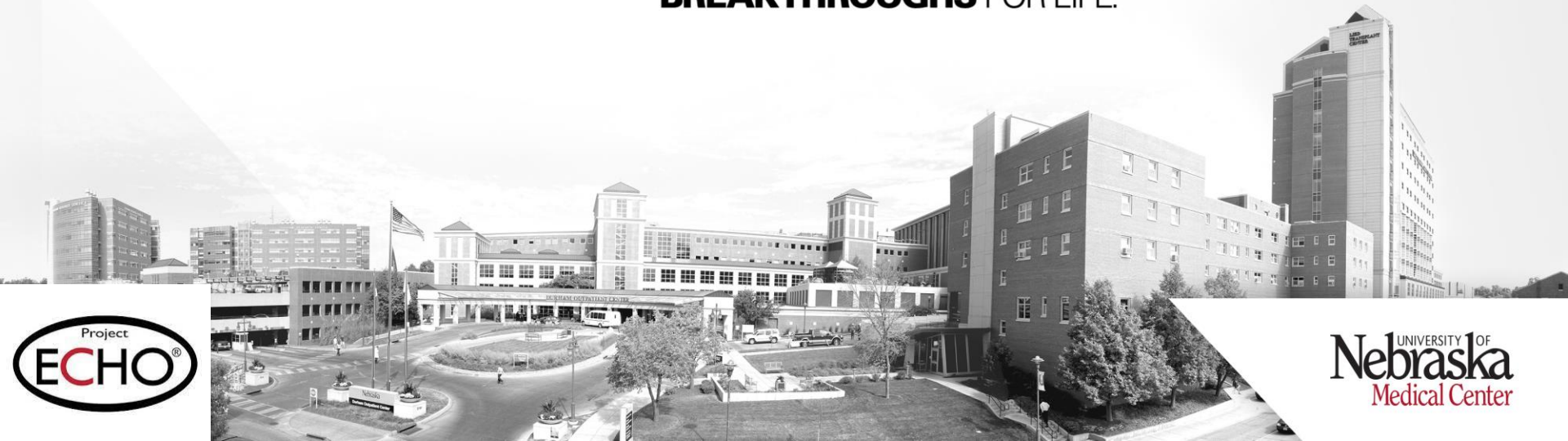
UNMC[SM]

BREAKTHROUGHS FOR LIFE.®



Project ECHO®

University of Nebraska Medical Center

UNMC ID ECHO Project to Reduce COVID-19 Health Disparities Through Quality Improvement

Welcome to Session 4

Project Funded by Nebraska DHHS through a CDC grant

Housekeeping Reminders

- Discussion makes sessions work best!
- Please stay muted unless you are speaking
- We love to see your face!
- Sessions will be recorded and available upon request
- Attendance is taken by filling the survey in the chat

- Reminder: Project ECHO collects registration, participation, questions and answers, chat comments, and poll responses for some ECHO programs. Your individual data will be kept confidential. This data may be used for reports, maps, communications, surveys, quality assurance, evaluation, research, and to create new initiatives.

Subject Matter Experts

Infectious Diseases Team

- M. Salman Ashraf, MBBS
- Erica Stohs, MD, MPH
- Anum Abbas, MD
- Kelly Cawcutt, MD, MS

Quality Improvement Team

- Jeff Wetherhold, QI Consultant
- Gale Etherton, MD
- Mahliqha Qasimyar, MD

Health Equity & Cultural Sensitivity Team

- Nada Fadul, MD
- Mahelet Kebede, HE & CS Consultant
- Shirley Delair, MD
- Jasmine Marcelin, MD
- Andrea Jones, MD
- Precious Davis, Case Manager
- Samantha Jones, Program Manager

*Ardis Reed, State QIN/QIO Representative

CE Disclosures

Project ECHO®

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UNMC ID Health Equity and Quality Improvement ECHO Project

Topics: Health Equity Historical Context and Quality Improvement Human Factors and Systems Thinking

Free Live ECHO Project
December 15, 2021
CID 53866

University of Nebraska Medical Center

TARGET AUDIENCE

This live activity is intended for physicians, APPs, nurses, social workers, case managers, and anyone else interested in learning about health equity in underserved populations.

ACTIVITY DESCRIPTION

Achieving health equity, addressing COVID-19 disparities, and improving the health of all Nebraskans using a quality improvement approach are the goals for our newly launched educational initiative. This COVID-19-focused health equity and quality improvement educational series will use the ECHO model for training healthcare workers.

The course is being offered through the University of Nebraska Medical Center (UNMC) infectious diseases (ID) ECHO program and is funded by the Nebraska Department of Health and Human Services (DHHS) via a CDC grant.

EDUCATIONAL OBJECTIVES

At the conclusion of this live activity, the participants should be better able to:

- Explain the role of human factors in work processes and error analysis in healthcare
- Describe systems thinking and how this relates to the Swiss Cheese Model
- List a historical example of medical racism.
- Recognize the present-day impact of historical medical experimentation.

REQUIREMENTS FOR SUCCESSFUL COMPLETION

In order to receive continuing education credit/credits, you must:

1. Participate in the live activity via ZOOM. Your attendance will be tracked by the course facilitator.
2. Complete the overall evaluation
    a. Instructions on how to access the overall evaluation will be provided on a quarterly basis.
    b. Continuing education credits will be issued for activities you attended.

For questions regarding evaluation and attendance, please contact Nuha Mirghani, MD, MBA, HCM at nmirghani@unmc.edu

ACCREDITED CONTINUING EDUCATION

In support of improving patient care, University of Nebraska Medical Center is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

PHYSICIANS/PHYSICIAN ASSISTANTS

The University of Nebraska Medical Center designates this live activity for a maximum of 1.5 *AMA PRA Category 1 Credit(s)*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

NURSES/NURSE PRACTITIONERS

The University of Nebraska Medical Center designates this activity for 1.5 ANCC contact hour(s). Nurses should only claim credit for the actual time spent participating in the activity.

ACCREDITED CONTINUING EDUCATION

As a Jointly Accredited Organization, University of Nebraska Medical Center is approved to offer social work continuing education by the Association of Social Work Boards (ASWB) Approved Continuing Education (ACE) program. Organizations, not individual courses, are approved under this program. State and provincial regulatory boards have the final authority to determine whether an individual course may be accepted for continuing education credit. University of Nebraska Medical Center maintains responsibility for this course. Social workers completing this live activity receive 1.5 interactive continuing education credits.

: content: Basic

This program has been pre-approved by The Commission for Case Manager Certification to provide continuing education credit to CCM® board certified case managers.
The course is approved for 1.5 CE contact hour(s).
Activity code: I00048476 Approval Number: 210003843
To claim these CEs, log into your CCMC Dashboard at www.ccmcertification.org.

DISCLOSURE INFORMATION

As a jointly accredited provider, the University of Nebraska Medical Center (UNMC) ensures accuracy, balance, objectivity, independence, and scientific rigor in its educational activities and is committed to protecting learners from promotion, marketing, and commercial bias. Faculty (authors, presenters, speakers) are encouraged to provide a balanced view of therapeutic options by utilizing either generic names or other options available when utilizing trade names to ensure impartiality.

All faculty, planners, and others in a position to control continuing education content participating in a UNMC accredited activity are required to disclose all financial relationships with ineligible companies. As defined by the Standards for Integrity and Independence in Accredited Continuing Education, ineligible companies are organizations whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients. The accredited provider is responsible for mitigating relevant financial relationships in accredited continuing education. Disclosure of these commitments and/or relationships is included in these activity materials so that participants may formulate their own judgments in interpreting its content and evaluating its recommendations.
This activity may include presentations in which faculty may discuss off-label and/or investigational use of pharmaceuticals or instruments not yet FDA-approved. Participants should note that the use of products outside currently FDA-approved labeling should be considered experimental and are advised to consult current prescribing information for FDA-approved indications.

All materials are included with the permission of the faculty. The opinions expressed are those of the faculty and are not to be construed as those of UNMC.

