

## Engaging Student Health Organizations in Reducing Health Disparities in Underserved Communities through Volunteerism: Developing a Student Health Corps

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*Abstract:* One underutilized method for reducing health disparities and training culturally competent health care workers is the engagement of undergraduate student health organizations in conducting health screenings, promotion, and health education outreach activities in underserved racial/ethnic communities. We conducted a needs assessment of 14 predominantly racial/ethnic minority undergraduate student-run health organizations. The 14 organizations annually served approximately 12,425 people (67% Hispanic, 25% African American, 6.33% Asian Pacific Islander), predominantly at health fairs within Los Angeles County (averaging 138 attendees). Student organizations provided screenings on general health conditions and diseases, with less emphasis on behavioral risk factors (e.g., drinking, smoking). Organizations indicated a need for increased and affordable trainings in preventive health screenings and help in understanding target populations' needs. Universities are in an excellent position to train, supervise, and organize volunteer health corps in order to engage students in reducing health disparities and to train culturally competent health care providers.

*Key words:* health disparities, civic engagement, health fairs, medical education, screenings, racial/ethnic minorities, prevention, volunteerism, health corps.

The 2000 U.S. Census indicates that underrepresented minorities (URMs) (African Americans, Hispanics, and Native Americans/Alaskan Indians) and Asian/Pacific Islanders account for nearly a third of the U.S. population, with the projection

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that these racial/ethnic populations will constitute the majority in the United States by 2050.<sup>1</sup> Despite improvement in overall life expectancy in the United States, racial/ethnic minorities have not shown the same progress and continue to have poorer health outcomes from preventive and treatable conditions such as cancer, cardiovascular disease, diabetes, HIV/AIDS, infant mortality, and asthma compared with Whites.<sup>2-5</sup> As the U.S. population grows more racially and ethnically diverse, so grows the need to address health disparities that account for poorer health outcomes and premature deaths and disease among racial/ethnic minorities.<sup>6-9</sup> Furthermore, the current U.S. health care workforce lacks the growing diversity of the overall population: URM's continue to be underrepresented in the health profession fields of medicine (6%),<sup>10</sup> nursing (6.7%),<sup>11</sup> dentistry (7%),<sup>12</sup> and pharmacy (12%).<sup>13</sup> This lack of diversity is important as research indicates that underrepresented minorities are more likely to practice and provide culturally competent care in underserved, racial/ethnic minority communities.<sup>14-16</sup> Some studies also show that minorities tend to seek care from physicians who share their ethnicity and that these patients rate satisfaction, quality of overall care, and health outcomes more highly than do those receiving care from physicians of other ethnicities.<sup>17-19</sup>

As the population of racial/ethnic minority groups increases, so too does the need for health care providers who speak the languages of the group served, whose ethnicities match the preferences of the group being served, and who are willing to practice in underserved communities. One population that can contribute to increasing a diverse health care workforce is racial/ethnic minority undergraduate students majoring in health. When these students engage in community-based health activities in multi-cultural or poor urban settings, they have been found to rate these experiences positively and to be more inclined to develop their clinical practices with these underserved populations.<sup>20-22</sup>

Despite these findings, little research has explored ways to leverage the volunteer efforts of undergraduate college students as a strategy to eliminate health disparities, while also increasing the likelihood that these students will pursue clinical practice and/or research in underserved racial/ethnic minority communities.<sup>23,24</sup> In recent years there has been a movement, especially in public universities, to engage undergraduate students in service learning and volunteer efforts within communities.<sup>25-28</sup> In the area of reducing health disparities, one underutilized source of volunteers are undergraduate volunteer-run student health organizations that conduct health outreach, education, and preventive health screenings in underserved communities. Although not a substitute for affordable comprehensive health care, health fairs can play a beneficial role in providing preventative services to medically underserved populations who face an array of financial, linguistic, and cultural barriers to receiving such services.<sup>29-33</sup>

The goal of this study was to examine preventive health-screening activities conducted by volunteer undergraduate students in health organizations and determine the type and extent of their outreach health services to underserved racial/ethnic communities. We also assessed the training of these volunteers in order to examine the adequacy of the services provided and determine if there are ways to improve their volunteer efforts toward reducing health disparities in racial/ethnic minority and underserved communities.

