



Public Health Challenges

- It is estimated that by 2020 census, greater than half of the children in the U.S. will belong to racial and ethnic groups that are under-represented in the current healthcare workforce.¹
- Without sustained efforts to recruit and retain well-qualified professionals from diverse populations, there will be a shortage in the scientific workforce that will negatively impact the U.S. economy and general health of its citizenry.²
- Development of effective systems of care for populations who have socially determined health disparities.
- Addressing the 10 essential goals of Public Health (Figure 1) to reduce health disparities: (1) Enforce Laws; (2) Link to Health Care; (3) Assure Competent Workforce; (4) Evaluate; (5) Monitor Health; (6) Diagnose and Investigate; (7) Inform, Educate, Empower; (8) Mobilize Community Partnerships; (9) Develop Policies; and (10) Research.³

Workforce Development Challenge

Addressing projected shortages in the public health workforce, especially among African American, Latino/as, Native Americans, and select Asian American populations is a significant public health and educational challenge. The CDC is addressing this challenge through an innovative national leadership program led by Kennedy Krieger Institute.

The Maternal Child Health Careers/ Research Initiatives

Program for Student Enhancement-Undergraduate Program (MCHC/RISE-UP) engages diverse undergraduate and post baccalaureate scholars in community, university, and web-based learning environments.⁴ The **MCHC/RISE-UP** created a national undergraduate leadership partnership among Institutions, Universities, and University Centers of Excellence in Developmental Disabilities (UCEDD).

Partnership Sites

- Kennedy Krieger Institute (KKI), (Lead Institution)***
- Johns Hopkins University School of Medicine, Nursing, Public Health

- Historically Black Colleges and Universities
 - Coppin State University
 - Howard University
 - Morgan State University

- University of Southern California UCEDD at Children's Hospital Los Angeles***
- Hispanic Serving Institution
 - California State University-Los Angeles

- University of South Dakota/Sanford School of Medicine Center for Disabilities (USD)***
- Tribal Serving Institutions

MCHC/RISE-UP Scholar Benefits & Compensation

- Multi-level mentorship providing academic and professional guidance
- \$3500 stipend
- Housing and transportation
- Visit Centers for Disease and Control Prevention (CDC) in Atlanta, GA during Orientation week

*MCHC/RISE-UP Faculty Partnership Sites

Scholars

Between 2012-2016, 2931 students applied for MCHC/RISE-UP. 197 scholars were accepted to the MCHC/RISE-UP, 56 (28.4%) African American (Non-Hispanic), 53 (26.9%) Hispanic/Latino, 34 (17.3%) Asian, 19 (9.6%) White (Non-Hispanic), 16 (8.1%) American Indian/Alaskan Native, 4 (2.0%) Native Hawaiian/Pacific Islander, 15 (7.6%) Biracial/Other.

MCHC-RISE-UP Scholars (N=197)

Race, Ethnicity	n (%)
Black, Non-Hispanic	55 (27.9%)
Black, Hispanic	2 (1.0%)
Black, Ethnicity Unknown	1 (0.5%)
White, Non-Hispanic	19 (9.6%)
White, Hispanic	20 (10.0%)
Asian, Non-Hispanic	33 (17.0%)
Asian, Ethnicity Unknown	1 (0.5%)
American Indian or Alaska Native, Non-Hispanic	15 (7.6%)
American Indian or Alaska Native, Hispanic	5 (2.5%)
American Indian or Alaska Native, Ethnicity Unknown	1 (0.5%)
Native Hawaiian or Other Pacific Islander, Non-Hispanic	4 (2.0%)
Native Hawaiian or Other Pacific Islander, Hispanic	1 (0.5%)
Multiracial, Non-Hispanic	8 (4.0%)
Multiracial, Hispanic	6 (3.0%)
Other, Hispanic	20 (10.0%)
Other, Ethnicity Unknown	4 (2.0%)
Refused	2 (1.0%)

Teaching Strategies



Orientation week

- Lectures on health equity and health disparity topic areas
- Research, Clinical, Public Health, and Policy Leaders from diverse public health fields
- CDC site visit and networking

Experiential Learning through Leadership

- Community Engagement & Advocacy
- Clinical
- Research

Distance Learning across Partnership Sites

- CDC's Winnable Battles using an epidemiological rubric and evidence-based flipped classroom approach.

Weekly Mentorship

- Professionalism and Leadership Skills

Presentations

- Community, mentor, peer, Johns Hopkins Career, Academic, and Research Experiences for Students (C.A.R.E.S.) Summer Symposium, and conference presentations

MCHC/RISE-UP Learning Goals

Community Engagement & Advocacy Learning Goals: MCHC/RISE-UP scholars increase their understanding of health care systems and finance, facilitate collaborations between agencies and systems to promote health, and learn methods to collect and use epidemiological data to inform public health and Maternal Child Health policy through interactions with state and local health departments.

