Diversity, Health Disparities and Population Health

UAHS Discovery Lunch
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The moral obligation of an academic health center is to improve the health of their communities.
UAHS is committed to improving the health of AZ communities

◆ UAHS contributes to solving Arizona’s vexing healthcare challenges by:
  ◆ Novel Clinical Trials, Discoveries and Precision Therapies
  ◆ Educating a diverse Arizona health care workforce
  ◆ Providing training sites for AZ residents and fellows
  ◆ Increase AZ health insurance enrollments
  ◆ Providing “Big Data” health care analytic support for the State, for FQHCs and for AZ Health systems
  ◆ Providing novel cost-effective population health management strategies and models of care that improve outcomes
  ◆ Providing Telemedicine support to urban and rural areas
  ◆ Developing mobile health technologies
ENHANCING EXCELLENCE

UAHS Discoveries Improve AZ Health

Clinical Trials
- Asthma
- COPD
- Lung cancer
- Sleep disorders
- Breast cancer
- Chronic kidney disease
- Pulmonary hypertension

Novel Precision Therapies
- Genomic & Genetic insights lead to new diagnostics and therapies in:
  - Colon and breast Cancers
  - Lymphoma
  - Acute and chronic lung diseases (asthma, acute lung injury, fibrosis)
  - Heart Failure

Cell-Based Therapies
- Alzheimer’s
- Parkinson’s
- Ischemic heart disease
- Heart failure

Medical Devices
- Ovarian cancer—early detection
- Diabetes—improve islet cell transplants
- Ischemic heart disease—rapid diagnosis via “stretchable electronics” in catheters for

Alzheimer’s
Parkinson’s
Ischemic heart disease
Heart failure
**UAHS Training of Arizona’s Health Workforce**

- UAHS College of Pharmacy educates 20% of AZ Pharmacists and PharmDs
- UAHS Colleges of Medicine (COMs) educates or trains >25% of AZ’s Physicians
- UAHS Colleges of Nursing educates 10% of AZ’s RNs and Nurse Practitioners.

Current location of UAHS graduates
UAHS Health Professional Workforce is Increasingly Diverse

Colleges of Medicine (Tucson & Phoenix)  
College of Nursing  
College of Pharmacy

- Hispanics  
- American Indian/Alaska Native  
- Blacks/African American

Hispanic National Average (8.6%)  
Hispanic National Average (5.2%)  
Hispanic National Average (5.1%)
A Diverse AZ Healthcare Workforce Is Critical To Addressing State-Wide Health Disparities

- Minority physicians are much more likely to treat minority patients and to serve in rural and underserved areas.
- Minority patients prefer physicians of their own race or ethnicity and exhibit improved health outcomes when they have minority health providers.
- In the US, the gap between the % of minority physicians and the % US minority population has widened (13% in 1990 to 17% in 2012)
- Increased numbers of minority physicians and healthcare providers are needed to address health disparities in the US, including AZ.
“Of all the forms of inequality, injustice in health is the most shocking and the most inhumane.”

Dr. Martin Luther King, Jr., National Convention of the Medical Committee for Human Rights, Chicago 1966
Health care is an enormous piece of the Arizona economy
AZ health care generates ~$22B annually*
AZ has many unique healthcare challenges:
- Diversity
- Poverty
- Geography
- Health Workforce Shortages
- GME Issues

*U.S. Department of Commerce
**AZ Diversity**
AZ’s exceptional diversity with many counties of Latino and Native American majority

**AZ Uninsured Children**
Distribution of AZ’s uninsured children-highest in Indian reservations

**AZ Elderly in Poverty**
Distribution of AZ’s elderly below federal poverty line as % of the elderly population. Highest in Indian reservation lands
AZ Primary Care Areas More than 30 Min From Nearest Hospital
UAHS Contributions to Arizona’s Challenging Healthcare Landscape

AZ Area Health Education Centers (AzAHEC)

- Five regional centers supporting health professions education, continuing education for health professionals, addressing health disparities and health workforce issues.
- Rural and urban underserved clinical rotations and field experiences for trainees center for Rural Health.
Rural Health Professions Programs in UAHS Colleges

- **College of Public Health**. Aims to increase the number of public health students who practice in rural and underserved communities in the state of Arizona.