Disclosures

The accredited provider has mitigated and is disclosing identified relevant financial relationships for the following faculty, planners, and others in control of content prior to assuming their roles:

FACULTY

The below faculty have nothing to disclose:

- Shirley Delair, MD, MPh
- Gale Etherton, MD, FACP
- Andrea Jones, MD
- Mahelet Kebede, MPH*
- Mahliqha Qasimyar, MD
- Jeff Wetherhold, M.Ed*

**Indicates on the planning committee*

Disclosures

PLANNING COMMITTEE

M. Salman Ashraf, MBBS
Merck & Co, Inc: Industry funded research/investigator

Nada Fadul, MD
ViiV Healthcare: Advisory Committee/Board

Erica Stohs, MD, MPH
ReViral Ltd.: Industry funded research/investigator

The below planning committee members have nothing to disclose:

- Valeta Creason-Wahl, HMCC
- Precious Davis, MSN, BSN, RN
- Samantha Jones, CSW
- Nuha Mirghani, MD, MBA, HCM
- Renee Paulin, MSN, RN, CWOCN
- Bailey Wrenn, MA

www.unmc.edu/cce

POLL

Current State of COVID-19 in Nebraska

Nebraska Statistics

Cases

DAILY NEW CASES
47.7 PER 100K

INFECTION RATE
1.01

POSITIVE TEST RATE
16.2%

COUNTY POPULATION	DAILY NEW CASES PER 100K	INFECTION RATE	POSITIVE TEST RATE
1 Douglas Co. 570,000	48.7	1.04	17.0%
2 Lancaster Co. 320,000	51.0	1.05	7.2%
3 Sarpy Co. 190,000	53.3	1.00	16.2%
4 Hall Co. 61,000	39.6	0.98	17.9%
5 Buffalo Co. 50,000	53.5	0.95	23.4%

Project ECHO

Accessed 12/14/21. https://covidactnow.org/us/nebraska-ne/?s=24951410

Nebraska Statistics

Week	Daily New Cases/ 100K	Infection Rate	Positive Test Rate	Number of Hospitalizations	ICU Capacity Used	*Vaccinated 1+
11/01/21	29.6	1.03	12.8%	413	80%	61%
11/15/21	44.0	1.15	14.8%	455	86%	62%
12/1/21	38.1	0.94	17.6%	545	80%	64%
12/15/21	47.4	1.01	16.2%	637	85%	65%

*Percent of the entire state population vaccinated, regardless of eligibility/age.

https://covidactnow.org/us/nebraska-ne/?s=24951410
https://datanexus-dhhs.ne.gov/views/Covid/1_DailyCharts?%3AisGuestRedirectFromVizportal=y&%3Aembed=y

Nebraska Hospital Capacity & Respiratory Illness Dashboard | Nebraska DHHS

Data updated through: 12/13/2021

COVID-19 Cases

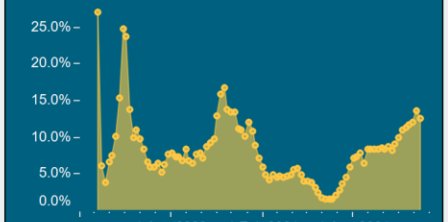
Total Positive Cases
323,698

Total Tests
4,316,349

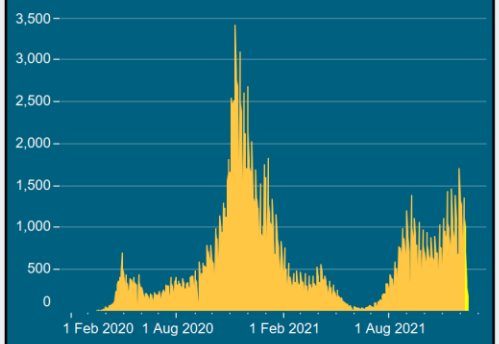
Active Hospitalizations
637

Deaths
2,736

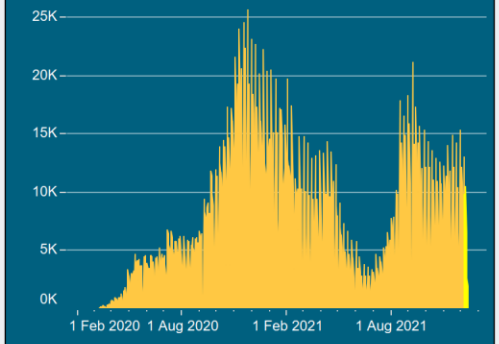
Weekly % Positive by Specimen Date
Non-Null Values Only



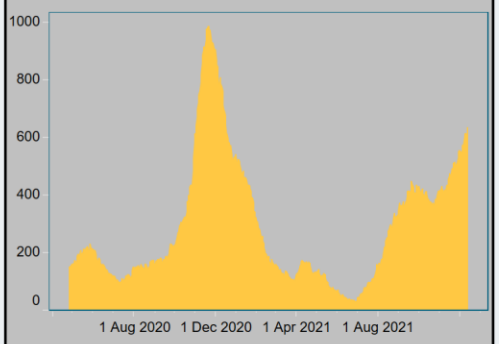
Positive Cases by Specimen Date
Non-Null Values Only



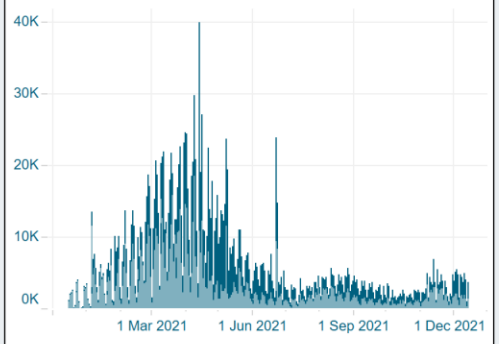
Test by Specimen Date
Non-Null Values Only



