeficiency Virus Reporting Form According to Sex of Physicians and Type of Health Facility.

| Variables | Hospitals, % | Health centers, % | p value |
|-----------|--------------|--------------------|---------|
| **Usefulness** | 76.4 | 75.7 | .955 |
| **Simplicity** | 65.9 | 62.7 | .754 |
| **Flexibility** | 69.6 | 68.0 | .934 |
| **Acceptability** | 75.5 | 73.0 | .816 |

| | Public, % | Private, % | p value |
|-----------------|-----------|------------|---------|
| **Usefulness** | 75.4 | 77.0 | .944 |
| **Simplicity** | 64.6 | 66.0 | .906 |
| **Flexibility** | 68.4 | 70.4 | .902 |
| **Acceptability** | 74.5 | 75.4 | .970 |

| Male, % | Female, % | p value |
|---------|-----------|---------|
| **Usefulness** | 75.8 | 76.2 | .960 |
| **Simplicity** | 75.5 | 73.8 | .830 |
| **Flexibility** | 73.4 | 71.5 | .804 |
| **Acceptability** | 75.4 | 75.1 | .944 |
The form was found to contain detailed and sufficient data. This finding is not in agreement with the findings of another study in Italy. In agreement with the findings of a study in St. Lucia, the form was found to ensure privacy of patients. However, the form does not have a clear case definition. Therefore, the HIV/AIDS case should be made more clear.

Regarding the flexibility of the HIV/AIDS reporting form, HIV case definition was applicable. Adding other necessary data to the reporting form was reported to be possible. It is recommended to adapt the reporting form to be integrated with other surveillance such as tuberculosis surveillance.

The physicians showed willingness to use the reporting form. However, almost half of the participants were completely satisfied with the HIV surveillance system form. This finding might be due to inadequate health workers’ knowledge and experience in dealing with this form. Therefore, training health professionals on the reporting form and increasing their awareness on the value of reporting are expected to improve the acceptability.

One of the main limitations of this study is that not all performance attributes of the surveillance system were assessed, such as completeness, accuracy and reliability of data, and timeliness. In conclusion, the HIV/AIDS reporting form of the HIV surveillance system was scored average in usefulness, simplicity, flexibility, and acceptability. The HIV/AIDS case definition should be modified and written in the reporting form. Training health workers on using the reporting form would improve the performance of HIV/AIDS reporting. Moreover, the reporting form could be adapted to be integrated with other surveillance such as tuberculosis surveillance.

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