- **College of Nursing**. Aims to increase the number of doctoral-level Nurse Practitioners who have expertise in providing care to rural and medically-underserved populations.

- **College of Pharmacy**. Aims to meet community needs through pharmacy workforce development programs that address the access challenges of Arizona’s rural and medically-underserved communities.

- **College of Medicine – Tucson** and **College of Medicine – Phoenix**. Offers rural and urban underserved clinical rotations in family medicine, general surgery, internal medicine, obstetrics and gynecology, and pediatrics.
UAHS Contributions to AZ’s Challenging Healthcare Landscape

- Center for Elimination of Border Health Disparities
- Center for Disparities in Diabetes, Obesity and Metabolism
- Center for Population Science and Discovery
- AZ Center for Rural Health

Informatics

Health Disparities

Population Health & Outcomes

Precision Health

Neuroscience

Diversity
The Changing Healthcare Landscape in Arizona

- Center for Population Science and Discovery
  - Working with FQHCs in
    - Nogales, Yuma and Douglas to establish teaching health centers
  - Helping the State with analysis of health outcomes in their underserved populations
  - Analytic Support to organizations across the state
- Data Resources
  - Searchable repository of public use datasets
- Website
  - ACA Resources
  - Community resources to improve population health

*U.S. Department of Commerce
In 2014, there were 1.2 million uninsured Arizonans, more than half were Latino.

- UAHS role - assure Arizonans understand coverage and assistance programs.
- UAHS Program - AzCRH Navigator Consortium.
The Arizona Telemedicine Program (ATP)

- Telemedicine is a lifeline linking 70 AZ communities and 160 sites by broadband telecommunications.
- ATP contributes to solving population management by giving patients face-to-face video consultations with primary care, and medical specialists.
- Tele-Radiology for 1.3M cases in 25 rural communities
- ATP delivered >500 tele-echocardiology scans from NICU in Yuma Medical Center facilitating life-saving air evacuations
- ATP delivered digital retinal screening of 4,000 high risk diabetic Latino patients
We are in the midst of an information tsunami, generating more data in 2 days than from the dawn of man until 2003, now doubling every 18 months.

Combining different sourced data allows providers increased insights into medicine.

UAHS' Center for Population Science and Discovery & Center for Bioinformatics and Biostatistics are uniquely suited for population health management and 'big data' interrogation.

Potential state-wide resource for FQHCs and AZ health systems.

Sequencing and gene expression data
Drug data (pathways, structure etc.)
Clinical Trial & Hospital Electronic Record data
In vitro diagnostics & X-ray results
Patient self-reported and social media data
Telemedicine data, financial data, economics

Drug repurposing
New biomarkers
Identify high cost pts
Personalized healthcare
Adverse event detection, etc.

Big Data Analytics
Mobile Health App Development

- The digital age, supercharged by mobile, offers digital solutions that are minimally invasive, with remote monitoring and increase access will improve better delivery of health care
- Mobile health apps- address the issue of chronic disease management that requires consumers to participate in managing their health- sometimes on a day-to-day basis.
- UAHS is developing new mobile phone apps for home health monitoring of diabetes (blood sugar), asthma (peak flows) heart failure (weight) to reduce CHF hospital readmissions and healthcare costs
- Mobile information is sent to the primary care team thereby shifting health care from "point of service" model to a dialogue between patients and providers.
Partnersing to Address Cancer Burden among Arizona’s Native Americans

- The National Cancer Institute (NCI)-funded “Partnership for Native American Cancer Prevention” ($13 million) (renewed in 2014).
- A collaboration between UA’s NCI Cancer Center and NAU to continue to bring prevention and research training to the Hopi Tribe, Tohono O’odham Nation and Navajo Nation of Arizona.
- Strong partnerships with tribal leaders is essential to this success.
Vision for the UA Health Sciences

UAHS will make the investments in people, infrastructure, facilities, and partnerships to:

- Improve community health in the state, the border state region, and the world.
- Be recognized as a high-impact, high-performing leader in academic medicine, translating scientific discovery into improved health.
- Be a national thought-leader in the elimination of health disparities.
- Be a national leader in health science training of a diverse faculty, staff, student body, and biomedical workforce.
- Develop future global leaders in health care delivery, research, and education.
- Serve as the cornerstone for two unique, top-tier Academic Health Centers.
The University of Arizona Health Sciences

Thank You!!