COVID-19 Active Hospitalizations
Non-Null Values Only



Daily New Vaccinations Administered
Non-Null Values Only



COVID-19 Vaccinations

Total Allocations
3,085,985

Total Administered
2,318,942

People

Fully Vaccinated
1,132,647

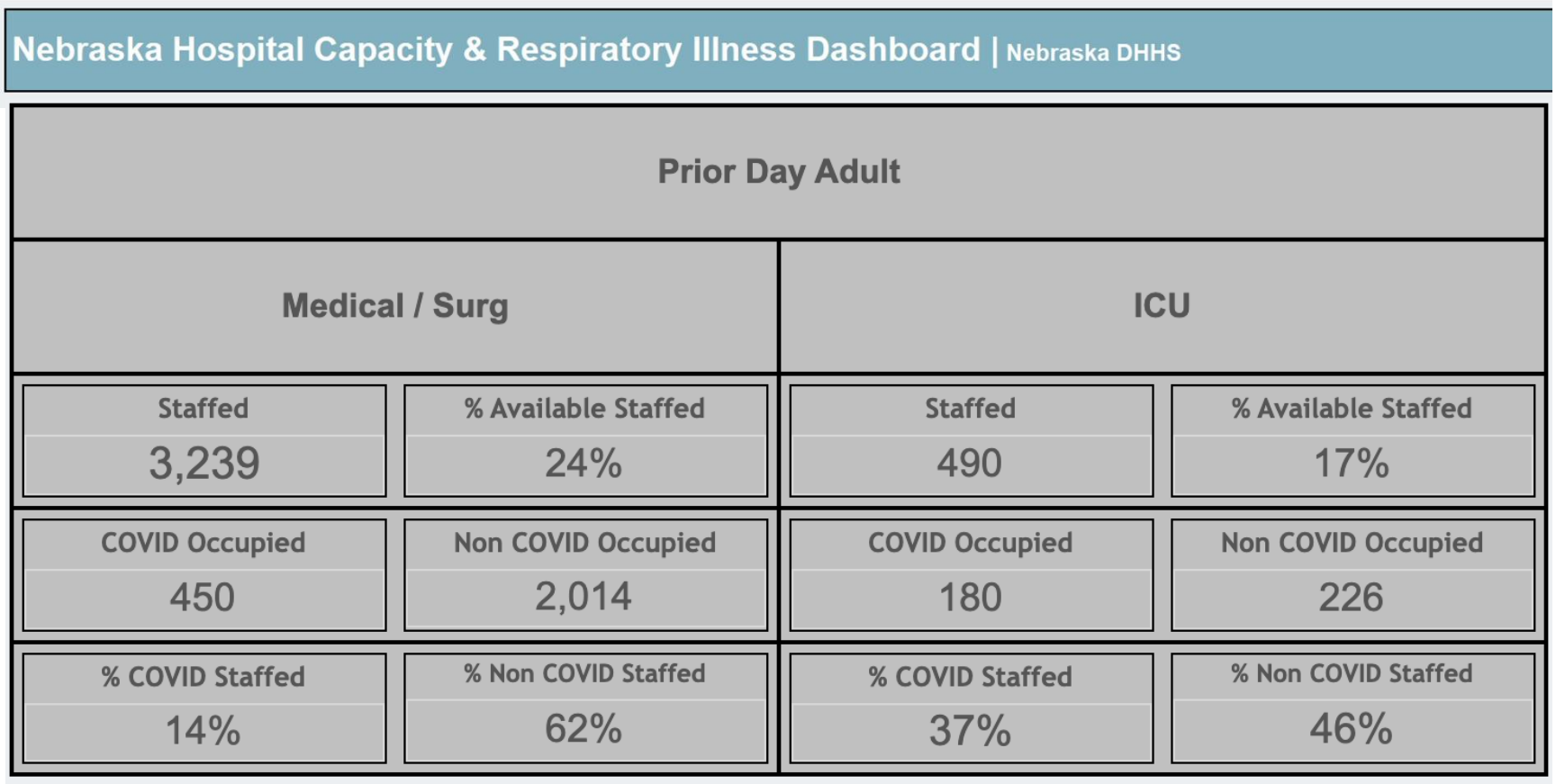
Partially Vaccinated
111,819

% Fully Vaccinated
63.88%

% Partially Vaccinated
6.31%

1.77 M People Ages 5+

Nebraska Statistics



Nebraska Hospital Capacity & Respiratory Illness Dashboard | Nebraska DHHS

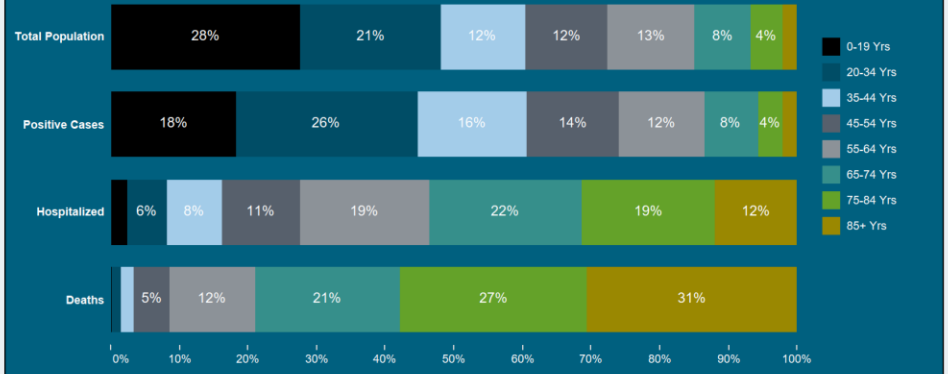
Prior Day Adult			
Medical / Surg		**ICU**	
Staffed	**% Available Staffed**	**Staffed**	**% Available Staffed**
3,239	24%	490	17%
COVID Occupied	**Non COVID Occupied**	**COVID Occupied**	**Non COVID Occupied**
450	2,014	180	226
% COVID Staffed	**% Non COVID Staffed**	**% COVID Staffed**	**% Non COVID Staffed**
14%	62%	37%	46%

https://datanexus-dhhs.ne.gov/views/Covid/1_DailyCharts?%3AisGuestRedirectFromVizportal=y&%3Aembed=y

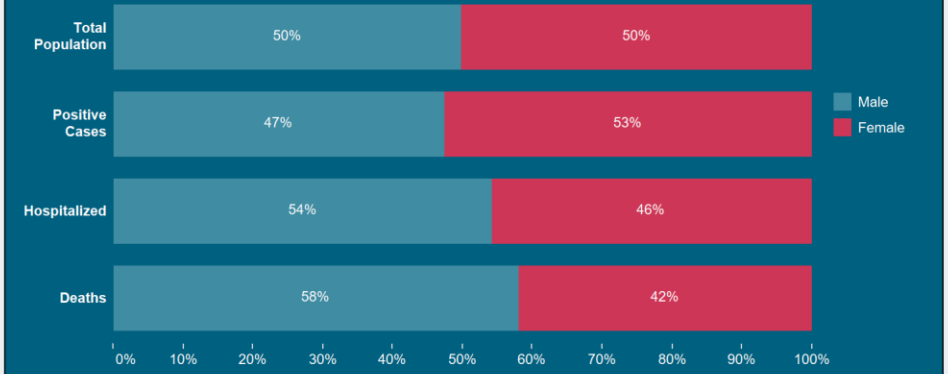
Nebraska Hospital Capacity Dashboard | Nebraska DHHS

Data updated through: 12/13/2021

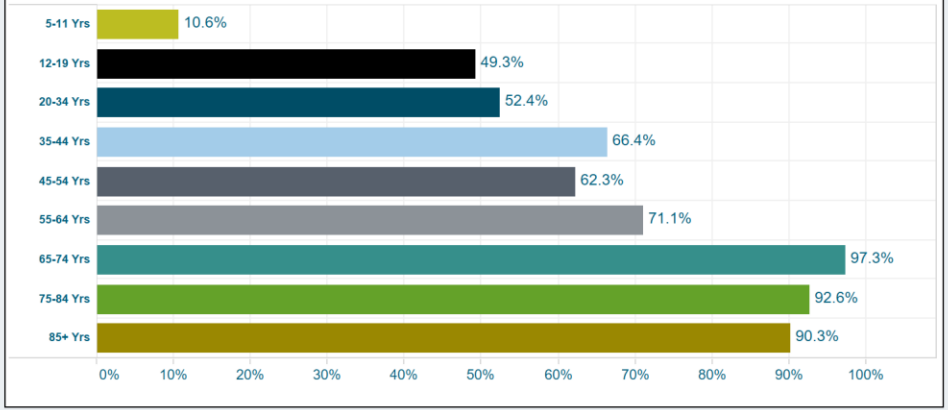
Comparison of the Effects of COVID-19 on Age Group Populations



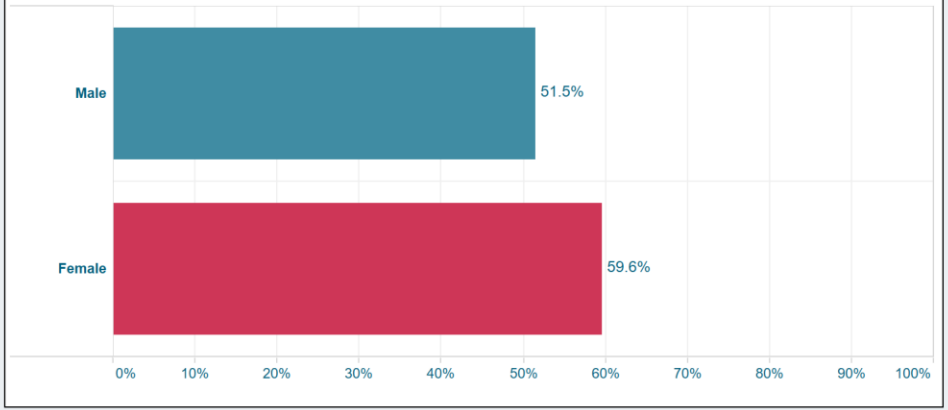
Comparison of the Effects of COVID-19 on Gender Group



Percentage of Age Group Fully Vaccinated



Percentage of Gender Group Fully Vaccinated

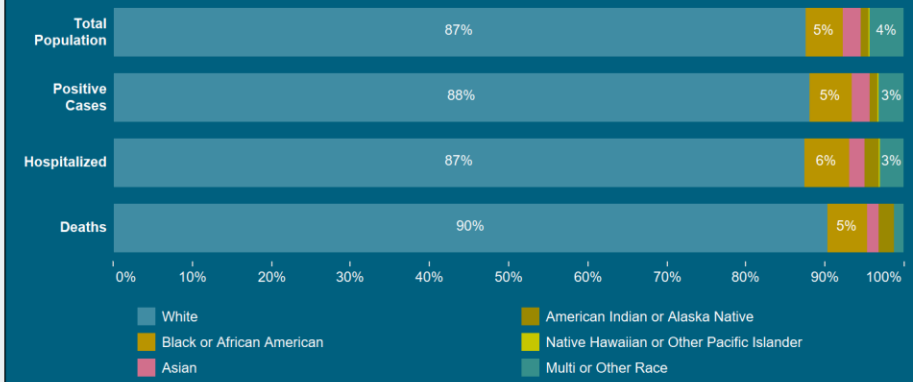


Hospital Capacity | LHD Statistics Map | COVID-19 | County Statistics Map | Age & Gender | Race & Ethnicity | Influenza | RSV | About the Data

