



Welcome!

SAFER Summit
2023

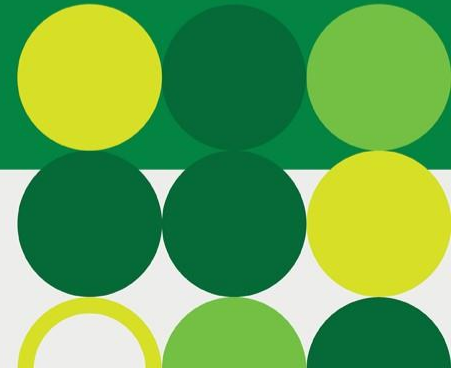
Welcome and Opening Remarks



Mark SooHoo
Health Action Alliance



Lorraine Martin
National Safety Council



NSC Research Results



Caitlin Lang, M.A
National Safety Council



Safeguarding the Workforce: The Impact of COVID-19 on Work and Wellness

Caitlin J. Lang, M.A.
Senior Research Associate
National Safety Council

Surveys

2023 Worker Survey

- Full-time workers
- N = 1,600
- Fielded March – April

2022 Employer Survey

- EHS and HR managers
- N = 312
- Fielded in August

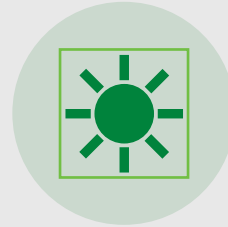
Survey Topics



PHYSICAL AND
