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## **Literature on Making the Case for Health Workforce Pipeline Programs**

California is facing major health workforce shortages throughout the state, which are exacerbated by the lack of diversity in health providers. Recruitment efforts are underway to incentivize Californians, especially from minority groups to enter the health workforce. Researchers site pipeline programs as a good strategy to recruit diverse populations. This document provides a list of the literature that documents the case for health workforce pipeline programs particularly attracting diverse populations.

### **Recruitment and Retention of a Quality Health Workforce in Rural Areas: A Series of Policy Papers on the Rural Health Careers Pipeline Number 7 - Rural Health Careers Pipeline: Kindergarten to 12th Grade Education**

*National Rural Health Association, February 2006*

Rural healthcare facilities experience chronic shortages of virtually every type of healthcare provider – physicians, nurses, and allied health personnel. Health care professionals most likely to practice in rural areas include individuals who come from a rural background (i.e., who were raised, attended primary and secondary school, and/or attended college in a rural community). This implies that to effectively address the chronic shortages of health care providers in rural communities, the United States must engage in practices and policy setting that results in more rural born students being trained in health professions.

Given the aforementioned facts and the persistent shortage of health care providers at all levels in rural communities, it is critical to maximize the number of kindergarten to 12th grade level youth in these communities that are informed about, choose to prepare for, and are successful in entering health professions training programs. To accomplish this goal, rural and frontier communities must mount and sustain effective programs to recruit young people to the health careers pipeline.

This report provides an overview of different factors that K-12 grade level pipeline efforts depend on for success including: educational and informational factors; attitudinal and environmental factors; financial factors; and programmatic factors. Furthermore, the report provides recommendations to overcome some of these factors and implement successful pipeline programs.

Full report can be located through the following link:

<http://www.hwic.org/resources/details.php?id=222&url=http%3A%2F%2Fwww.hwic.org%2Ftopics%2Fresources.php%3Fid%3D37%26narrow%3Dxb17%26sort%3Ddate>

## **Promoting Minority Access to Health Careers through Health Profession–Public School Partnerships: A Review of the Literature**

*Patterson, Davis G.; Carline, Jan D. Academic Medicine: June 2006 - Volume 81 - Issue 6 - pp. S5-S10*

Partnerships between health profession schools and public schools provide a framework for developing comprehensive, creative solutions to the problem of minority underrepresentation in health careers. This article examines the functioning of partner relationships, focusing on elements of the social context that determine success or failure, and stages of partnership development. Strategies to improve minority student achievement are reviewed, including specific types of programmatic interventions and best practices. Partnerships need to take a sustained multipronged approach, providing intensive interventions that target students, teachers, and curricula at appropriate educational stages.

Full report can be located through the following link:

[http://journals.lww.com/academicmedicine/Fulltext/2006/06001/Promoting\\_Minority\\_Access\\_to\\_Health\\_Careers.3.aspx](http://journals.lww.com/academicmedicine/Fulltext/2006/06001/Promoting_Minority_Access_to_Health_Careers.3.aspx)

## **The Connecting the Dots Initiative- A Comprehensive Approach to Increase Health Professions Workforce Diversity in California: Increasing the Diversity of the Health Professions K-12 Networks of Support.**

*The Public Health Institute and UC Berkeley School of Public Health, January 2008*

As the population in California continues to become a more linguistically and culturally diverse one, the need for health professionals who reflect that diversity is ever more pressing. Minority health professionals are more likely to work in under-served communities, can facilitate better client-provider communication and are more likely to advocate for the interests of minority populations. In order to increase the diversity of the applicant pool, researchers and stakeholders have argued, greater investment in the K-12 educational pipeline must be made.