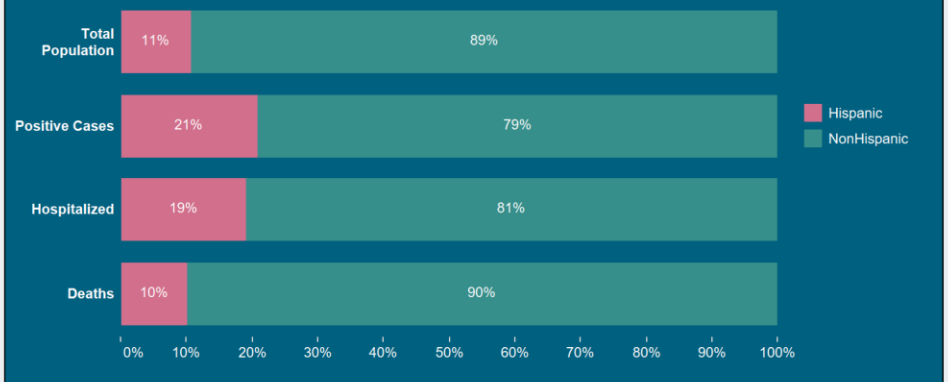
Nebraska Hospital Capacity Dashboard | Nebraska DHHS

Data updated through: 12/13/2021

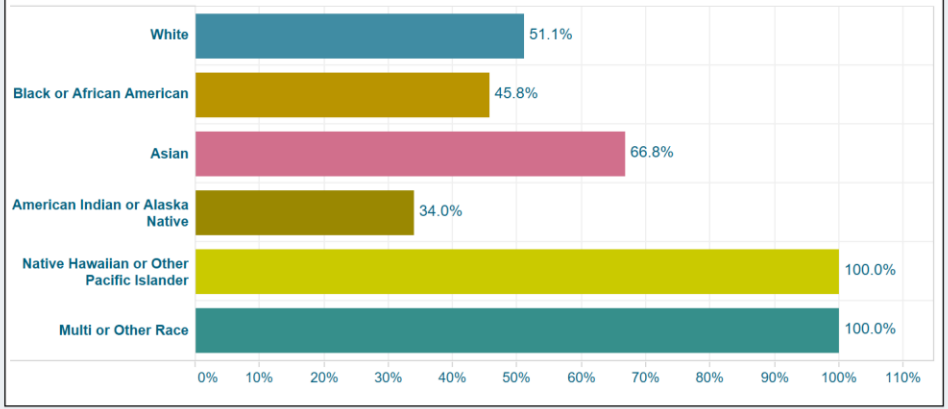
Comparison of the Effects of COVID-19 on Racial Groups



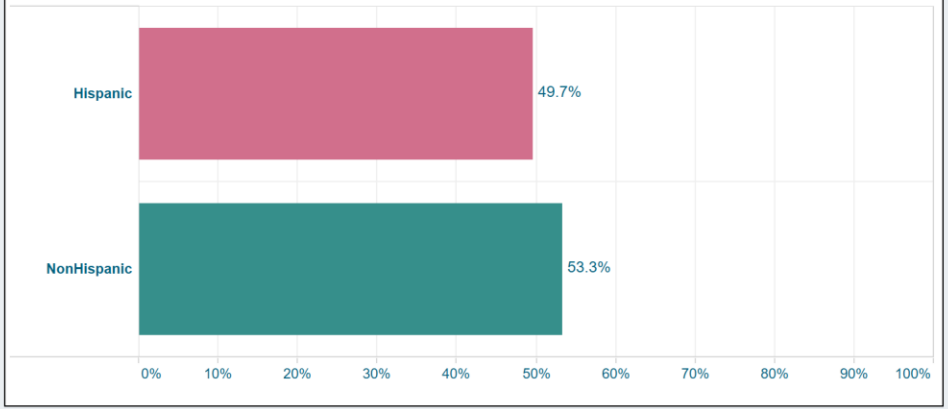
Comparison of the Effect of COVID-19 on Ethnic Groups



Percentage of Racial Group Fully Vaccinated



Percentage of Ethnic Group Fully Vaccinated



COVID-19 Update: Omicron Variant

- Detected in 34 states including Nebraska
- Represents 3% of US cases (13% in NY, NJ)
- More transmissible than delta variant; eventually will predominate
- Unclear severity of illness
- Therapeutics & vaccine effectiveness under investigation
  - Boosters increase neutralizing antibodies; approved for kids
  - Monoclonal effectiveness under investigation; +Sotrovimab

- Other COVID-19 Therapeutics:
  - Pfizer Paxlovid (↓ hospitalization by 89%)
  - Merck molnupiravir (↓ hospitalization by 30%)

Debrief

For our previous session:

What have you done, or do you hope to do, with this content?

For today's session:

Do you have questions or concerns that we can address?

Health Equity – Historical Context

Presenters: Dr. Jasmine Marcelin and Mahelet Kebede, MPH

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Objectives

1. List a historical example of medical racism.
2. Recognize the present-day impact of historical medical experimentation.

No strangers to disparities and health inequity

HISTORICAL CASE EXAMPLES OF INEQUITIES

Indigenous Sterilization

1976: Government admits unauthorized sterilization of Indigenous Women

A study by the U.S. General Accounting Office finds that 4 of the 12 Indian Health Service regions sterilized 3,406 American Indian women without their permission between 1973 and 1976.

Two years earlier, an independent study by Dr. Connie Pinkerton-Uri, Choctaw/Cherokee, found that one in four American Indian women had been sterilized without her consent.

Pinkerton-Uri's research indicated that the Indian Health Service had "singled out full-blooded Indian women for sterilization procedures."

LGBTQIA+ Treatment

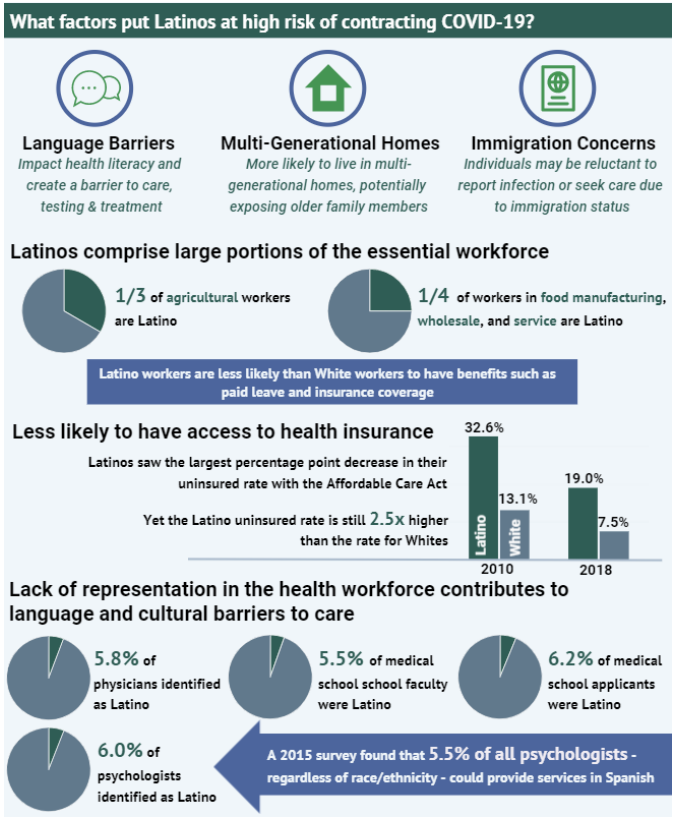
Cured: https://www.cureddocumentary.com/

Reflection

Thoughts on the trailer?

Latinx/Hispanic Communities

Systemic racism is a key factor explaining the unequal social, political, and economic opportunities for the nation's 60 million Latinx individuals.



