



NCATS supplemental grant

- From Sept 2020 to Sept 2022, NCATS awarded CTSI with a \$5M grant to perform “Randomized COVID-19 Testing in Vulnerable Communities and Risk Tool Creation”
- Project is called “**Fight COVID MKE**”
- **Co-PIs**
 - John Meurer, MD, Director of MCW Institute for Health & Equity
 - Bernie Black, JD, MS, Northwestern U
 - Reza Shaker, Director of MCW CTSI



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RADx Underserved Populations (RADx-UP)

RADx-UP will work to **understand and reduce disparities for vulnerable populations** who are disproportionately affected by COVID-19.





Aim 1

- Use randomized **COVID antibody testing** in Milwaukee to measure the population proportion infected and how this proportion varies over time and with **patient demographic and health characteristics**.
- Partner with 20 primary care health centers and with local churches to conduct **community outreach and engagement** and oversample minority, poor, and elderly populations to obtain more precise estimates for these groups



Aim 1 major activities

- **MCW IRB reliance** by 3 community health centers, Northwestern and Indiana universities, and William & Mary College
- **Research agreements** with 20 primary care health centers, 3 community agencies, and 2 faith conventions/jurisdictions (80 churches)
- <https://fightcovidmilwaukee.org/>: **REDCap** eligibility, consent and survey forms in English and Spanish
- 72 diverse adults participated in **focus groups** about communicating COVID risks and vaccine benefits/risks; plan focus groups of Muslim men and women groups, clinicians, media reporters and producers, and public health officials
- **Community Advisory Board** with 7 diverse leaders
- **Collaborate** with 5 other community agencies, 11 local public health departments, philanthropic Civic Action Teams, and CTSI All of Us Research program



Preliminary survey results (n = 1,880)

- **Age:** average 59, range 18-89
- 66% female
- **Race/ethnicity**
 - 71% White
 - 19% Black/African American
 - 8% Hispanic/Latinx
 - 4% Asian, 3% Mixed
- **Health insurance**
 - 54% Medicare
 - 29% Employer-sponsored private
 - 16% Medicaid



Self-reported health

- General health:
 - 51% excellent/very good; 15% fair/poor
- **40% high blood pressure, 26% depression** (9% currently depressed), **26% diabetes**, 20% asthma, 18% cancer
- 9% take medicine or get treatment that may affect immune system
- 8% smoke cigarettes now
- 1% problem with alcohol or drug abuse



Personal, household and family experiences with COVID

- **17% had positive COVID infection test; 82% of them always stayed at home after infected**
- **91% received a COVID vaccine**
- Wear a face mask indoors when outside their home: 69% always/almost always, 10% seldom/never
- **9% have symptoms > 3 months** that they think are from COVID such as fatigue, short of breath, anxiety, and sleep problems
- **11% had someone who lives with them had COVID; 1% of spouses/roommates were hospitalized for COVID; 2 died**
- 39% had someone in their family living outside their home who had COVID; 10% of family members were hospitalized for COVID; **6% have 107 family members who died of COVID**

Selected significant survey results by age

	18-64 years (n = 842)	65+ years (n = 991)
Positive COVID test	20%	13%
Received COVID vaccine	86%	96%
Someone living with you had COVID	15%	6%
Someone in your family living outside your home was hospitalized for COVID	15%	6%
Black/African American; Hispanic/Latinx	30%; 14%	8%; 2%
Covered by Medicaid in last 3 years	34%	5%
Hypertension or high blood pressure	23%	55%
Cancer	8%	27%
Depression (current)	35% (14%)	19% (5%)
Health care worker	28%	15%

Selected significant survey results by race/ethnicity

	White (n = 1,262)	BIPOC (n = 618)
Had positive COVID test	13%	23%
Received a COVID vaccine	94%	85%
Someone living with you had COVID	8%	16%
Someone in your family living outside your home had COVID	36%	45%
Family member passed away from COVID	4%	10%
Average age at enrollment	64 years	48 years
Graduated from college	67%	56%
Covered by Medicaid in last 3 years	14%	30%
Diabetes	12%	20%
Cancer	23%	9%