While studies have examined the characteristics, qualities and effectiveness of individual programs working towards the goals of increasing the diversity of the health professions across the educational pipeline, little research has been conducted on the ways that communities or regions are working across programs and institutions to create coordinated K-12 networks of support that support minority achievement. The purpose of this study is to develop a model for communities to work across programs and sectors to create networks of support at the K-12 that increase the academic achievement and educational attainment of under-represented youth. The model was developed through a review of existing literature on partnerships, minority achievement and K-12 efforts to increase the diversity of the health professions, as well as interviews with experts in the field of health care workforce diversity and K-12 education. This model was used to examine the ways in which communities are working across sectors and phases of the pipeline to implement local and regional efforts.

Full report can be located through the following link:

[http://www1.calendow.org/uploadedFiles/Publications/By\\_Topic/Culturally\\_Compentent\\_Health\\_Systems/Workforce\\_Diversity/Increasing%20th%20Diversity%20of%20the%20Health%20Professions%20k-12%20Networks%20of%20Support.pdf](http://www1.calendow.org/uploadedFiles/Publications/By_Topic/Culturally_Compentent_Health_Systems/Workforce_Diversity/Increasing%20th%20Diversity%20of%20the%20Health%20Professions%20k-12%20Networks%20of%20Support.pdf)

## **Profiles in Leadership: A Review of Exemplary Practices to Increase Health Professions Workforce Diversity in California.**

*The Public Health Institute and the UC Berkeley School of Public Health, April 2008*

This report outlines exemplary practice profiles that provide insights into a wide array of innovations at all stages of the health professions pipeline, each contributing in some way to the goal of increasing health professions workforce diversity. Section two of the study provides 17 best practice examples to expanding the pipeline. For each example the report outlines the approaches, impacts, and lessons for consideration by others with the commitment to make a difference. The primary purpose of this study is to inspire and to provide insights for others who seek to undertake similar initiatives at the institutional, local, or regional level. In this way, these individuals and their partners gain the advantage of learning from their predecessors, and in so doing further advance the field. It is also intended to provide foundations and other funders with information that will guide their future investments.

Full report can be located through the following link:

[http://www1.calendow.org/uploadedFiles/Publications/By\\_Topic/Culturally\\_Compentent\\_Health\\_Systems/Workforce\\_Diversity/Profiles%20in%20Leadership%20A%20Review%20of%20Exemplary%20Practices%20to%20Increase%20Health%20Professions%20Workforce%20Diversity%20in%20California.pdf](http://www1.calendow.org/uploadedFiles/Publications/By_Topic/Culturally_Compentent_Health_Systems/Workforce_Diversity/Profiles%20in%20Leadership%20A%20Review%20of%20Exemplary%20Practices%20to%20Increase%20Health%20Professions%20Workforce%20Diversity%20in%20California.pdf)

## **Pipeline Programs to Improve Racial and Ethnic Diversity in the Health Professions.**

*U.S. Department of Health and Human Services, April 2009.*

This report, performed under contract to the U.S. Department of Health and Human Services (HHS), Health Resources and Services Administration and HHS' Office of Public Health and Science, Office of Minority Health examines programs focused on intervening in the educational pipeline to enhance opportunities for racial/ethnic minority and disadvantaged students to enter careers in the health professions and health sciences. The report focuses on what is known about these programs, providing a critical review of research on pipeline programs and highlighting key findings and recommendations.

Full report can be located through the following link:

<http://bhpr.hrsa.gov/healthworkforce/reports/pipelineprogdiversity.pdf>

## **Career Programs for California's Pipeline of Secondary Students: An Opportunity to Address the State's Workforce Shortages**

*Susan Chapman, Sharon Christian. UCSF Center for the Health Professions, July 2009*

This study explored the types of health career programs accessible to secondary students in California. It examined current data on the availability, funding, and impact of the programs to inform stakeholders of opportunities to target this pipeline for the purpose of alleviating persistent health workforce shortages. The study concludes that programs continue to hold great promise, but also face challenges. In particular, to effectively increase California's health workforce supply through high school health career programs, more attention must be placed on clarifying CTE objectives at the programmatic level, tracking progress towards those objectives, and coordinating efforts to replicate successful models.