Education

Employment

Immigration

Health

Voting

The Wealth Gap

History has its eyes on you

Structural Racism and Medicine

@DrJRMarcelin

	How race is used	Rationale for race-based management	Potential harm
eGFR[6]	eGFR for Black patients is multiplied by 1·16–1·21 the eGFR for White patients, depending on the equation used	Black patients are presumed to have higher muscle mass and creatinine generation rate than patients of other races	Black patients might experience delayed dialysis and transplant referral[8,9]
BMI risk for diabetes[7]	Asian patients considered at risk for diabetes at BMI ≥23 *vs* 25 for patients of other races	Asian patients are presumed to develop more visceral than peripheral adiposity than patients of other races at similar BMI levels, increasing risk for insulin resistance[7]	Asian patients screened for diabetes despite absence of other risk factors might experience increased stigma and distrust of medical providers[11]
FRAX[13]	Probability of fracture is adjusted according to geography or minority status, or both	Different geographical and ethnic minority populations are presumed to have varied relative risks for fracture on the basis of epidemiological data	Some populations, including Black women, might be less likely to be screened for osteoporosis than other populations[14]
PFT[16]	Reference values for pulmonary function are adjusted for race and ethnicity	Racial and ethnic minority groups are presumed to have varied lung function on the basis of epidemiological data	Black patients might experience increased difficulty obtaining disability support for pulmonary disease[17]
JNC 8 Hypertension Guidelines[19]	Treatment algorithm provides alternate pathways for Black and non-Black patients	ACE-inhibitor use associated with higher risk of stroke and poorer control of blood pressure in Black patients than in patients of other races	Black patients might be less likely to achieve hypertension control and require multiple antihypertensive agents[20]

From race-based to race-conscious medicine: how anti-racist uprisings call us to act
Cerdeña, Jessica P et al. The Lancet, Volume 396, Issue 10257, 1125 - 1128

The problem with race-based medicine

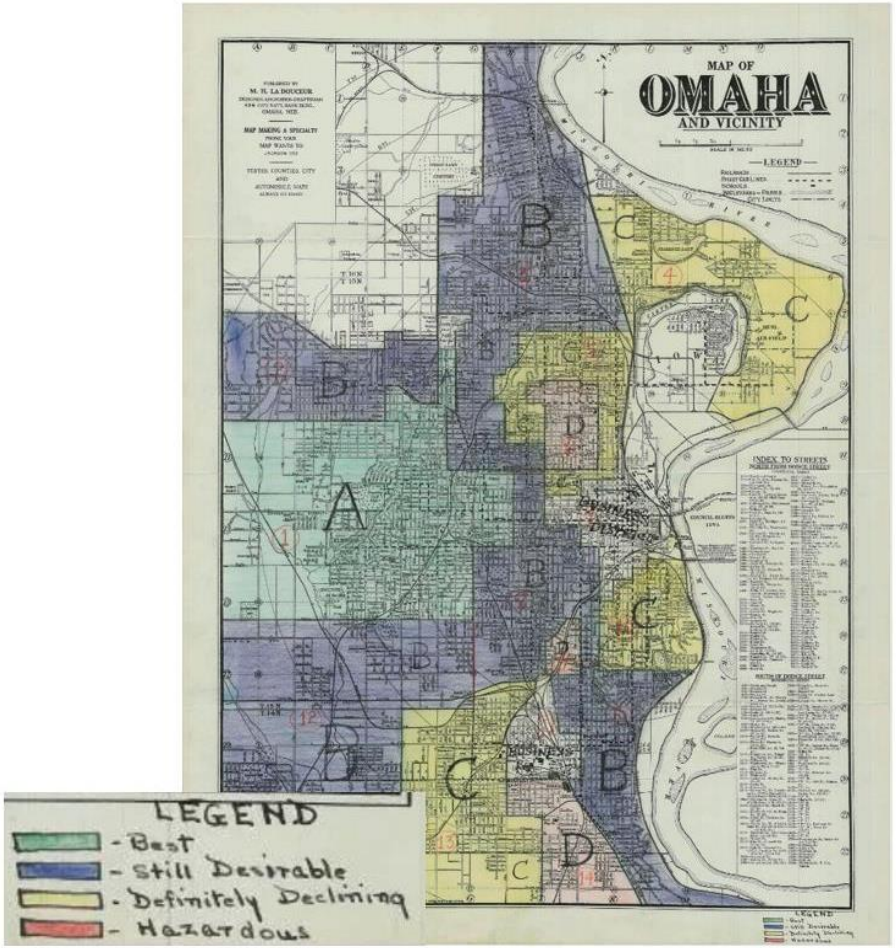
Disparities in Health Care – A Long History

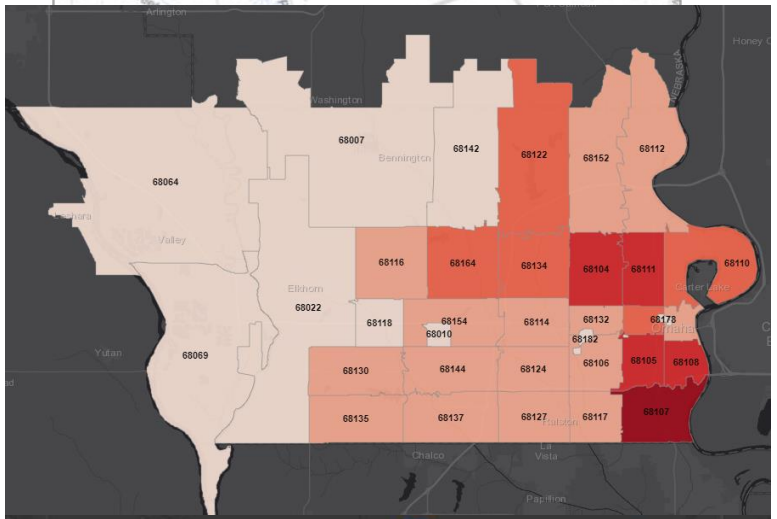
1918 Influenza Pandemic:
Historical Precedent
for Racial/Ethnic Disparities in
Pandemic Healthcare Delivery

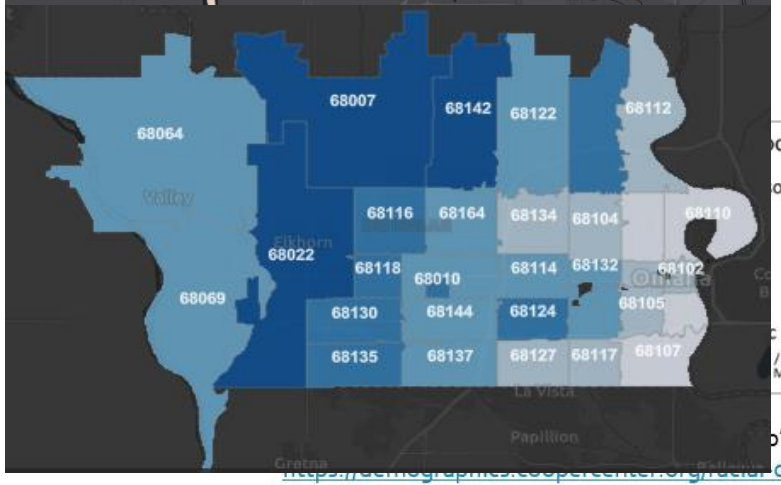
- Segregated hospitals; Lower quality care; Inadequate supplies
- Stigma and blaming pandemic on migrating Black families
- Overcrowded living conditions

