“Physicians are the natural attorneys of the poor.”

"Medicine is a social science, and politics is nothing else but medicine on a large scale.“

Rudolf Virchow
“Medicine is a social science, and politics is nothing else but medicine on a large scale. **Medicine**, as a social science, as the science of human beings, **has the obligation to point out problems and to attempt their theoretical solution:** the politician, the practical anthropologist, must find the means for their actual solution... **Knowledge which is unable to support action is not genuine** – and how unsure **is activity without understanding**... If **medicine** is to fulfill her great task, then she **must enter the political and social life**... The physicians are the natural attorneys of the poor, and the social problems should largely be solved by them.”
“The landmarks of political, economic and social history are the moments when some condition passed from the category of the given into the category of the intolerable. I believe that the history of public health might well be written as a record of successive re-definings of the unacceptable.”
“The philosophy behind science is to discover truth.

The philosophy behind medicine is to use that truth for the benefit of your patient.

The philosophy behind public health is social justice.”

William Foege – CDC director, 1977-1983
I swear by Apollo, the healer, Asclepius, Hygeia, and Panacea, and I take to witness all the gods, all the goddesses, to keep according to my ability and my judgment, the following Oath and agreement...
# Top Ten Causes of Death: 1850 – 1900 – 2000

<table>
<thead>
<tr>
<th>1850</th>
<th>1900</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tuberculosis</strong></td>
<td><strong>Pneumonia</strong></td>
<td><strong>Heart disease</strong></td>
</tr>
<tr>
<td><strong>Dysentery/diarrhea</strong></td>
<td><strong>Tuberculosis</strong></td>
<td><strong>Cancer</strong></td>
</tr>
<tr>
<td><strong>Cholera</strong></td>
<td><strong>Diarrhea</strong></td>
<td><strong>Stroke</strong></td>
</tr>
<tr>
<td><strong>Malaria</strong></td>
<td><strong>Heart Disease</strong></td>
<td><strong>Lung disease</strong></td>
</tr>
<tr>
<td><strong>Typhoid Fever</strong></td>
<td><strong>Stroke</strong></td>
<td><strong>Accidents</strong></td>
</tr>
<tr>
<td><strong>Pneumonia</strong></td>
<td><strong>Liver Disease</strong></td>
<td><strong>Diabetes</strong></td>
</tr>
<tr>
<td><strong>Diphtheria</strong></td>
<td><strong>Accidents</strong></td>
<td><strong>Pneumonia/Influenza</strong></td>
</tr>
<tr>
<td><strong>Scarlet Fever</strong></td>
<td><strong>Cancer</strong></td>
<td><strong>Alzheimer’s disease</strong></td>
</tr>
<tr>
<td><strong>Meningitis</strong></td>
<td><strong>Diseases of Old Age</strong></td>
<td><strong>Kidney disease</strong></td>
</tr>
<tr>
<td><strong>Pertussis</strong></td>
<td><strong>Diphtheria</strong></td>
<td><strong>Blood poisoning</strong></td>
</tr>
</tbody>
</table>

[https://www.census.gov/history/www/through_the_decades/overview/1850.html](https://www.census.gov/history/www/through_the_decades/overview/1850.html)
Leading Causes of Death: 1900 - 2010

Deaths per 100,000 people in the U.S.A. by cause, 1900 and 2010

Data source: nejm.org/doi/full/10.1056/NEJMp1113569 | Author: Randy Olson (randalolson.com / @randal_olson)
Increasing life expectancy in the U.S. - until recently

- 25 of the 31 years of increased life expectancy is due to public health efforts
- Due to medicine and public health working collaboratively
## The “Real” Top Causes of Death U.S.