## Methods

Undergraduate volunteer student health organizations at a major public land grant university in Southern California involved in conducting health outreach in racial/ethnic minority communities were identified and their officers asked to participate in a needs assessment about the work of their organizations. Thirteen of the groups were volunteer health groups targeting specific underserved racial/ethnic minorities; the remaining group (a chapter of SHOUT [Student Health OUTreach]) enrolled underserved families and children in federally funded health insurance programs. This group typically participates in the health fairs organized by the other 13 predominantly minority student health organizations.

A needs assessment was developed with the help of the project director, a third-year medical student, the faculty principal investigator, and several undergraduate volunteer students, many of whom served as health fair directors for the various student health organizations. The needs assessment included questions on the membership of the student health organization, characteristics of the populations they served, the type of preventive screenings provided, frequency of their outreach efforts, identification and evaluation of the training they received, and their views on what additional resources would be helpful to them in expanding their efforts and providing culturally competent screening and health education in racial/ethnic minority communities. The needs assessment was pre-tested for length, clarity, and coverage of issues important to the student-run organizations. It was decided that the outgoing presidents and any officers of the student organizations were the best candidates for completing the surveys due to their years of experience in the organizations, as well as their management and oversight of their group's activities and its membership.

**Data collection procedures.** Each student health organization president was contacted by either the project director or an undergraduate student member of our health fair team. They were given the needs assessment to complete with a promise that a \$5.00 Starbucks gift card would be given to them and to each member of their organization who assisted them in completing the surveys. Reminders were sent to each of the student group presidents about completing the needs assessment. Finally, when student health presidents indicated that the survey was completed, our health fair project director or an undergraduate health fair team member (all were also health organization participants) met with them and reviewed the survey to ensure that all questions relevant to the activities of the organization were completed. There was a 100% completion rate as all 14 of the student health organizations thoroughly completed the needs assessment. (Some questions were not answered by some organizations because they were not relevant to the activities of those particular organizations.)

**Data analysis and data synthesis.** Questions with predetermined responses were tabulated. Undergraduate health volunteers entered the data using EXCEL and analyzed it with Stata 10 (StataCorp. 2007. *Stata Statistical Software: Release 10*. College Station, TX: StataCorp LP). Open-ended data were coded and viewed by two additional raters for agreement on the coding categories. Inter-rater reliability among the three coders was .97.

## Results

**Volunteer undergraduate organization student-run health fairs.** Undergraduate health organizations vary in size of active membership (defined as students who participate in community health outreach activities), with the smallest group having 12 members (Black Pre Health) to the largest having over 200 members (Chicanos for Community Medicine). Most of the groups ( $n=9/14$ ) conducted one to two health fairs annually, with each health fair taking, on average, three months to plan. For each health fair, on average, 14 students per organization volunteered to work at a particular event with assistance from approximately 13 students from other student-run health groups. The number of volunteers needed to plan and conduct a health fair also varied with the size of the fair. Student volunteers ranged from 4 to 38 members from the primary health organization in charge of organizing the fair, to an additional 0 to 55 students from other student groups.

**Services provided.** The majority of the respondents ( $n=9/14$ ) indicated that their group offered various types of preventive screenings at health fairs (data not shown). Health fair screenings/exams focused on general health conditions (blood pressure, cholesterol, and anemia) and risk factors for diabetes, obesity, and cardiovascular diseases, but few to no screenings were offered on a regular basis for other chronic or debilitating diseases prevalent in racial/ethnic communities (e.g., breast, cervical, or prostate cancer; HIV/AIDS and other sexually transmitted infections [STIs]; asthma) or behavioral health conditions (e.g., alcohol, drugs, tobacco, physical fitness/activity, domestic violence, seat belt or bicycle helmet compliance). Moreover, brochures were distributed that contained information on general health conditions, such as high blood pressure, cholesterol, and anemia. At least five of the student health organizations indicated that their group provided glucose and blood pressure checks performed either by students or professional medical volunteers (physicians or nurses). Two organizations indicated they also provided anemia and cholesterol tests in addition to the aforementioned screenings. Dental and optometric services were sometimes provided at the health fairs by two volunteer student groups with the assistance of dental students, undergraduate optometry students, and a volunteer optometrist. The following professionals are ranked in the order of being most often present to least often present at the student health fairs: health educators, dental students, physicians, medical students, and dentists.