Factors Contributing to Inequities

Redlining

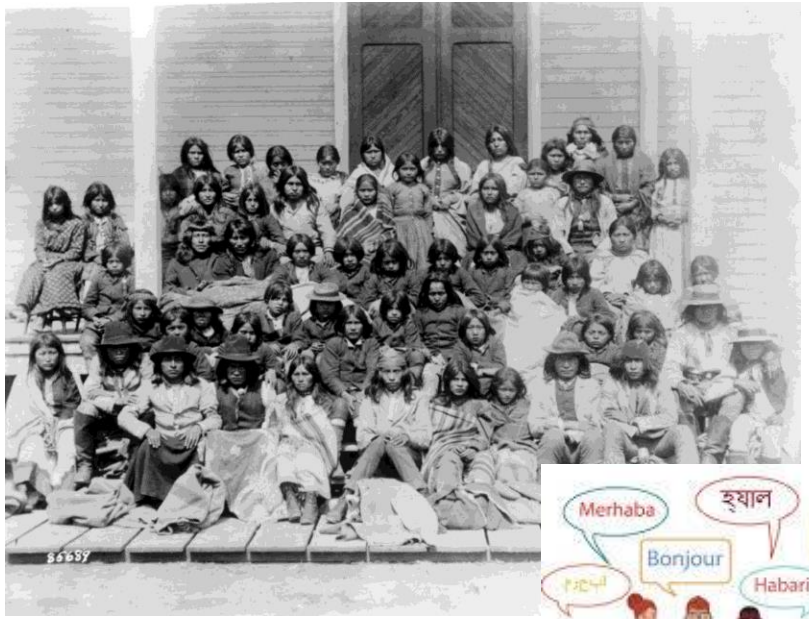




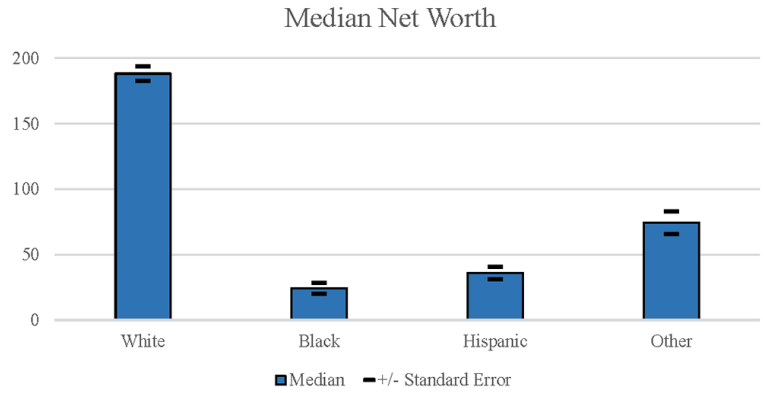


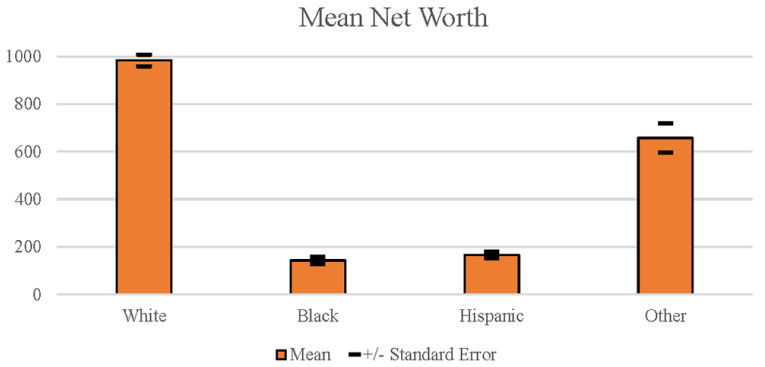
Fletcher-Sasse, A. "A History of Redlining in Omaha" (2015), https://northomahahistory.com/2015/08/02/a-history-of-red-lining-in-north-omaha/

Education



Racial Wealth Gap





Findings from the Federal Reserve Board's 2019 Survey of Consumer Finance.

This data observation is a result of many complex **societal, governmental, and individual factors** that play out over the life cycle and even across generations.

Source: Federal Reserve Board, 2019 Survey of Consumer Finances.

Social Determinants of Health

Source: [CDC Website]

Quality Improvement: Systems Thinking and Human Factors

Presenters: Jeff Wetherhold, Gale Etherton, MD, Mahliqha Qasimyar, MD

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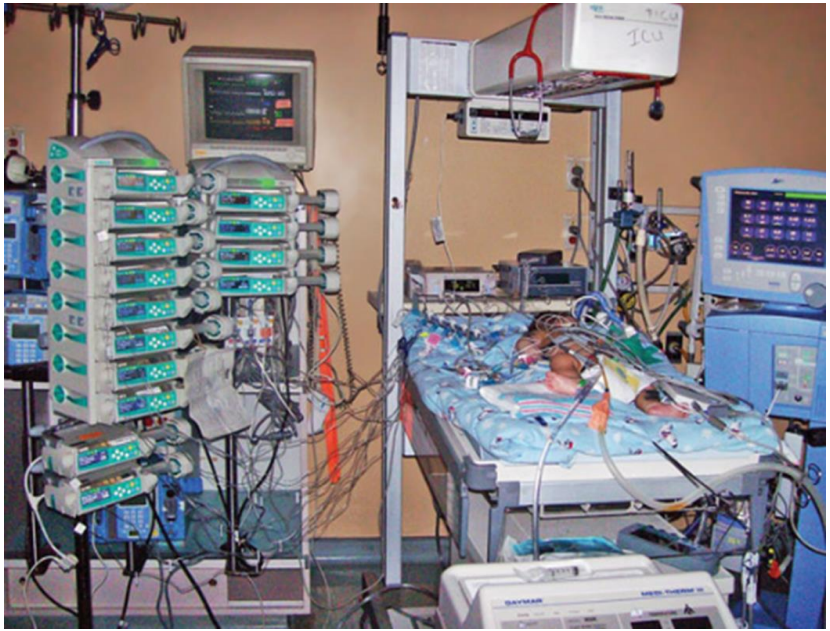
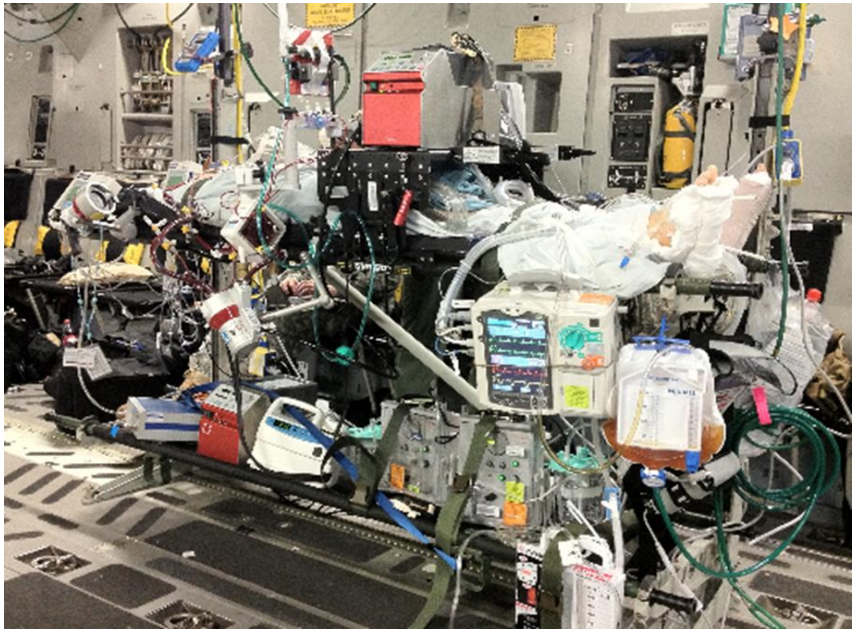
Objectives

Quality Improvement

1. Describe systems-based thinking and how this relates to the Swiss Cheese Model
2. Explain the role of human factors in processes

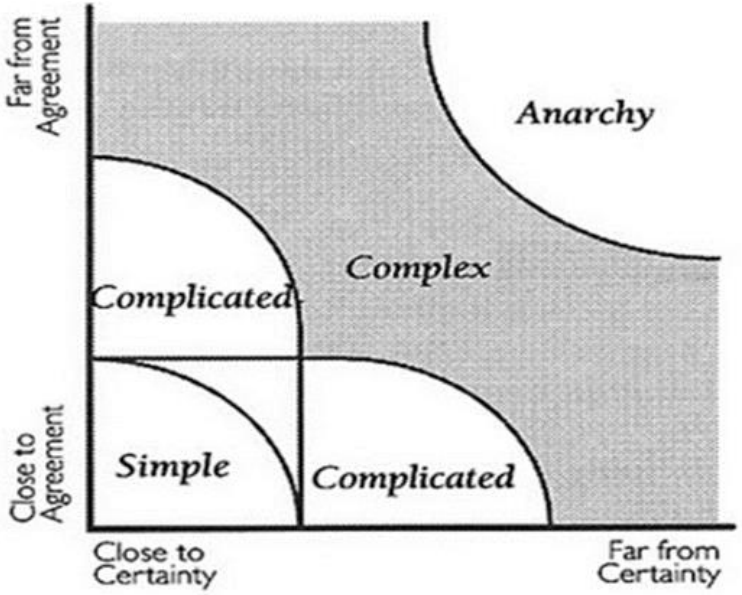
- Medicine used to be simple, ineffective and relatively safe