PSYCHOLOGICAL
SAFETY



MENTAL HEALTH
AND EMPLOYER
INTERVENTIONS



COVID-19
VACCINATION,
TESTING, AND
LONG COVID
SYNDROME



FUTURE
PANDEMIC
PREPAREDNESS

Wellbeing and Workplace Safety



Feeling unsafe at work was associated with negative mental health outcomes

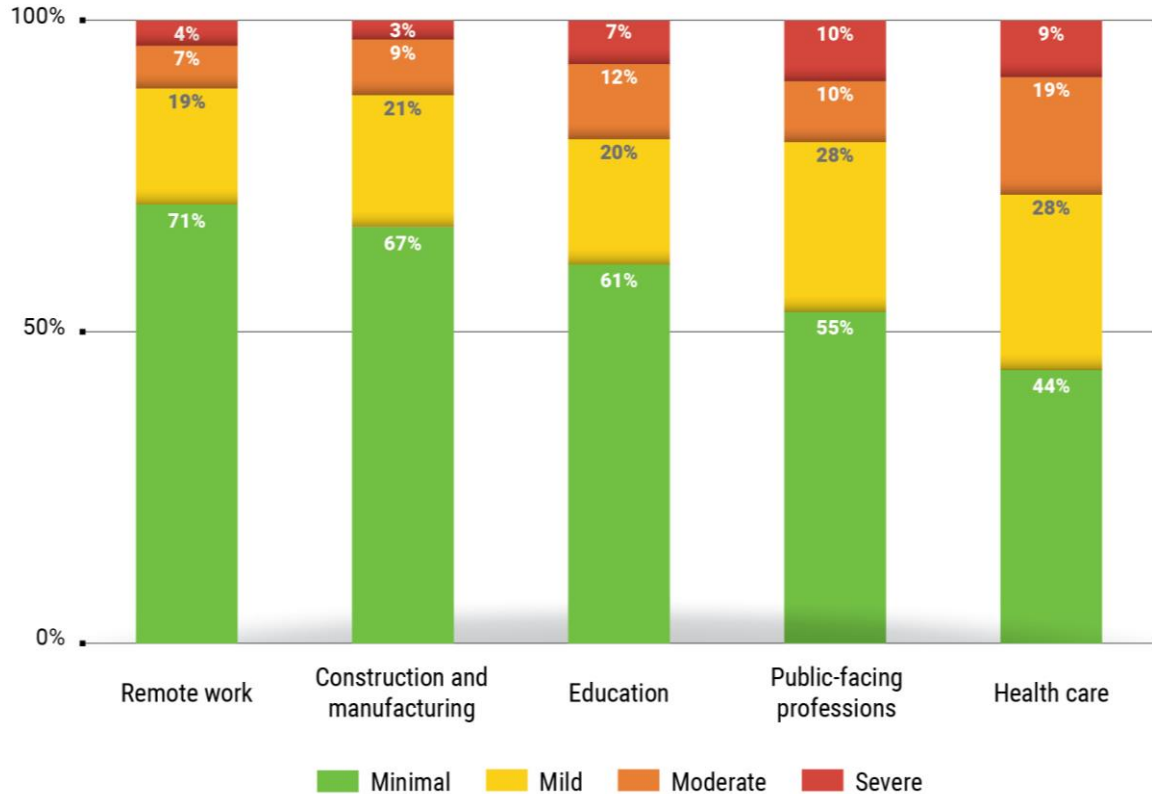


Those who felt unsafe at work were 2-3x more likely to report symptoms of depression and anxiety

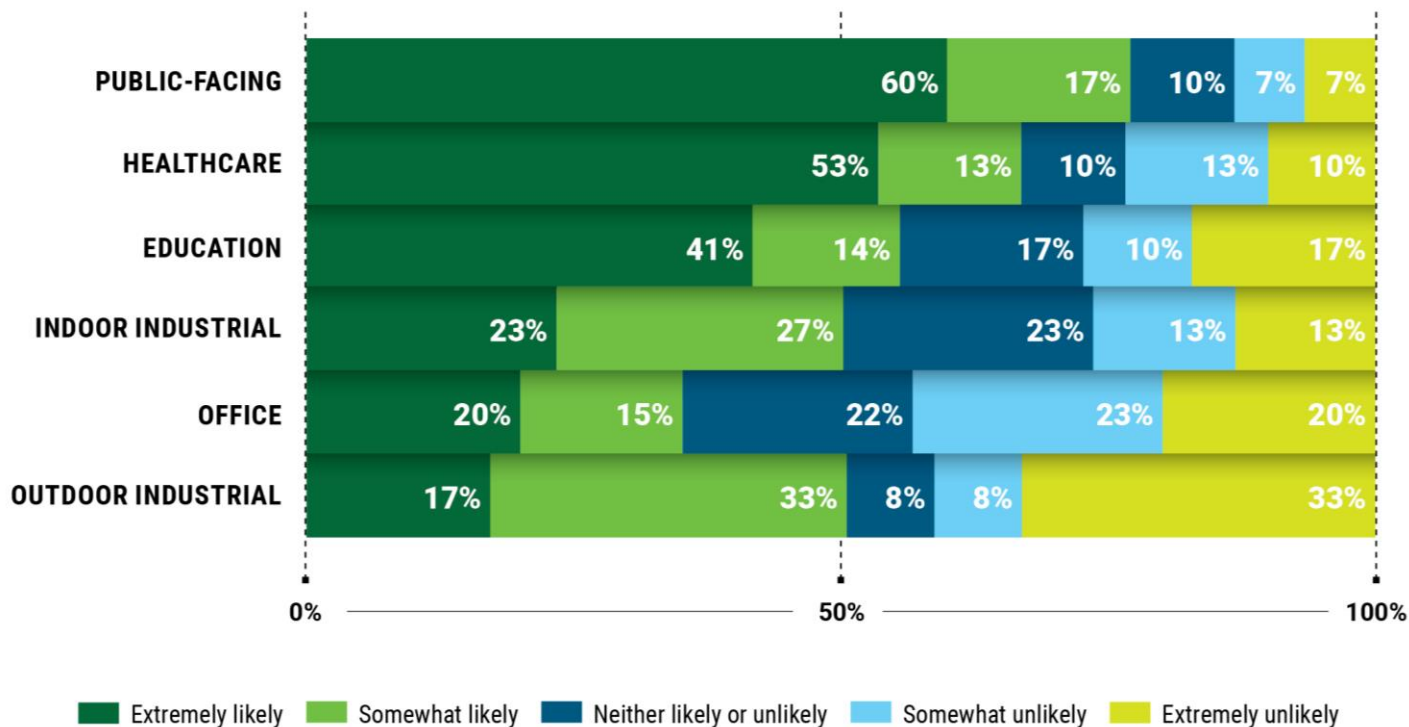


Half of employers noticed an increase in mental health or substance-related incidents during the pandemic

Level of anxiety reported by survey respondents who work in different environments.