On average, a student volunteer spent 14.6 minutes speaking with participants after their screenings to discuss their results. Respondents indicated they provided educational presentations or consultations on various health-related topics such as organ donation, insurance enrollment, monitoring of chronic health conditions, weight management, fitness, nutrition, contraception use, stress reduction, domestic violence, substance abuse, child health, HIV/AIDS, and STIs. Free or low-cost primary care clinic referrals were provided by all seven student organizations for whom this question was relevant (see Table 1). Observations at various health fairs indicated that actual incidents of counseling and health education for behavioral topics were brief. Students focused more on test results and their relationship to changing behaviors to lower diabetes and cardiovascular disease (CVD) levels.

**Table 1.**

**TYPES OF REFERRALS PROVIDED BY STUDENT ORGANIZATIONS AT HEALTH OUTREACH ACTIVITIES OR HEALTH FAIRS**

Types of referrals provided	# of organizations' responses/ organizations responded (%)
Free or low cost primary care clinics ( <i>n</i> =7)	7/7 (100%)
Free mental health services ( <i>n</i> =6)	1/6 (17%)
Dental clinics ( <i>n</i> =8)	4/8 (50%)
Optometry services ( <i>n</i> =6)	2/6 (33%)
Nutrition services ( <i>n</i> =7)	2/7 (29%)
Substance abuse programs ( <i>n</i> =6)	0/6 (0%)
Smoking cessation programs ( <i>n</i> =6)	1/6 (17%)
Domestic violence programs ( <i>n</i> =5)	1/5 (20%)
Legal service agencies ( <i>n</i> =7)	0/7 (0%)
Homeless shelters ( <i>n</i> =7)	1/7 (14%)
Health insurance programs ( <i>n</i> =6)	1/6 (17%)
Health care providers who speak their languages ( <i>n</i> =7)	3/7 (43%)
Social service agencies who service people who speak their languages ( <i>n</i> =6)	2/6 (33%)
Other types of referrals provided ( <i>n</i> =5)	0/5 (0%)

**Populations served.** The undergraduate organizations provided services to a diverse population reflective of the racial/ethnic diversity of Los Angeles County. Health fairs were conducted in seven of the eight Los Angeles County Service Planning Areas (SPAs, health districts) which comprise more than 9 million people from a wide array of racial, ethnic, and immigrant subpopulations.<sup>34</sup> Most of the student-run health fairs were held in SPA 3 (San Gabriel), which has over 1.7 million residents, the majority of whom belong to racial/ethnic minority groups (43.6% Hispanic, 22.7% Asian Pacific Islander, and 4.7% African American).<sup>35</sup> The second most frequently served area (SPA 5, West Los Angeles) comprises neighborhoods surrounding the public land grant institution that the students attended. This area had 650,000 residents with a racial/ethnic minority distribution of 18% Hispanic, 12% Asian Pacific Islander, and 7% African American.<sup>36</sup>

The total number of health fair attendees served annually was estimated by the 14 groups as 12,425 people (67% Hispanic, 25% African American, and 6.33% Asian Pacific Islander; see Table 2). The majority of student health organizations (*n*=12/14) indicated that their health fairs served a diverse set of groups including Chinese, Southeast Asian Indians, Pacific Islanders, South Asians, African Americans/Afro Caribbeans, Latinos, and American Indians. Eleven student health organizations indicated that in addition to the groups above, they also provided services to Whites and Middle Easterners (e.g.,

**Table 2.**

**RACIAL/ETHNIC POPULATIONS TYPICALLY SERVED BY STUDENT HEALTH ORGANIZATIONS AT HEALTH OUTREACH ACTIVITIES OR HEALTH FAIRS**

<b>Racial/ethnic population</b>	<b># of student organizations serving population</b>	<b>Among those student organizations serving the population, mean percentage of individuals served who belong to that population</b>
		<b>Mean (<i>n</i> varies)</b>
African	6	7%
Asian	6	2.5%
South East Asian	5	3%
Pacific Islander	5	0%
Indian/South Asian	6	0.83%
African-American	7	25%
Latino	7	67%
Caucasian	5	2.5%
American Indian/Alaskan Native	5	0%
South West Asian/Middle Eastern	6	0.83%

Armenians, Persians, Arabs), ten groups to Africans, and one group indicated provision of services to Cambodians, Laotians, Thai, and Vietnamese.