- Medicine is now complex, effective and potentially dangerous

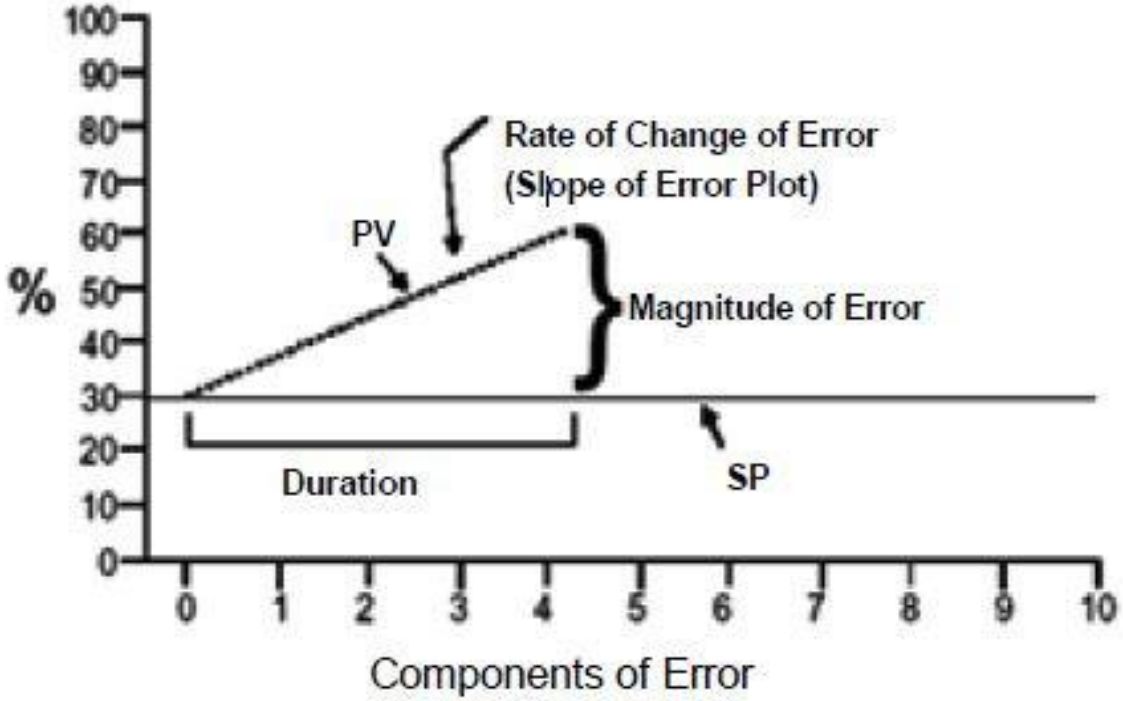
Systems-based Thinking



Ralph Stacey, PhD

- The study of complexity and the relationships and interactions among components of a system
  - The sum of its parts are more than the whole

System Error Rates



Human Error Rates

	Error rate (per task)		
	Read/ reason	*Physical operation*	*Everyday yardstick*
Routine simple task			
Read a checklist or digital display wrongly	0.001		
Set switch (multiposition) wrongly		0.001	
Calibrate dial by potentiometer wrongly		0.002	
Check for wrong indicator in an array	0.003		
Wrongly carry out visual inspection for a defined criterion (e.g. leak)	0.003		
Fail to correctly replace PCB		0.004	
Select wrong switch among similar		0.005	
Complicated non-routine task			
Fail to notice adverse indicator when reaching for wrong switch or item	0.1		
Fail to recognize incorrect status in roving inspection	0.1		
New workshift – fail to check hardware, unless specified	0.1		
General (high stress)	0.25		
Fail to notice wrong position of valves	0.5		
Fail to act correctly after 1 min in emergency situation	0.9		

In failure rate terms the incident rate in a plant is likely to be in the range of 20×10^{-6} per h (general human error) to 1×10^{-6} per h (safety-related incident).

Source: Smith, Dr David J., *'Reliability and Maintainability and Risk'*, Extracts from Appendix 6, 7th Edition, Elsevier, 2005

Human Factors

- All errors have human components and system components
- How humans interact with that system is the study of human factors

Social Determinants of Health

Healthcare Access and Quality	Education Access and Quality	Social and Community Context	Economic Stability	Neighborhood and Built Environment
• Access to healthcare • Access to primary care • Health insurance coverage • Health literacy	• Early childhood education and development • Graduation from high school • Enrollment in higher education • Language, literacy	• Cohesion within community • Civic participation • Discrimination • Workplace conditions • Incarceration	• Poverty • Employment • Food security • Housing stability	• Housing quality • Access to transportation • Availability of healthy foods • Air and water quality • Neighborhood crime and violence

ERROR CLASSIFICATION

ENVIRONMENT	
Climate/Culture	**Physical Environment**
• Attitudes and actions allow unsafe acts • Overconfident or underconfident	• Concentration, vision, hearing or movement impaired

LEADERSHIP	
Operational Planning	**Supervisory Ethics**
• No provision for adequate training » Role/responsibilities not defined » Rule/policies and/or procedure not defined • Failure to correct known and/or identified problems • Employees not fully aware or capable of work to be done • No formal team training provided	• Permits workers to perform tasks outside of scope and licensure or qualification

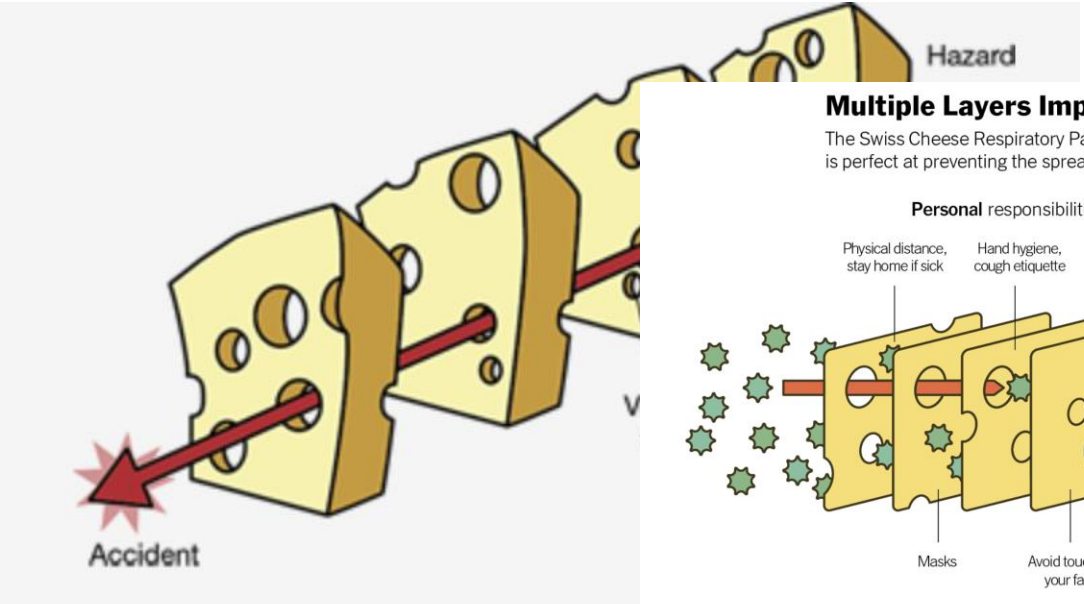
ERROR CLASSIFICATION

HUMAN FACTORS			
Information Technology	**Equipment**	**Scheduling**	**Resources**
• Computer hardware or software problems • EMR issues • Information security issues	• Usability issue • Warning system or automated system issues • Biomed interface problems: hardware or software	• Fatigue • Rushed or delayed necessary action • Task overload • Competing priorities	• Failure to use available resources • Appropriate resources not available when needed • Appropriate resources not purchased, funded • Failure to remove defective resource

HUMAN FACTORS		
Training	**Training**	**Failure Mechanism of Communication**
• Improper use of equipment • Inadequate report provided • Inadequate maintenance of equipment	• Procedure or checklist not followed • Wrong procedure or tool chosen for task • Team training failure (Team trained but failed) » Poor team dynamics » Team specific coordination failures » Team specific communication failures (Occasion | Audience | Content | Purpose)	• Confidentiality lost • Conveyance poor (written, electronic or verbal)