Of those who got sick, how likely did workers in different work environments think they caught COVID-19 on the job?



Mental health

- Depression
 - PHQ-8
- Anxiety
 - GAD-7
- Alcohol and other drugs
 - CAGE-AID

Results

- Half experiences mild to severe Depression in the past 2 weeks
 - 31% moderate to severe
- Half experienced mild to severe Anxiety in the past 2 weeks
 - 28% moderate to severe

Drug and alcohol use

- 70% of respondents currently drink alcohol
 - Of those, 20% said it had caused problems at work in the past 6 months

Other substances include illegal drugs and Rx use not as prescribed:

- 20% currently use other substances
 - Of those, 47% said it had caused problems at work in the past 6 months

Mental health and workplace injury



Past injury rates of workers with minimal to severe depression symptoms:

Minimal: 12%

Mild: 17%

Moderate or Moderately Severe: 35%

Severe: 53%



A similar relationship was found between workplace injury rates and anxiety symptoms, with the injury rate ranging from 13% for respondents with minimal anxiety to 36% for those with moderate to severe anxiety symptoms.

Substance use and workplace injury



Past injury rates of workers with minimal to severe AUD symptoms:

Minimal: 12%

Mild: 19%

Moderate or Moderately Severe: 35%

Severe: 66%



Past injury rates of workers with minimal to severe SUD symptoms:

Minimal: 13%

Mild: 24%

Moderate or Moderately Severe: 46%

Severe: 76%

Wellbeing and Employer Interventions

Use of employee assistance programs (EAPs) remains low while the need for interventions is growing

Return on investment in worker mental health and wellbeing is high, possibly more now than ever

Among organizations with Employee Assistance Programs, 80% surveyed had expanded EAP offerings and/or coverage during the pandemic.

Considerations for Addressing Mental Health and Wellbeing



Consult resources such as the NIOSH *Total Worker Health*[®] Workbook



Seek input from workers through surveys or an employee resource group (ERG)



Consider how interventions will be evaluated for effectiveness

Considerations for Addressing Mental Health and Wellbeing



Train supervisors and workers to identify and respond to mental health concerns in the workplace



Perform a language audit of existing policies and procedures to ensure it does not inadvertently discriminate or stigmatize people



Regularly communicate support resources through multiple media and in non-stigmatizing, easy-to-understand ways

Long COVID Syndrome

- Tiredness and fatigue
- Difficulty breathing or shortness of breath
- Cough
- Chest pain
- Sleep problems

- Dizziness
- Difficulty thinking or concentrating
- Depression or anxiety
- Joint or muscle pain

Long COVID: Concerns for Employers



Symptoms of Long COVID may put individuals at greater risk of workplace incidents caused by fatigue or neurological conditions



Cardiovascular and respiratory problems will make physically demanding jobs even more taxing



People with Long COVID symptoms may be an increased risk of developing musculoskeletal disorders (MSDs)

Building a Resilient Workplace

- Emerging topics to “future-proof” your workplace
 - Mental health, substance use, burnout
 - Psychological safety
 - Future pandemic preparedness
 - Hybrid and remote work

Download the latest *SAFER* research report here:



Thank you

Funding

This project was funded in whole by a cooperative agreement with the Centers for Disease Control and Prevention (CDC) grant number NU50CK000584. The CDC is an agency within the Department of Health and Human Services (HHS). The contents of this resource center do not necessarily represent the policy of the CDC or HHS and should not be considered an endorsement by the Federal Government.

