



Healthy Volunteer 2020: Comparing Peace Corps Volunteers' health metrics with Healthy People 2020 national objectives☆

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ABSTRACT

Healthy People 2020 (HP2020) provides a set of quantifiable objectives for improving the health and well-being of Americans. This study examines Peace Corps Volunteers' health metrics in comparison with the Leading Health Indicators (LHIs) in order to set baseline measures for Volunteers' health care and align our measurements with Healthy People 2020 standards. Health data from multiple internal Peace Corps datasets were compared with relevant LHIs and analyzed using descriptive statistics. Seventeen (65%) of the 26 LHIs were relevant to Peace Corps Volunteers. Of these, Volunteers' health measures met or were more favorable than the goals of 13 (76%) of the LHIs. There were no data available for 4 (24%) of the LHIs. The entire Volunteer population has full access to primary care, oral health, and reproductive health services. No suicides or homicides were reported among Volunteers during the analyzed time period. Utilizing the LHIs, we have identified high-priority public health issues relevant for the Peace Corps Volunteer population. We discuss the need for quality data to measure and monitor Volunteers' health progress and outcomes over time, and also to standardize our measurements with Healthy People 2020 benchmarks. This framework may foster greater collaboration to engage in health promotion and disease prevention activities driven by evidence-based information, which may, in turn, encourage healthy behavior among Volunteers.

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1. Introduction

In July 1979, the U.S. Surgeon General released the report, "Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention". The report called for a commitment to reduce morbidity and mortality resulting from chronic conditions, infectious diseases, and injuries, and to strive for improved health for all Americans (Department of Health, Education, and Welfare, 1979). It served as a springboard for four subsequent Healthy People campaigns, the most recent being Healthy People 2020 (HP2020).

The purpose of Healthy People is to identify critical priority areas for public health and to encourage collaboration between a wide range of government institutions, academic centers, and community sectors to set goals for measurable health objectives (Koh et al., 2014). In Healthy People 2020, there are 42 topic areas with 1200

measurable objectives, many of which are prevention-oriented and actionable (Department of Health and Human Services, 2010). Of these, a group of 26 high-priority objectives have been selected as Leading Health Indicators (LHIs) (IOM, 2012). Although the focus of Healthy People has been on improving the health and well-being of Americans within U.S. borders, we analyzed health data of Peace Corps Volunteers (including medically cleared applicants whose medical conditions were determined unlikely to result in undue disruption over their 27 months of service) and compared them to HP2020 LHI baseline and target metrics.

Volunteers, who are U.S. citizens, spend 27 months living in low and middle-income countries, often in resource-challenged environments. All health care is provided by the Peace Corps throughout the course of their service, including medical evacuation if the health concern cannot be addressed locally. Applicants are required to complete pre-service screening. In addition to health care during service, Volunteers receive an entry physical, an in-service assessment at 15 months, and a close of service medical exam, as well as education and training on disease prevention. Since President John F. Kennedy established the Peace Corps on March 1, 1961, over 220,000 Volunteers have been invited by 140 host countries around the globe to work on issues including agriculture, education, business development, and health (Peace Corps, 2015).

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2. Methods

Existing data and information on Volunteers' and Trainees' health were extracted from five internal sources. Unless specified, data are from 2014. These included:

1. *Annual Volunteer Survey*: An annual survey of currently serving Volunteers. Tobacco and alcohol binge drinking data were obtained for the Substance abuse LHIs. These were self-reported data. In 2014, a total of 5344 Volunteers participated in the survey for a global response rate of 91.3%.
2. *Death In-Service (DIS) database*: Data for the mental health and injury and violence LHIs were obtained from the DIS database, which tracks causes of death among Volunteers and Trainees.
3. *Medical Applicant Exchange system (MAXx)*: Data were collected on medically-cleared applicants who began their training between January 1, 2013, and December 31, 2013, and met any of the following criteria identified for improvement by the LHIs:
 - i. Hypertension with uncontrolled blood pressure $\geq 140/90$ mm Hg;
 - ii. Body Mass Index (BMI) ≥ 30.0 ;
 - iii. Diagnosis of Type I and Type II Diabetes Mellitus with Hemoglobin A1c (HbA1c) values $>9\%$.

For this analysis, blood pressure, BMI, and HbA1c readings taken at a Volunteer's pre-service physical examination, conducted by their community physician of choice and reimbursed by Peace Corps, were compared to LHIs in the Preventive Services and Obesity LHIs.