Selected significant survey results by COVID infection

	No COVID infection (n = 1,661)	Past COVID infection (n = 219)
Received COVID vaccine	92%	81%
Someone who lives with you had COVID	5%	53%
Family living outside your home had COVID	37%	55%
Black/African American; Hispanic/Latinx	17%; 7%	28%; 13%
Cancer	19%	13%
Insured by Medicare	56%	38%
Health care worker	24%	36%
Moved in the past 12 months	9%	19%



Aim 1 key outcomes

- Number of antibody/survey study participants enrolled March 23 to Nov 17:
2,557 consents and 2,493 surveys
- **1,834 baseline blood draws** and 622 follow ups
 - Lab report delay due to IS change
 - 1,440 capsid antibody tests (**7% positive = past infection**)
 - 1,240 spike protein antibody tests (**94% positive including response to vaccines**)
- Preliminary results from **6 community focus groups**
 - Recommended **use charts** instead of data tables for COVID risk estimator; liked our comparison of COVID risk of death relative to cancer, car crashes, and flu/pneumonia
 - **White groups** generally felt safe with vaccines, interested in antibody protection, frustrated with people who refuse vaccines
 - **African American groups** generally noted medical mistrust due to historical occurrences, need for representation in research, more personal and family adverse impact of COVID infections



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Aim 2

Use extensive **data linkages** to assess risks for infection to progress to symptoms, hospitalization, ICU stay, or death, and corresponding population rates as a function of patient and community characteristics



Aim 2 major activities

- **WI Dept of Health Services data use agreements** with MCW and NU for all MKE County adults for records since 2018 for COVID viral test results, COVID and influenza vaccines, Medicaid claims, and death records (statewide)
- Froedtert, 2 family health centers at Ascension, Progressive and Outreach community health centers agreed to share **EHR for all adult patients in MKE** since 2018 (16th St CHC will provide EHR data for all consenting patients)
- CTSI programmers use Datavant to link surveys, antibody results, and EHR to county data, then send **deidentified linked data** to NU for analyses and to Duke Data Coordinating Center for NIH data sharing



Data Sources: # Adults in Milwaukee County

- Population: 720,000
- **COVID 1+ vaccines: 508,000 (70% of the population)**
- Influenza vaccine: 280,000 (40%)
- Positive **COVID cases: 143,000 (20%)**
- Negative COVID tests: 662,000
- **Medicaid enrollees: 257,000 (36%)**
- Froedtert primary care BIPOC or publicly insured patients: 81,000 (11%)
- FQHC and Ascension/MCW Family Med patients: 106,000 (15%)
- MKE to date: 1,600 **COVID deaths (1 out of 500 adults)**
- **WI 2020: 5,700 COVID (9%) / 62,000 total deaths**



Aim 2 key outcomes

- Built **COVID risk calculator**, using mortality data from MKE and Cook counties, Indiana, and 5% of Medicare claims
- Linked mortality, demographic and health data and used data from the American Community Survey at zip code level
- COVID-19 Pandemic and Life Expectancy: Decomposition Using Individual-Level Mortality Data
<http://ssrn.com/abstract=3795801>
- Data and Methodology Documentation for a COVID-19 Risk Calculator: **Mortality Rates and Loss of Life Expectancy**
<http://ssrn.com/abstract=3795802>
- **One of best COVID risk estimators** (data to 9/21 soon, compare vax vs unvax; compare Hopkins and Oxford)