Content

The National Safety Council (NSC) is an independent, non-profit organization, and the opinions stated in this presentation are those of the authors and research participants and are not intended to reflect the opinion or policy of any governing body or regulatory agency.

Workforce Wellbeing and More



Dennis Stolle

American Psychological Association



Melissa Williams

National League of Cities



Abigail Barth

Foundation for Social Connection



Richard Jones

Yourn Health





Striving for mental health excellence in the workplace

Melissa Williams, MPA

National League of Cities

Dennis P. Stolle, JD, PhD

American Psychological Association

SAFER Summit

December 5, 2023

About CEOs Advancing Health Equity



Psychologically Healthy Workplaces

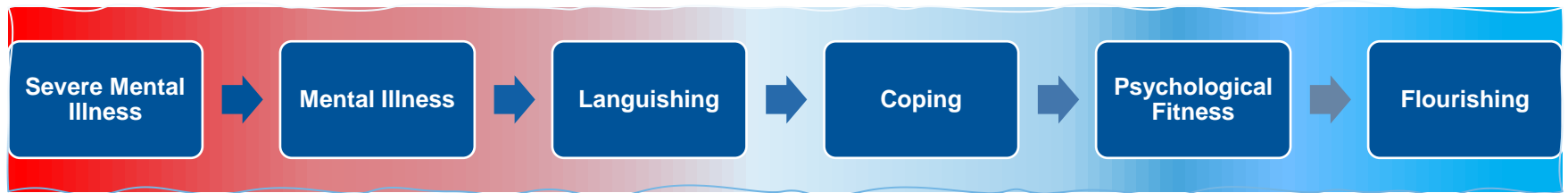
**critical for population
mental health**



World Health
Organization

Mental health is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. It is an integral component of health and well-being....

Mental health is more than the absence of mental disorders. It exists on a complex continuum, which is experienced differently from one person to the next, with varying degrees of difficulty and distress and potentially very different social and clinical outcomes.





Work and career can be an engine for psychological and emotional wellbeing

The U.S. Surgeon General's
Framework for

Workplace Mental Health & Well-Being

2022





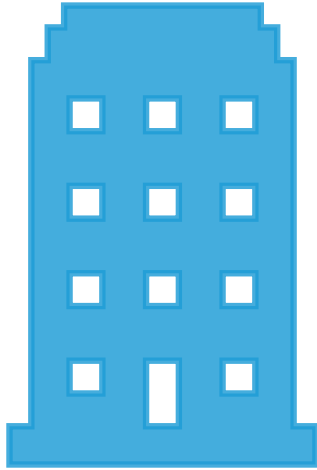
AMERICAN PSYCHOLOGICAL ASSOCIATION

A collage of three images: a video conference grid on the left, an office scene with people at computers in the center, and a woman in a safety vest holding a tablet on the right.

2023 Work in America Survey

Workplaces as engines of psychological health and well-being





Psychological well-being matters to workers

- **92%** – important to work for an organization that **values their emotional and psychological well-being.**
- **95%** – important to work for an organization that **respects boundaries between work and nonwork time.**

Connection & community

Much good news...

-
- **82%** - their workplace fosters positive relationships among coworkers
 - **79%** - their workplace fosters positive relationships between managers and the people they manage

One respondent put it this way:

“My company is like family. We do care for one another and do believe that we are stronger when we work together.”

Connection & community

But also some troubling news when you look at differences between groups...

Percentage who feel they don't belong when at work.