Clinical Learning Goals: Scholars assist in locating resources for patients in the community and learn about health challenges confronting underserved populations and strategies to prevent disease and promote health and health equity.

Research Learning Goals: Scholars participate in mentored research projects with federally-funded public health mentors. Scholars acquire knowledge about culturally relevant approaches to conduct research to address health disparities among African American, Hispanic/Latino(a), new immigrant, and LGBTQ populations, and individuals with disabilities, and/or individuals with low income/resources.

MCHC/RISE-UP Community Engagement & Advocacy

- Population Health at University of South Dakota
- Violence Prevention Coalition of Greater Los Angeles
- Health Impact Studies (USC School of Policy).
- Maryland's UCEDD
- Population Health at Maryland State Health Department

MCHC/RISE-UP Clinical Leadership

- Kennedy Krieger Institute**
 - Developmental Pediatrics
 - Physical Medicine & Rehabilitation
 - International Spinal Cord Injury Center
 - Behavior Psychology
 - Clinical Psychology
 - Physical Therapy
 - La Esperanza Clinic.** Community-based health care and prevention education to Spanish-speaking immigrants in the Baltimore area
 - Johns Hopkins Harriet Lane Clinic**
- University of South Dakota Sanford Medical Center**
 - Neonatal Intensive Care
 - Speech Language Pathology
- Children's Hospital Los Angeles**
 - Project Legacy.** Division of Adolescent Medicine Substance Abuse and HIV Intervention Program for Homeless Youth
 - Obesity Prevention for Latino Children--MEND (Mind, Exercise, Nutrition, Do it)**
 - Los Angeles Centers for Alcohol and Drug Abuse (LA CADA)**

MCHC/RISE-UP Research Opportunities

Research Experiences

- Obesity
- Domestic Violence
- National Child Traumatic Stress Network
- HIV/AIDS
- Lower Brule Reservation Community Needs Assessment
- Research Education in the Community
- World Clinic Research and Seminar Planning

Maternal and Child Health/Public Health Core Competencies and Leadership Characteristics (N=147)

Characteristics	Pre Mean (SD)	Post Mean (SD)	p-value
Competency Area⁵			
Knowledge (n=142)	6.6 (3.4)	9.7(3.6)	.0000
Self-Reflection (n=147)	6.4 (2.3)	8.3 (2.0)	.0000
Ethics (n=114)	6.4 (2.3)	8.2 (1.8)	.0000
Critical Thinking (n=144)	4.9 (2.7)	7.1 (2.5)	.0000
Negotiation (n=144)	7.1 (2.1)	8.4 (1.8)	.0000
Family-Centered Care (n=136)	5.5 (2.8)	7.5 (2.5)	.0000
Teaching/Mentoring (n=144)	6.5 (2.4)	8.1 (2.0)	.0000
Community (n=107)	5.2 (2.8)	7.6 (2.4)	.0000
Leadership Behaviors⁶			
Laissez-Faire (n=131)	4.7 (3.5)	3.6 (3.0)	.0000
Transactional (n=133)	11.2 (2.8)	12.6 (2.3)	.0000
Transformational (n=138)	55.5 (10.8)	63.1 (8.2)	.0000

Academic and Professional Outcomes 2012-2016 MCHC/RISE-UP Scholars (n=155)

Academic and Professional Outcomes	n (%)
Enrolled in Graduate/Professional School	60 (38.7)
MPH	17 (11.0)
Masters, Other	11 (7.1)
MD	19 (12.3)
PhD	5 (3.2)
Doctorate, Other	5 (3.2)
Physician Assistant Program	1 (0.7)
MSW	1 (0.7)
Applying to Graduate School	30 (19.4)
Healthcare and Public Health Workforce	40 (25.8)

OUTCOMES & IMPLICATIONS

The majority of MCHC/RISE-UP scholars (n=155; 78.7%) graduated from undergraduate institutions. Of the graduates, 83.8% (n=130) of MCHC/RISE-UP scholars planned to enter public health or healthcare fields. MCHC/RISE-UP scholars demonstrated significant improvements in maternal and child health and public health core competencies. Scholars endorsed significant increases in transformational and transactional leadership behaviors and reduced laissez-faire leadership behaviors. In summary, scholars enrolled in MCHC/RISE-UP demonstrated commitment to pursue public health and healthcare careers and enhanced public health competencies and leadership skills.

References

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