Full report can be located through the following link:

[http://futurehealth.ucsf.edu/Content/8877/2009-07\\_Career\\_Programs\\_for\\_Californias\\_Pipeline\\_of\\_Secondary\\_Students.pdf](http://futurehealth.ucsf.edu/Content/8877/2009-07_Career_Programs_for_Californias_Pipeline_of_Secondary_Students.pdf)

## **Pipeline Programs in the Health Professions: Part 1: Preserving Diversity and Reducing Health Disparities.**

*Pamela R. Jones, Phyllis A. Nsiah-Kumi, Rubens J. Pamies, Sonya G. Smith. Journal of the National Medical Association. Vol. 101, NO. 9, September 2009*

Pipeline, pre-professional, and enrichment programs aimed at diversifying the health professions are crucial to the economic well-being, improved postsecondary academic readiness, and go to the heart of our democratic values as a nation. The article provides a thematic review of the pipeline program literature while focusing on key components of successful diversity pipeline programs and examples. A discussion of noteworthy enrichment and pipeline programs at the University of Nebraska Medical Center, aimed at increasing the number of URM students in the health professions, is also included. Furthermore, strategies for developing and improving diversity pipeline programs are presented.

This article also initially provides an overview of the changing demographics, the “opportunity gap,” and types of disparities that exist among racial and ethnic minorities in the United States; the status of diversity in the medical profession and health care workforce; and trends in minority student US medical school enrollment.

Full report can be located through the following link:

[http://s3.amazonaws.com/zanran\\_storage/www.nmanet.org/ContentPages/26670546.pdf](http://s3.amazonaws.com/zanran_storage/www.nmanet.org/ContentPages/26670546.pdf)

## **Building a 21st Century Health Care Workforce in a Diverse Rural State: A Funder’s Perspective & Evaluation Framework for Innovation & Impact of Health Career Pipeline Programs**

*Terry Schleder, Con Alma Health Foundation, February 2010*

Recruitment and retention of rural health care providers remains challenging especially in states like New Mexico where the majority of the state lives rurally, but 60% of the health care workforce practices in our urban areas. Among health care practitioners, a number of factors that may lead to rural practice include: a rural background, preference for smaller sized communities, loan forgiveness and rural training programs appear to support retention and recruitment.

A growing research base has identified some promising health career pipeline programs for minority youth and young adult pre-professionals, and many of these principles and concepts are at-work today in New Mexico, especially at the University of New Mexico, the state’s flagship medical center and health careers training university.

This report offers an evaluation framework for Health Care Workforce (HCW) pipeline programs and considers ten Con Alma Health Foundation funded HCW programs against the backdrop of extreme challenges in health care funding and delivery in a rural state, and escalating health care workforce shortages amidst growing population health equity needs in New Mexico. This report also provides an analysis of the health career pipeline program best practices which include: pre-professional trainee curriculum development; professional competency development; mentorship or preceptorship development; and cross-disciplinary collaboration.

Full report can be located through the following link:

[http://conalma.org/wp-content/uploads/2011/03/2010\\_0729Buildinga21stCentHealthCareWorkforce.pdf](http://conalma.org/wp-content/uploads/2011/03/2010_0729Buildinga21stCentHealthCareWorkforce.pdf)

**Pipeline to the Health Professions// Employing Health Professions Pipeline Programs to Produce and Prepare Future Healthcare Professionals, Diversify the Healthcare Workforce, and Improve the Health of Our Nation**

*Frankline Augustin, University of Southern California, December 2010*

The report provides case study review of five California-based pipeline programs that target URM students and disadvantaged students. Each program has experienced varying levels of sustainability. Two of the pipeline programs, federally funded by the Health Careers Opportunity Program, were based in California State University, Los Angeles and California State University, Fresno. The other three programs reviewed are the Medical Counseling Organizing and Recruiting program at the University of Southern California; the Educational Opportunity Program at California State University, Northridge; and the Student Health Professionals Pre-Entry Program, also at California State University, Northridge.