Approximately 138 people, on average, attended an organization's health fair/health outreach activity, with a range of 30 to 310 per event ( $n=9/14$ ). The average number of people served in a year by members of each organization was 1,035, with a range from 5 to 5,000. Most of the student groups focused their efforts on particular racial/ethnic populations or communities, such as Hispanics, Asians, Pacific Islanders, or African Americans. The two most commonly spoken languages by health fair attendees were English and Spanish. Other languages spoken by attendees included Amharic (by the Ethiopians), Thai, Mandarin, Cantonese, Arabic, Armenian, and Hindi. Not every student health organization was able to provide the subgroup designations of their community participants. Furthermore, attendees who spoke, for example, Spanish could have been Mexican, Afro Caribbean, Belizean, or from another Spanish-speaking country of Central or South America.

**Assessment of underserved community health needs.** We assessed student organizations' methods of determining health needs of the communities they selected for outreach. Over half of the groups ( $n=6/11$ ) searched Internet sites for information, but fewer ( $n=5/13$ ) used online fact sheets or statistics supplied by the local county health department. Most groups ( $n=11/12$ ) attempted to address the health needs of their target populations using personal experience and knowledge from the previous year's

organization officers. When asked whether research articles and Los Angeles County Health Department SPA statistics on racial/ethnic demographics and prevalence of diseases would be useful for increasing the effectiveness of health screenings, the majority of the organizations ( $n=9/12$ ) indicated they would find it very useful. The majority of the organizations ( $n=10/11$ ) indicated that their active members needed to learn more about the health status and/or health issues of their target population.

The research team reviewed literature for health-related activities that should be assessed in the surveys.<sup>37-54</sup> Based on their health fair experiences, the organization officers identified several health needs of attendees. These included health care services such as screening for hypertension or diabetes, immunizations, vaccinations, and access to dental care. No organization respondent mentioned screening for non-chronic illnesses, such as bacterial or viral infections, unintentional injuries or child safety (e.g., seat belt and helmet compliance), or skin diseases (sun screen protection, skin self-exams). Information about social services (concerning such things as health insurance, domestic violence, STIs and safer sex, weight management, nutrition, and physical activity) was also identified as needed ( $n=6/14$ ).

**Trainings.** At the start of each academic year, student volunteer organizations organized training sessions so that their members could obtain the technical skills needed to provide preventive screenings at the health fairs. Ten of the groups surveyed indicated that they provided members with specific training activities. Training sessions were conducted by the group's leadership board or health professionals, such as emergency medical technicians, registered nurses, physicians, or Red Cross or Planned Parenthood representatives, and involved presentations as well as a distribution of study materials. Some organizations required their volunteers to complete written and/or practical exams to demonstrate proficiency. One organization utilized an academic course as part of the training, for which students conducted screenings at health fairs. In this case, proficiency was assessed via exams, course grade, and practical evaluations.

Despite efforts to achieve screening competency, only a few of the student organization respondents ( $n=3/7$ ) felt their trainer was extremely knowledgeable about the health condition that their organizations were being trained to detect. Of nine student organization officers, only two believed their sessions were effective in training volunteers to discuss health-related behavioral change issues with health fair attendees. Only half of the groups that engaged in training ( $n=5/10$ ) had methods in place to maintain the skills of their volunteers, and fewer ( $n=3/10$ ) performed ongoing competency evaluations of their student health fair workers. Officers from several groups mentioned that while training sessions were helpful, much of the experience acquired by student volunteers came from on-site experiences. In addition, nine of ten groups indicated a need for the development of a health fair assessment tool that would enable them to better evaluate the efficacy of their fairs (through collecting and analyzing data on all aspects of their events). A majority of the student organization respondents ( $n=10/10$ ) stated that they would like to learn about methods for evaluating their health fairs or health outreach activities.