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>Number of Deaths</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Tobacco</td>
<td>435,000</td>
<td>18%</td>
</tr>
<tr>
<td>Diet/activity</td>
<td>365,000</td>
<td>15%</td>
</tr>
<tr>
<td>Alcohol</td>
<td>85,000</td>
<td>4%</td>
</tr>
<tr>
<td>Microbial agents</td>
<td>75,000</td>
<td>3%</td>
</tr>
<tr>
<td>Toxic agents</td>
<td>55,000</td>
<td>2%</td>
</tr>
<tr>
<td>Firearms</td>
<td>29,000</td>
<td>1%</td>
</tr>
<tr>
<td>Sexual behavior</td>
<td>20,000</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Motor vehicles</td>
<td>43,000</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Illicit use of drugs</td>
<td>17,000</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

Source: Mokdad et al, JAMA 2004 March 10; 291 (10):1238-45
Estimated Annual Deaths Attributed to Social Factors in the U.S.

- Income inequality: 119,000
- Racial segregation: 176,000
- Low social support: 162,000
- Individual poverty: 133,000
- Community poverty: 36,000
- Less than high school graduation: 245,000

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<td>Community Level Poverty</td>
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<tr>
<td>Firearms</td>
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Living Conditions Impact Health

**Communities of Opportunity**
- Social/economic inclusion
- Thriving small businesses and entrepreneurs
- Grocery stores
- Parks & trails
- Sufficient healthy housing
- Good transportation options and infrastructure
- Financial institutions
- Home ownership
- Better performing schools
- IT connectivity
- Strong local governance

**Low-Opportunity Community**
- Social/economic exclusion
- Few small businesses
- Fast food restaurants
- Unsafe/limited parks
- Rental housing/foreclosure
- Poor and limited housing stock
- Few transportation options
- Payday lenders
- Poor performing schools
- Pollution/contaminated drinking water
- Limited IT connections
- Weak local governance

**Contributes to health disparities:**
- Obesity
- Diabetes
- Asthma
- Cancer
- Injury

**Good Health Status**

**Poor Health Status**
The conditions and circumstances in which people are born, grow, live, work, and age. These circumstances are shaped by the distribution of money, power, social policies, and politics that are beyond the control of the individual.
Living Conditions Impact Health

• People in distressed areas die five years earlier than people in prosperous regions.
• Mortality rates from mental health conditions 64% higher in distressed areas.

DCI: no HS degree, unstable housing, adult unemployment, poverty, income ratio, employment rate change, change in # of business

Data: Economic Innovation Group Distressed Communities Index; Map: Lazaro Gamio / Axios
Minnesota is a healthy state

- State Health Ranking – MN #4
- MN – Best Place to Retire
- Healthiest Cities Rank – Minneapolis #1

Healthcare system: #1
Health of Seniors: #1
Life expectancy: #2
Well-being index: #3
Infant mortality: #4
Life expectancy after 65: #6
Advancing health and health equity is not about averages. It’s about creating opportunities for everyone to be healthy.

The opportunity to be healthy is not equally available everywhere or for everyone.
Minnesota homelessness rates by race and ethnicity, 2015

Note: Hispanic people may be counted as both part of that ethnicity group and as a member of a race.

Life expectancy at birth by race/ethnicity, Minnesota and U.S.

People in most racial and ethnic groups are better off in Minnesota than they are in the U.S. as a whole when it comes to life expectancy. But Minnesotans who are American Indian or Asian are worse off in Minnesota.

Median household income by racial and ethnic group of householder in Minnesota, 2017

Note: High margins of error for smaller groups, including black and American Indian Minnesotans, mean the estimates may not be as far apart as they appear.

Adult population in Minnesota prisons, July 2018

Note: Hispanic people are counted as both part of that ethnicity group and as a member of a race.
What we are doing to advance health equity is not working.

USA White and Black
IMR: 1980-2011

NCHS
What we are doing to advance educational equity is not working.

*Figure 2: Percent Reading Scores at or above 250 for 4th, 8th, and 12th grades*

Source: Educational Digest, NAEP 2010; Reading scores above 250 reflect ability to search for specific information while reading, interrelate ideas and make generalizations about literature, science, and social studies materials.
We need to change how we do our work

“Public health is what we, as a society, do collectively to assure the conditions in which (all) people can be healthy.”