Full report can be located through the following link:

<http://digitallibrary.usc.edu/assetserver/controller/item/etd-Augustin-4161.pdf>

**American Dental Education Association/ W.K. Kellogg Foundation- Access to Dental Careers Program: Supporting a Dental Pipeline Concept and Program**

Sonja G. Harrison, Jeanne C. Sinkford, Richard W. Valachovic, Richard G. Weaver. *Journal of Dental Education, Volume 74, Number 10. Oct 2010*

This report provides an overview of the success of the Access to Dental Career Grant (ADC) pipeline program funded by the W.K. Kellogg Foundation (WKKF) with the support of the Robert Wood Johnson Foundation. The objectives of the pipeline program were to have senior dental students spend an average of sixty days in community clinics and practices treating underserved patients; provide courses and clinical experiences related to cultural competence and public health; and increase the number of underrepresented minority (URM) students enrolled through recruitment activities, summer enrichment, and expanded post baccalaureate programs for URM/LI students

The pipeline program has been reported to be a success. The service provided by senior dental students in community clinics, cultural competence, and public health instruction increased at all of the fifteen participating schools. Additionally, recruitment and enrichment efforts resulted in a significant increase in the number of URM students enrolled in most of the pipeline schools. The American Dental Education Association (ADEA)/WKKF ADC schools have an opportunity for continuous engagement with their ADC alumni in activities that support recruitment of URM/LI students to dental careers.

Full reports can be located through the following links:

<http://www.jdentaled.org/content/74/10/1166.full.pdf+html>

[http://www.jdentaled.org/content/73/2\\_suppl/S83.full.pdf+html](http://www.jdentaled.org/content/73/2_suppl/S83.full.pdf+html)

**Best Practices to Address Under-Representation of African-American and Hispanics in the Health Professions in Texas**

*Texas Area Health Education Center East, November 2011*

Texas is facing a shortage of health professionals. An increasingly important by-product is a workforce that is no longer ethnically or culturally representative of a Texas population. This review provides a compilation and analysis of existing programs designed to fill the holes in the health care workforce by encouraging diversity in health professions.

Through an analysis of existing programs, this study identified gaps in pipeline levels by discipline and education levels. Nationwide and statewide there is a lack of programs to support recruiting and retaining minorities into allied health, pharmacy and public health careers. Nation and statewide, there is a clear lack of programs for recruiting and retaining minorities in academic programs that are less than two years of post-high school education. Obstacles to creating best practices include: a lack of “vertical alignment” and “partnership” between all education pipeline levels (i.e. P through 12, less than two years, two to four years and graduate/professional) for recruiting and retaining minorities into the health professions; a lack of communication between the educational pipelines. Each level of the educational pipeline has their own goals for the students. Thus, there is no “shared” or “common” goal; and Very little information about the cost-effectiveness of programs for recruiting and retaining minority students into careers in the health professions. Cost-effectiveness data is not readily available or openly discussed in much of the literature nor is it widely publicized in public programmatic information such as websites and program brochures.

Based on findings the study determined a list of ranked and recommended *program characteristics* of “Best Practices” that should be considered for statewide, regional and local implementation:

1. *Cost effectiveness:*
2. *Appropriateness*
3. *Ability to be shared*
4. *Ability to be improved*
5. *Effectiveness*

Full report can be located through the following link:

<http://txaheceast.org/Portals/0/Best%20Practices%20Final%2011%2030%2011.pdf>

## **Strategies for Pipeline Programs**

### *State of Oregon*

This document provides a summary of different K-12 and community college pipeline programs throughout the United States and the strategies used by each of the pipeline programs. It also provides a summary of important components of successful pipeline programs which include: leadership and accountability; resources; accreditation; mentoring; hands-on; resources for teachers; programs must begin early; community; admission criteria; public relations; and addressing diversity shortages.

Full report can be located through the following link:

[http://cms.oregon.egov.com/oha/oei/health\\_equity/strategies\\_for\\_pipelineprogs.pdf](http://cms.oregon.egov.com/oha/oei/health_equity/strategies_for_pipelineprogs.pdf)