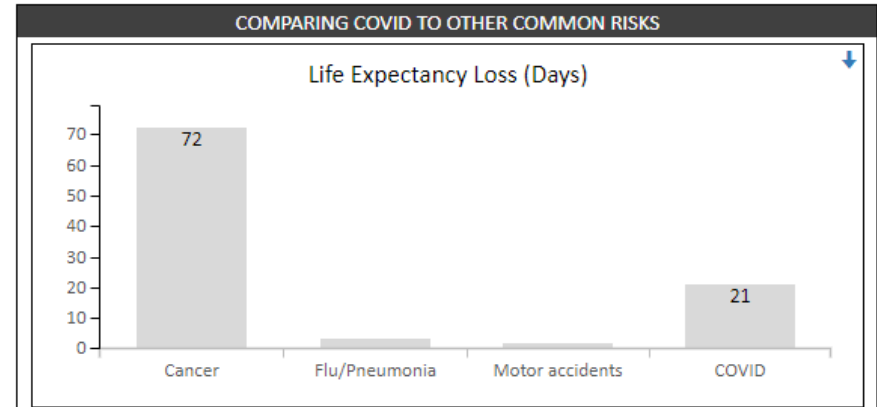
Aim 3

- Use the **risk assessment tool** to estimate individual risk, work with community partners to encourage vaccination of higher risk individuals; measure **antibody response to vaccination**
- <https://fightcovidmilwaukee.org/individual-risk-estimator>
- <https://fightcovidmilwaukee.org/group-risk-comparison>
- From March 19 – Nov 17, **website** has had **16,800** sessions with **6,200** COVID individual **risk estimator** hits

BASIC DATA (please fill in)	
Age (Years)	65
Sex	Male ▼
Race/Ethnicity	Black ▼
ZIP Code where you live	53206

HEALTH DATA (please fill in)	
Height (feet and inches)	5 9
Weight (pounds)	200
Has a physician ever told you that you have:	
Diabetes	Yes ▼
High Blood Pressure	Yes ▼
Coronary Artery Disease	No ▼
COPD or Other Lung Disease	No ▼
Kidney Disease	No ▼
Cancer	No ▼
Heart Failure	No ▼
Stroke	No ▼
Dementia	No ▼

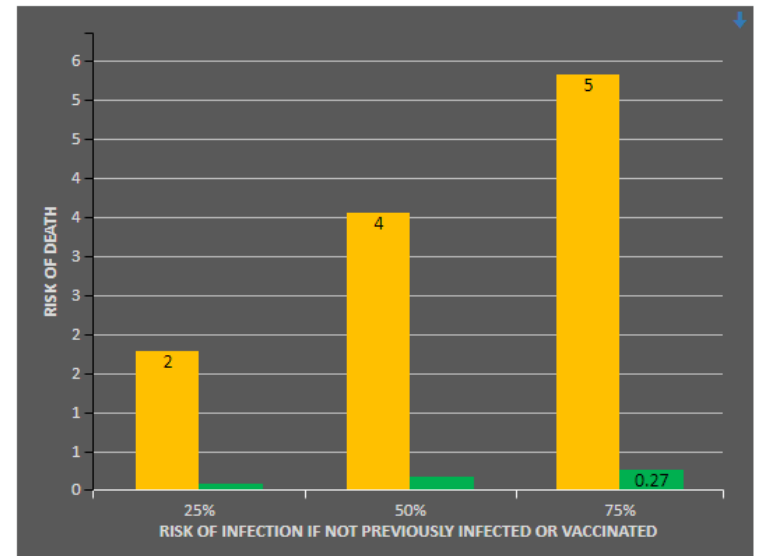
<https://fightcovidmilwaukee.org/individual-risk-estimator>



Life expectancy loss for COVID is over March 1, 2020- July 1, 2021

Life expectancy loss for other causes is risk over one year

RISK OF DEATH FROM COVID FOR PEOPLE LIKE YOU (OUT OF 1,000)