The Future of Public Health
Institute of Medicine, 1988
“...the physician’s function is fast becoming social and preventive, rather than individual and curative...(do) not to forget that directly or indirectly, disease has been found to depend largely on unpropitious environment...a bad water supply, defective drainage, impure food, unfavorable occupational surroundings...(these) are matters for ‘social regulation,’ and doctors have the duty to promote social conditions that conduce to physical well-being.”
Public health is the science and art of:
Preventing disease. Prolonging life, and Promoting health and efficiency through organized community effort for...

a. the sanitation of the environment
b. the control of communicable infections
c. the education of the individual in personal hygiene
d. the organization of medical and nursing services for the early diagnosis and preventive treatment of disease, and
e. the development of the social machinery to insure everyone a standard of living adequate for the maintenance of health, so organizing these benefits as to enable every citizen to realize his birthright of health and longevity.

C.E.A. Winslow, Dean
Yale School of Public Health
Living Conditions Affect ACEs and Foster Diseases of Disconnection and Despair

Diseases of Disconnection and Despair
- MOTOR VEHICLE CRASHES
- OBESITY
- HOMICIDES
- PTSD
- ANXIETY
- DEPRESSION
- DEMENTIA
- STDS
- SUICIDES
- MENTAL HEALTH CRISES
- INJURIES
- HIV
- HEPATITIS C
- CIRRHOSIS
- UNWANTED PREGNANCIES
- DIABETES
- SUBSTANCE ABUSE (ATOD)
- ADDICTIONS
  (ALCOHOL, DRUGS, FOOD, SEX, GAMBLING, SCREENS)

Adverse Childhood Experiences
- DIVORCE/SEPARATION
- ALCOHOL ABUSE
- DRUG USE
- INCARCERATION
- MENTAL ILLNESS
- DOMESTIC VIOLENCE
- ABUSE (PHYSICAL, SEXUAL, VERBAL, EMOTIONAL)

Adverse Societal Conditions
- INEFFECTIVE SCHOOLS
- INCOME INEQUALITY
- CRIME
- POVERTY
- SOCIAL EXCLUSION
- RACISM
- SEXISM
- UNEMPLOYMENT
- SCHOOL SUSPENSIONS
- HOMOPHOBIA
- FOOD INSECURITY
- LACK OF HOPE
- ENVIRONMENTAL CONTAMINATION
- DISRUPTED FAMILIES
- CLIMATE VULNERABILITY
- RED LINING
- VIOLENT NEIGHBORHOODS
- HOUSING INSECURITY
- POOR ACCESS TO HEALTH AND HUMAN SERVICES
WHO Framework for Advancing Health and Health Equity

To Advance Health Equity and Optimal Health for All we need to influence policies and change living conditions.

**Triple Aim of Health Equity**

- **Improve Health in All Policies**
  - Implement a Health in All Policies Approach With Health Equity as the Goal

- **Expand Understanding of Health**
  - Expand Our Understanding of What Creates Health

- **Strengthen Community Capacity**
  - Strengthen the Capacity of Communities to Create Their Own Healthy Future

- **Social Cohesion and Social Justice**
Expand the Understanding of What Creates Health

Necessary conditions for health (WHO)
- Peace
- Shelter
- Education
- Food
- Income
- Stable eco-system
- Sustainable resources
- Social justice and equity
- IT connectivity
- Mobility
- Health Care
- Social responsibility

Determinants of Health

Genes and Biology
- Physical Environment
- Clinical Care
- Health Behaviors

Social and Economic Factors
- 40%


Attributable Causes of Death

- Tobacco 42%
- Diet/Physical Activity 35%
- Alcohol 9%
- Microbial Agents 7%
- Toxic Agents 5%
- Firearms 2%

Each year in the United States:
$15.3 Billion is spent marketing tobacco
$6 Billion is spent marketing alcohol
$2.9 Billion is spent marketing soda (by just 1 company)

Expand the Understanding of What Creates Health

Determinants are created & enhanced mostly by policies and systems that impact the physical and social environment.