DISAGREEMENT WITH THE STATEMENT OF "WHEN I AM AT WORK, I FEEL LIKE I BELONG" BY DUTIES WITHIN THE ORGANIZATION



Overall

20%

Upper Management

10%

Individual Contributors

19%

Middle Management

22%

Front-line Workers

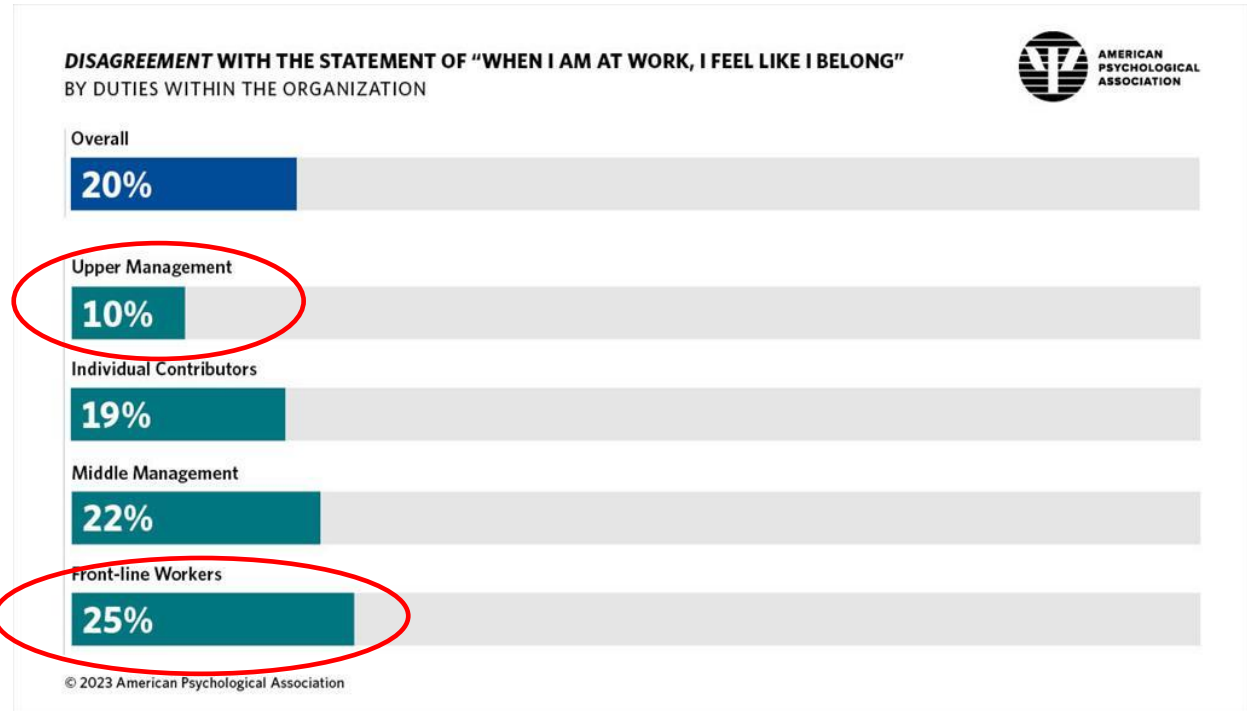
25%

Connection & community

Percentage who feel they don't belong when at work.

Front-line workers significantly more likely than upper management to report feeling they don't belong.

It may be difficult for upper management to relate, when so few have the same experience.



Work-life harmony

Less than half are willing to even “*somewhat*” agree that their employer offers a culture where time off is respected.

The problem is far worse among manual labor compared to office work.

PERCENTAGE OF WORKERS WHOSE EMPLOYER OFFERS A CULTURE WHERE TIME OFF IS RESPECTED BY TYPE OF WORK



Overall

40%

Office Work

48%

Manual Labor

25%

Mattering at work

A lack of meaning in one's work is associated with higher stress levels at work.

PERCENTAGE OF WORKERS WHO TYPICALLY FEEL TENSE OR STRESSED DURING THE WORKDAY
BY WHETHER THEY CONSIDER THE WORK THEY DO MEANINGFUL



Overall

48%

Have Meaningful Work

45%

Do Not Have Meaningful Work

71%

Opportunity for growth

A lack of opportunities for growth and development is associated with higher stress levels at work.