**Barriers/limitations.** Student health organization respondents indicated there were barriers that hindered the planning and implementation of health fairs. The predominant complaint was inadequate funding for supplies (e.g., blood pressure

cuffs, glucose testing machines), which limited the number of events they were able to conduct. Another cost barrier was the expense of paying trainers (i.e., Red Cross). Another problem was the linguistic barrier that sometimes arose between volunteers and health fair attendees due to insufficient numbers of Spanish-speaking staff. This made information dissemination difficult and limited the efficacy of service delivery. The last difficulty identified was limited knowledge of the health needs of the community in which the fair was being hosted, coupled with insufficient publicity to ensure large-scale community participation.

## Discussion

Findings from this study strongly support that the volunteer efforts of student health organizations that provide health screenings and health education programs in underserved areas,<sup>55-58</sup> as well as other community health activities,<sup>23,24,59</sup> can play a significant role in reducing and eliminating health disparities. In this study, we found that student health organizations, acting in a volunteer capacity, provided much needed health services to thousands of racial/ethnic minority group members (Hispanics, African Americans, and Asian Pacific Islanders). The undergraduate volunteer student health organizations in our study were predominantly racial/ethnic minority organizations that forged relationships with minority populations in the community that continued from year to year through the provision of health fairs. These volunteer activities formed an avenue for delivering preventive screenings to people who traditionally face social, economic, and linguistic barriers to such services.<sup>31,32</sup> Many underserved communities and communities with a large number of uninsured community residents have come to depend on volunteer-provided health services to monitor their blood pressure, conduct mammograms, or provide a number of other services due to affordability issues.<sup>30</sup> The area where most of the student organization health fairs occurred (SPA 3) had a population that was more than 37% foreign-born and more than 57% foreign-language speaking;<sup>34</sup> and a third of the Latino population in SPA 5 (the second most served area) met federal poverty guidelines.<sup>35</sup>

While our results indicate that preventive screening needs of these populations can be addressed in part through volunteer undergraduate student activities, results also indicate that these services could be improved by consistent, affordable training coupled with accurate data on the health needs and conditions of the populations served. In addition, the efforts of the students to serve large numbers of individuals were limited due to a lack of funding to purchase supplies essential to screening efforts. If student volunteers are to extend preventive health services, help identify much needed health care interventions, and enroll the uninsured in health care coverage, attention must be paid to identification of sources of financial resources for supplies as well as training.

Cardiovascular disease and diabetes in African Americans, Hispanics, and Asians/Pacific Islanders are among the leading causes of death and disability in the SPAs served by the student volunteers.<sup>60</sup> The student health fairs provided services to reduce or eliminate these health disparities through blood pressure and glucometer checks, as well as health promotion education for nutrition, fitness, and weight management. The student organizations, in general, did not provide detailed assessments or health



information on behavioral risk factors or injury prevention. Training to increase their activities regarding alcohol, drug, and tobacco use, as well as injury prevention (e.g., seat belt use, helmet use, bicycle safety), could be especially useful, as these are also significant contributors to health disparities in racial/ethnic populations.<sup>40</sup> The presence of a SHOUT chapter, a student organization with a mission to decrease disparities in health insurance was an excellent vehicle for ensuring that community participants could be enrolled on-site in federal, state, and county programs designed to increase their access to health services. Access to health services and health care are integral factors in reducing and eliminating health disparities. In 2002–2003 in Los Angeles County, six out of 10 low-income, uninsured children had difficulty accessing necessary medical care.<sup>61</sup> Volunteer student health organizations' efforts to enroll underserved community members who qualify into state and federal health coverage programs can be useful in closing the gap in access to health services.

This study also suggests that undergraduate student volunteer health organizations need assistance in developing: (a) more effective training tools to improve volunteers' proficiency in conducting screenings, (b) language skills to communicate findings to all participants, and (c) understanding of the health status and needs of their target population as derived from credible resources. This will help volunteers to enable their health fair attendees to use screening data to change their health habits and health status, thereby contributing to the reduction of health disparities in underserved communities.<sup>62</sup> Students also need assistance in developing evaluation measures to assess proficiency of volunteers, effects of screening and health education on health behavior change, patient satisfaction, and accessibility of services to the community.<sup>63</sup> Almost all organizations indicated that their members would benefit from the development of health fair assessment tools (such as surveys and other data collection methods). The DHHS Office of Minority Health has issued a similar call for better tools for community health assessments that can be used by community organizations to monitor and identify health disparities at the community level.<sup>64,65</sup> As one remedy, we developed an online health fair guide ([www.minorityhealthdisparities.org](http://www.minorityhealthdisparities.org)) that provides this information as well as tools to conduct behavioral health education and health promotion (e.g., helmet safety, infant car seat usage, violence prevention), health promotion materials in several languages, and health fair activities for children.