4. *Technical Guidelines (TGs)*: TGs on contraception and HIV prevention and treatment, written for Peace Corps Medical Officers (PCMOs) to guide their care of Volunteers, describe the available medical benefits for all Volunteers with respect to reproductive and sexual health, and the protocols for their implementation.
5. *Peace Corps Manual 101, Section 2504 (The Peace Corps Act: Peace Corps Volunteers)*: This policy requires the Peace Corps to provide Volunteers with all necessary and appropriate health care during their service. Policy information from this document covers the access to health services LHIs.

Data collected on the LHIs were analyzed and compared to the U.S. national benchmarks established by HP2020. LHIs which only applied to children and adolescents were excluded as Volunteers must be 18 years of age or older. This study was exempt from IRB due to the fact that subjects' data could not be identified, directly or through identifiers linked to the subjects.

3. Results

Table 1 shows the demographic characteristics of Peace Corps Volunteers in 2013 and 2014. Of the 26 LHIs, 17 focus on adult health. Four were unable to be examined because the data were not collected or available. Of the 13 LHIs that were included in this analysis, 5 are about access to health services, including having health insurance, having a primary care provider, having a dental checkup, sexually active female having access to reproductive health services, including HIV screening. 100% of Volunteers meet those criteria. The remaining 8 LHIs are about health behaviors and those metrics were derived from internal surveys. The 17 LHIs applicable to Peace Corps and results of our analysis are described below and in Table 2.

3.1. Access to health services

All Volunteers (100%) have access to essential medical care and services throughout the course of their service. Peace Corps Medical Officers are contracted primary care providers, usually host country

Table 1

Demographic characteristics of Peace Corps Volunteers, 2013 and 2014.

	2013 ^a	2014 ^b
Total numbers	7209	6818
Age—no. (%) ^c		
20–29	5837 (81)	5586 (82)
30–39	694 (10)	648 (10)
40–49	131 (2)	126 (2)
50–59	173 (2)	158 (2)
60–69	318 (4)	253 (4)
70–80	56 (<1)	47 (<1)
Gender—no. (%)		
Male	2673 (37)	2497 (37)
Female	4536 (63)	4321 (63)
Race/ethnicity—no. (%) ^c		
American Indian or Alaska Native	11 (<1)	10 (<1)
Asian or Pacific Islander	329 (5)	307 (5)
Black or African-American	398 (6)	441 (6)
Hispanic or Latino	622 (9)	661 (10)
Two or more	242 (3)	237 (3)
White	5122 (71)	4850 (71)
Not specified	485 (7)	312 (5)

^a Peace Corps. Statistical report on all Peace Corps Volunteers and Trainees serving on September 30, 2013.

^b Peace Corps. FY 2014 Peace Corps Volunteers and Trainees On-Board Strength Statistics.

^c Percentages do not equal 100 due to rounding.

nationals, whole sole responsibility is to care for Peace Corps Volunteers. In this topic area, Peace Corps met and exceeded HP2020's baseline measures for persons with health insurance coverage and access to primary care; 83.2% and 76.3%, respectively.

3.2. Clinical preventive services

There were no data available to measure the proportion of Volunteers who had received colorectal cancer screening based on the most recent guidelines for the US population. Currently, Peace Corps does not routinely screen Volunteers for colorectal cancer during service.

Among 3344 Volunteers who began in-service training during 2013, 78 had diagnosed hypertension, and 66 of those (84.6%) had well-controlled blood pressure, meeting and exceeding HP2020's target goal of 61.2% for adults, while 12 (15.4%) of the Volunteers had uncontrolled high blood pressure.

Fourteen Volunteers (<1%) had Type I or Type II Diabetes Mellitus, and all 14 had HbA1c values less than or equal to 9%, exceeding HP2020's target goal of 16.1% for persons with diabetes with a HbA1c value $>9\%$.

3.3. Environmental quality

Although Peace Corps serves in a handful of countries with reliable AQI measurements (e.g., China, Mongolia), the majority of Peace Corps countries do not track AQI data in the rural areas where Volunteers frequently serve.

3.4. Injury and violence

Compared to the US population target goal of 53.7 deaths per 100,000 population, the rate of Peace Corps unintentional injury deaths was negligible (no injury deaths per 100,000 VT years in 2014). There were no homicide deaths among Volunteers, exceeding HP2020's target of 5.5 homicides per 100,000 population.

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