Not previously infected or vaccinated | Previously infected or vaccinated

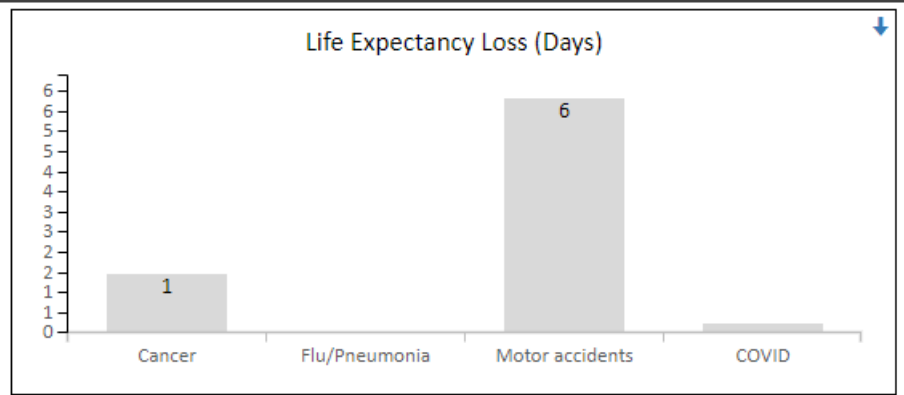
BASIC DATA (please fill in)

Age (Years)	23
Sex	Female
Race/Ethnicity	White, Non-Hispanic
ZIP Code where you live	53212

HEALTH DATA (please fill in)

Height (feet and inches)	5	4
Weight (pounds)	120	
Has a physician ever told you that you have:		
Diabetes	No	
High Blood Pressure	No	
Coronary Artery Disease	No	
COPD or Other Lung Disease	No	
Kidney Disease	No	
Cancer	No	
Heart Failure	No	
Stroke	No	
Dementia	No	

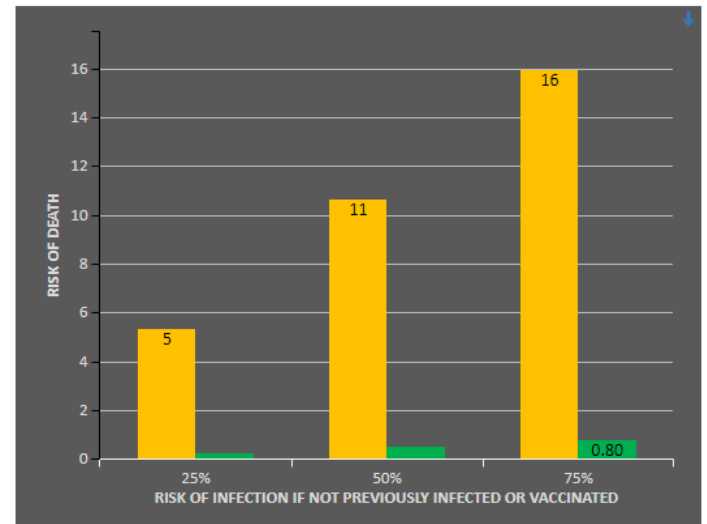
COMPARING COVID TO OTHER COMMON RISKS



Life expectancy loss for COVID is over March 1, 2020- July 1, 2021

Life expectancy loss for other causes is risk over one year

RISK OF DEATH FROM COVID FOR PEOPLE LIKE YOU (OUT OF 1,000,000)



Not previously infected or vaccinated Previously infected or vaccinated

<https://fightcovidmilwaukee.org/individual-risk-estimator>



You are invited to join a study called FightCOVIDMKE!

MCW (The Medical College of Wisconsin) is studying COVID-19 (the coronavirus), and why some people get very sick while others have mild or no symptoms.

If you participate in this survey-based study, you will be paid for your valued role, receive a COVID-19 antibody test, and be able to share your personal experience with COVID-19.

For more information, visit our website: FightCOVIDMKE.org, email us at fcm@mcw.edu, or call us at (414)955-2684.



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