Another way of ensuring adequate and up-to-date screening and health promotion competencies of undergraduate student health volunteers is by means of (credit or non-credit) academic courses offering university-based community service learning experiences. Studies have shown that health science departments such as schools of medicine and nursing have the capability and expertise to offer undergraduates knowledge of health education and health promotion, as well as skill-based trainings, under the guidance of faculty, staff, health educators, or clinical providers.<sup>55,66,67</sup>

Finally, a national, state, or local initiative might take the form of a volunteer health corps of undergraduate students. Commissioned health corps have existed in our nation's history to respond to large-scale public health crises such as national disasters, disease outbreaks, and terrorist attacks.<sup>68</sup> The continuing gaps evident in health disparities combined with the loss of community-based hospitals and clinics requires a large-scale public health solution.<sup>69–71</sup> Student health corps on college and university

campuses, which can be organized through campus health-affairs or student-affairs offices or through schools of nursing and medicine, can assist local and national efforts to reduce health disparities among the medically underserved through federal leadership or university-based civic engagement.\* While such corps can help provide needed health screening, health education, and health promotion services in underserved racial/ethnic and poor communities, a corps of this nature can also serve to increase the number of individuals who will commit their clinical, research, and policy careers in health to addressing health disparities. Such a health corps could not only engage students from health majors but also non-health disciplines. In particular, students who major in a foreign language are much needed to help serve as translators during health outreach group activities in monolingual communities. An additional group of students who would be helpful are math and statistics majors who might help conduct evaluations, analyze data, and predict utilization of services to better anticipate staffing needs and supplies for health fair efforts.

Engaging minority students, especially URM, in service to underserved communities where health disparities persist is a vital step in developing a culturally competent and diverse health workforce. A study conducted by Blue et al. demonstrated that medical students' community service involvement correlated with the number of different types of organizations they served and the length of their involvement prior to entering medical school.<sup>72</sup> In addition, studies have shown that students report a strong preference for working in underserved minority communities after they graduate based on personal volunteer or work experience within the community.<sup>20-22</sup> Further research is needed to explore ways to create or enhance health-related community service experiences of undergraduates as a way of increasing their likelihood of pursuing clinical practice and or research careers in underserved communities, and thereby help reduce health disparities among ethnic groups. Colleges and universities would be ideal partners in state or federal efforts to organize health corps to respond to the crisis of reducing health disparities and providing the personnel for a diverse health care workforce. Important to these efforts are ensuring that volunteers, particularly undergraduate volunteers, are provided the necessary training and supervision by appropriate personnel to engage the task of health screenings. However, in some communities where liability concerns result in insurance costs beyond what many community- and student-based organizations can afford, "Good Samaritan" laws that protect against the threat of lawsuits are also needed as part of a policy overhaul. If we are to tap into the rich volunteerism of undergraduate students within the context of a civic engagement model, policies requiring adequate instruction and supervision by health professionals along with liability protections will need to be addressed. It is important that the medically underserved receive high-quality, evidenced-based screening services, including through community outreach efforts such as health fairs, if we are to be successful at reducing, and ultimately eliminating, health disparities.

As U.S. President Barack Obama calls on the nation to help overcome difficulties

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\* Mays VM, Ly L. Report on the outreach and academic preparation of undergraduate student health organization of the University of California and comparison public universities. In preparation.

faced in the United States to address adequate health care for all, instituting a student health corps structured much like our Public Health Services Corps in partnership with universities and colleges civic engagement activities could be a significant factor in the reduction and/or elimination of health disparities. This fits well with President's proposed \$4,000 tuition credit for 100 hours of service.<sup>73</sup> Not only would the development of a health corps bring preventive services in underserved areas but it could have the effect of increasing the numbers of individuals who eventually as health professionals would deliver research in these underserved areas. Results of our work indicate that students are eager to be trained and to render services in underserved racial/ethnic minority communities.

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## Notes

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