Ehlinger’s beliefs about the contributions to health determinants:
- Physical Environment: 10%
- Genes and Biology: 10%
- Social and Economic Factors: 60%
- Clinical Care: 10%
- Health Behaviors: 10%
The Narrative About What Creates Health Is Important

**Predominant U.S. Worldview**

- Health is a private matter
- Small Government
- Mistrust of Science
- Reliance on technology/specialization
- I know what’s best for me and my family
- Medical care will cure me if I get sick

**Boot Straps Individualism**

- Virtue of Work
- Health is an individual responsibility

**Free Market Solutions**

- Education is for job training
- Competition and consumer choice
- Healthcare should run like a business
- Anyone can choose to be healthy

**Dominant Contemporary Health Narrative**

- Decreased investment in the “commons” and the disadvantaged
- Increased competition & polarization
  - Blaming individuals
  - Over investment in biomedical model

- Decreased investment in the “commons” and the disadvantaged
- Increased competition & polarization
  - Blaming individuals
  - Over investment in biomedical model
Expand the understanding about what creates health. Contrasting/Alternative Worldviews

**Dominant U. S. Worldview**
- Small Government
- Mistrust of science
- Reliance on technology/specialization
- Structural discrimination is a thing of the past
- Education is for job training
- Free Market Solutions
- Boot Straps Individualism
- Virtue of Work

**Alternative Worldview**
- Necessary government
- Cooperation
- Collective Action
- Need for generalists
- Equity is the challenge of the present
- Social responsibility
- Social Cohesion
- Virtue of Work
- Interdependence

**Expand the understanding about what creates health. Contrasting/Alternative Worldviews**

- Mistrust of science
- Reliance on technology/specialization
- Structural discrimination is a thing of the past
- Education is for job training
- Free Market Solutions
- Boot Straps Individualism
- Virtue of Work
- Small Government

**Interdependence**
- Social Cohesion
- Virtue of Work

**Social responsibility**
- Social Justice

**Education is for enlightenment**

**Necessary government**

**Cooperation**
- Collective Action

**Need for generalists**

**Equity is the challenge of the present**

**Expand the understanding about what creates health. Contrasting/Alternative Worldviews**
Health is a collective/community responsibility

Health is a right

Well-being is the goal (not economic success)

Health Equity is the challenge of the present

Balanced investment in care, prevention, and community resilience

Government protects the public good (PSE)

Health in all policies

Balanced investment in Public Health & Medical Care Esp. Primary Care
Implement a Health in All Policies and Sectors Approach with Health Equity as the Goal

- Minimum Wage
- Paid Leave
- Criminal justice
- Energy
- Transportation
- Broadband connectivity
- E-Health
- Housing/Homelessness
- Air/Water quality
- Ag Buffer strips
- Food Charter
- Marriage Equity
- Payday Lending
- Freedom to Breathe
- Health Care Reform
- Climate Change

At local, state, and national levels in both public and private sectors.
Implement a Health in All Policies and Sectors Approach with Health Equity as the Goal

Accountable Communities For Health

- ACOs
- COPC
- Healthcare Homes
- Community Care Teams
- Licensing & Training Policies

Restorative Practices

Workforce

Governance

In All Sectors
Strengthen the Capacity of Communities to Create Their Own Healthy Future

Vulnerable Population  ⇔  Afflicted without Complications  ⇔  Afflicted with Complications

Traditional Public Health Primary Prevention
Primary Care Secondary Prevention
Specialty Care Hospitals Tertiary Prevention

Becoming afflicted
Developing complications
Dying from Complications

Strengthen the Capacity of Communities to Create Their Own Healthy Future

World of Providing...
- Health education
- Screening tests
- Disease management
- Charity

- Pharmaceuticals
- Clinical services
- Physical and financial access
- Etc…

Medical and Public Health Policy

Vulnerable Population

Becoming afflicted

Afflicted without Complications

Afflicted with Complications

Developing complications

Dying from Complications

Charity

MANAGEMENT OF RISKS & DISEASES
“...the community in the fullest sense is the smallest unit of health...to speak of the health of an isolated individual is a contradiction in terms.”

World of Transforming...
- Deprivation
- Dependency
- Violence

By Strengthening...
- Democracy
- Mutual accountability
- Leaders and institutions

- Plurality
- Freedom
- Foresight and precaution
- The meaning of work
- Etc...