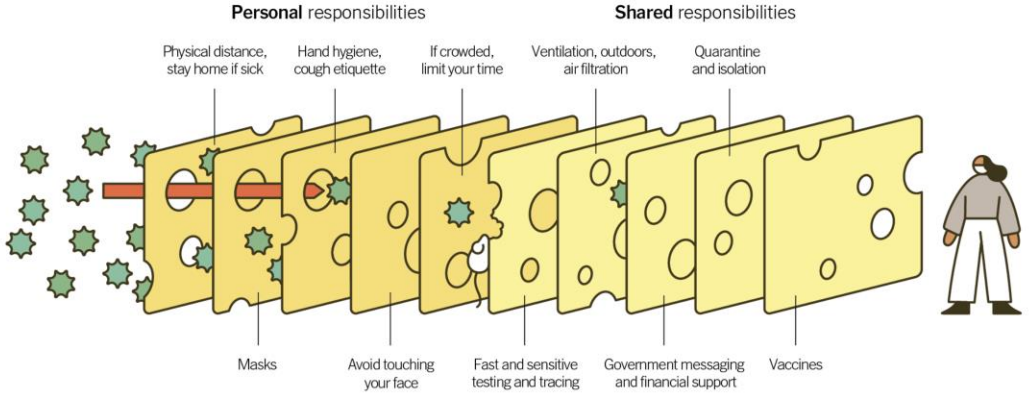
VA | U.S. Department of Veterans Affairs
Veterans Health Administration
Nebraska-Western Iowa Health Care System

Swiss Cheese Model



Multiple Layers Improve Success

The Swiss Cheese Respiratory Pandemic Defense recognizes that no single intervention is perfect at preventing the spread of the coronavirus. Each intervention (layer) has holes.



Source: Adapted from Ian M. Mackay (virologydownunder.com) and James T. Reason. Illustration by Rose Wong

NA

By Siobhan Roberts

Published Dec. 5, 2020 Updated Dec. 7, 2020

Standardization

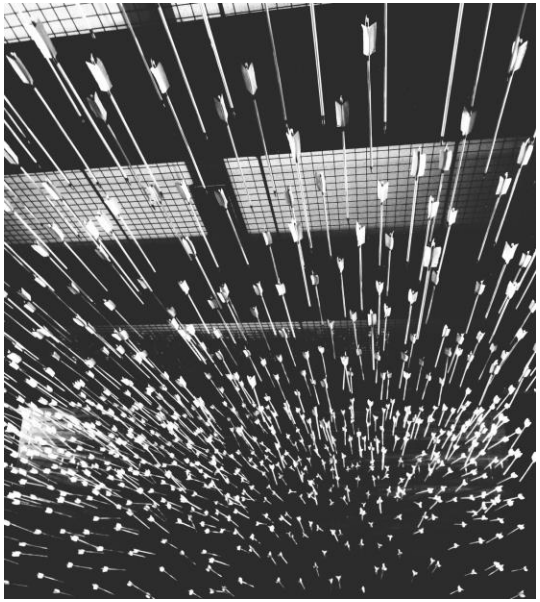
- Complex systems are more than the sum of simple tasks
- Standardization and protocolization of simple tasks can help improve the overall outcome
    - Minimize variability in care
    - Minimize variability in cost
- Allows you to get right some pieces of the puzzle in a complex system

Makes your processes more reliable and less prone to error

Reliability ≠ Perfection

To achieve reliability, we need to:

- Understand why processes are frequently unreliable
- Accept that attempts to create perfect processes keep us from creating reliable processes
- Build a toolkit for QI that is simple, applicable, and requires few resources



Next QI Session

February 2022

- Will provide more in-depth didactics and discussion about QI tools and how to use them

Case Study

Project ECHO®

UNMC

Case Study

You are a provider having a conversation about COVID vaccination with a patient in their 40s. They are healthy but have a family member who passed away from COVID last year. They are hesitant to be vaccinated because the vaccine was “developed too fast” and they are worried it is "experimental."

1. What systems-level barriers might be relevant?
2. What human factors might contribute to their hesitance?
3. How might these differ depending on their values or beliefs?

*SDOH & HF Linked

Human Factors: Information, Technology & Equipment	Human Factors: Scheduling	Human Factors: Communication	Human Factors: Resources	Human Factors: Training	Environment: Climate & Culture	Environment: Physical Environment	Leadership
• Limited or lack of access to reliable data sources	• Public briefings held during work/school hours • Vaccine clinics scheduled during work/school hours	• Information not provided in preferred format or language	• Multiple data sources, potentially conflicting • Lack of healthcare access • Limited financial resources	• Health literacy	• Individual freedoms v public health • Religious beliefs • Individual v family or community-oriented decision making • Implicit and explicit biases	• Vaccination sites not locally accessible • Workplace conditions	• Inconsistent messages from CDC, others • Clear, complete & updated info not provided • Historical mistreatment by US govt and healthcare system

*Key
SDOH = Social Determinants of Health
HF = Human Factors

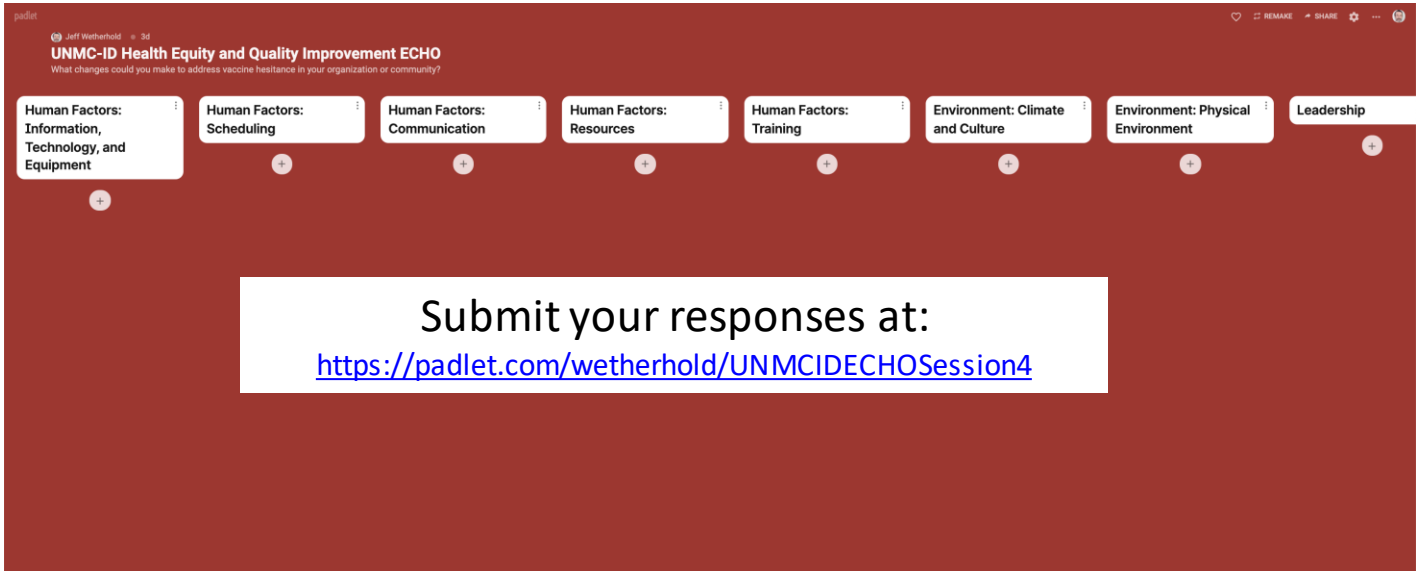
POLL

Project ECHO®

UNMC

What can you do in the next three weeks?

Identify changes you can make to address vaccine hesitance



Wrap-Up

1. You will receive today's presentation, in addition to a one-page key-takeaways document and next session's agenda through email.

2. Next session will be on January 5th on *"**Long Term Complications of COVID-19 Infection; Cultural Attitudes - time, space, group dynamics, authority, tasks, relationships (part 2/3)**"*.

3. If you'd like to share a case with us, kindly send it by Monday, January 3rd.

Thank You