Medical and Public Health Policy

Healthy Public Policy & Public Work

Social Justice
- Improving Living Conditions

DEMOCRATIC SELF-GOVERNANCE

• Deprivation
• Dependency
• Violence

• Disconnection
• Environmental decay
• Stress
• Insecurity
• Etc...

MANAGEMENT OF RISKS & DISEASES

Charity

Developing complications

Dying from Complications

Becoming afflicted

Becoming vulnerable

Becoming no longer vulnerable

Safer, Healthier Population

Vulnerable Population

Afflicted without Complications

Afflicted with Complications

“The outbreak could not be solved by treating individual patients with drugs or with minor changes in food, housing, or clothing laws, but only through radical action to promote the advancement of an entire population, which could only be achieved by full and unlimited democracy and education, freedom and prosperity.”
Social Cohesion

• A community ethic that works toward the well-being of and embraces a responsibility for all community members, fights exclusion and marginalization, promotes trust, and creates a sense of belonging.

• Elements of social cohesion are:
  • social capital – the resources that result from people working together toward a common goal,
  • social mobility – the ability to move up in social or economic status,
  • social inclusion – having connection to, ownership of, and responsibility for community goals; having a sense of belonging – being wanted & needed.
“The greatest epidemic today is not TB, HIV or leprosy, it is being unwanted. Being unwanted, unloved, uncared for, forgotten by everybody is a much greater hunger, a much greater poverty, than the person who has nothing to eat.”

Mother Teresa
Saint Teresa of Calcutta
Solastalgia (neologism embracing ‘solace’ and ‘nostalgia’) (synonym “root shock”)

“...the pain or sickness caused by the loss or lack of solace and the sense of isolation. It is the pain and ill health experienced when there is recognition that the place where one resides is under assault (physical desolation) and/or where there is an erosion of the sense of belonging (identity) to that place. It is an intense desire for the place where one is a resident to be maintained in a state that continues to give comfort or solace. In short, solastalgia is a form of homesickness one gets when one is still at ‘home’.”

Glenn Albrecht, in 'Solastalgia' A New Concept in Health and Identity
“Belonging means being able to participate in the design of political, social, and cultural structures. Belonging is how do we actually organize our economy, our structures, our schools. Belonging means the right to contribute and make demands upon society and institutions.”

john a. powell, Director of the Haas Institute for a Fair and Inclusive Society
“A proper community is a commonwealth: a place, a resource, an economy. It answers the needs, practical as well as social and spiritual, of its members - among them the need to need one another.

Wendell Berry, The Art of the Commonplace: The Agrarian Essays
Asking the Right Questions Can Advance Health Equity
http://www.health.state.mn.us/divs/chs/healthequity/

Expand Understanding
• What values underlie decision-making process?
• What is assumed to be true about the world and the role of the institution in the world?

Health in All Policies
• What are the health and equity implications of the policy/program?
• Who is benefiting and who is left out?

Support Community Capacity
• Who is at the decision-making table, and who is not? Who set the table?
• Who is being held accountable and to whom? Who has the power?

Build Social Cohesion/Belonging/Social Justice
• Are relationships being created and strengthened?
• Is it inclusive? Do people feel like they belong?
• Are we building social capital?
• Does everyone have the opportunity to thrive?
“Virchow’s Triad” describes the factors contributing to thrombosis of blood — hypercoagulability, hemodynamic changes, and endothelial dysfunction.
“Virchow’s 21st Century Triad” describes the factors contributing to thrombosis of health – narrative, social determinants of health, and political will.
Health, Equity, and Social Justice are Existential Issues

- Nuclear War
- Climate Change
- Inequities
Edward P. Ehlinger, MD, MSPH
Public Health Metaphysician

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(612) 730-3165
@eehleringer
Public Health Metaphysician

- Integrates medicine, public health, and other disciplines
  - Deals with the intersection of multiple sectors
- Considers the objective and subjective factors of biological and social sciences along with the arts
- Addresses philosophical and abstract issues
- Asks epistemological (theory of knowledge) questions
- Uses the lens of equity and social justice.
"You think that if you understand one, you understand two—because one and one are two. But you must also understand 'and'."

Sufi saying