PERCENTAGE OF WORKERS WHO TYPICALLY FEEL TENSE OR STRESSED DURING THE WORKDAY
BY WHETHER THEY ARE SATISFIED WITH OPPORTUNITIES FOR GROWTH AND DEVELOPMENT



Overall

48%

Satisfied with Opportunities for Growth and Development

42%

Not Satisfied with Opportunities for Growth and Development

66%

Protection from harm

Nearly one third of service workers have experienced *verbal abuse* at work in the last 12 months.

PERCENTAGE OF WORKERS WHO HAVE EXPERIENCED WORKPLACE VERBAL ABUSE
BY TYPE OF WORK



Overall

24%

Office Work

22%

Manual Labor

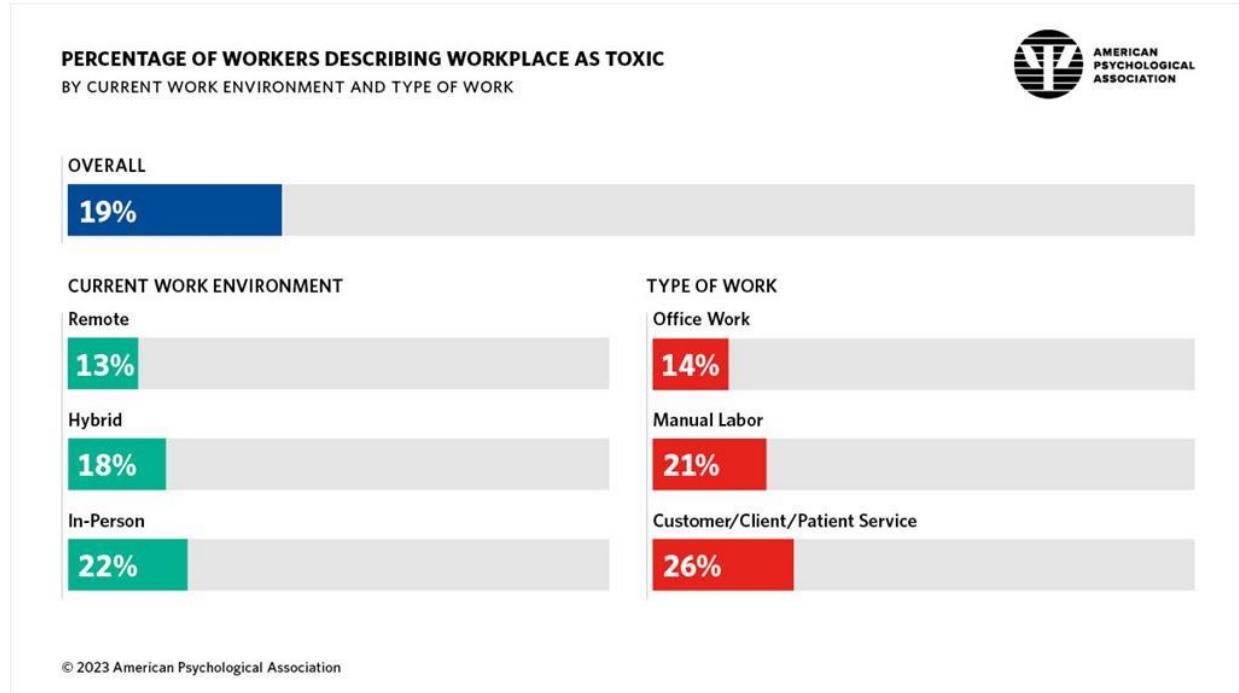
23%

Customer/Client/Patient Service

31%

Protection from harm

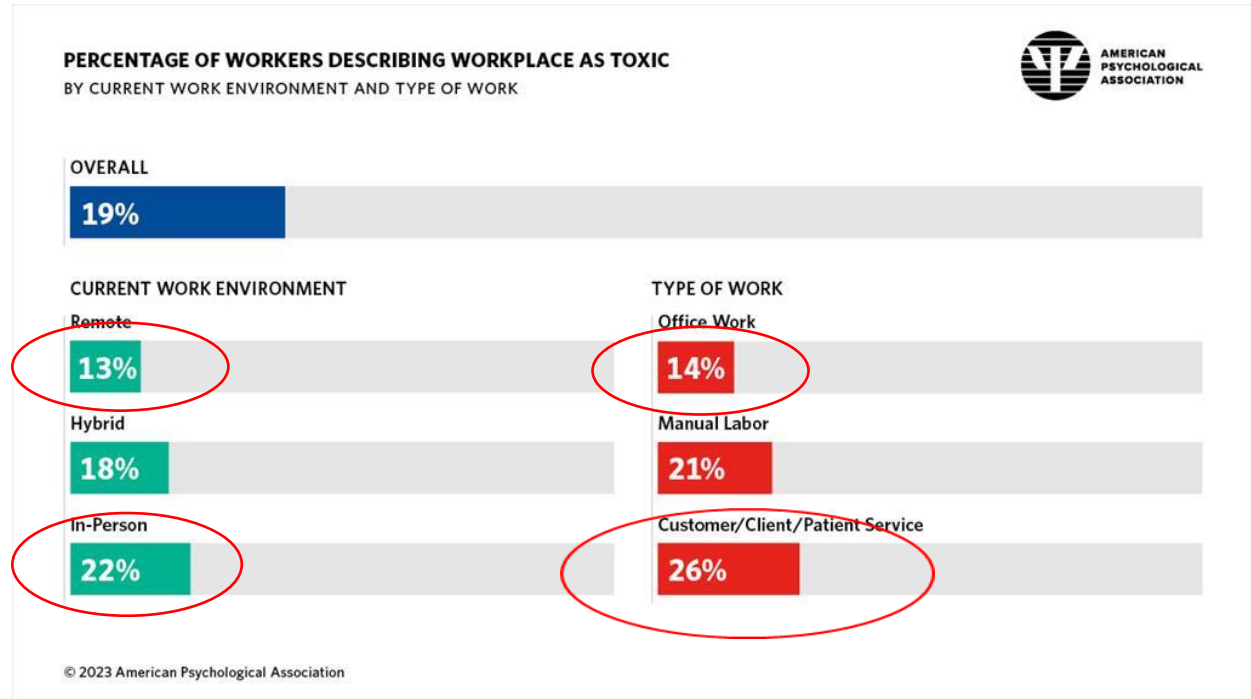
Nearly one in five workers describe their workplace as “toxic.”



Protection from harm

Overall, nearly one in five workers describe their workplace as “toxic.”

Percentages are higher for in-person than remote and higher for service positions than office work.



Protection from harm

Toxic workplaces are associated with diminished mental health.



WORKERS WHO EXPERIENCE TOXIC WORKPLACES ARE:

2.8x
more likely to
report “fair or poor”
mental health

2.7x
more likely to agree
that their work
environment has a
negative impact on
their mental health

3.5x
more likely to have
experienced mental
health harm at work



Striving for mental health excellence in the workplace



Employer Resources



Train your managers to promote health and well-being



Increase employees' options for where, when, and how they work



Reexamine health insurance policies with a focus on employee mental health



Listen to what employees need and act on it



Take a critical look at equity, diversity, and inclusion policies



Develop programs and policies that support employee mental health

Valuable Articles

Increase employees' options for where, when, and how they work

Creating an environment of flexibility is not just a nice thing for employees. Research shows that when employees have a sense of autonomy, performance improves.

Last updated: June 2, 2022 Date created: April 25, 2022 2 min read

Healthy Workplaces



Return to main page

Read about other actions to support employee mental health

Want to learn more?

Download the full Striving for Mental Health Excellence in the Workplace guide (PDF, 1MB) [↗](#)

Creating an environment of flexibility is not just a nice thing for employees. COVID-19 has brought unexpected responsibilities and unprecedented stressors into employees' lives, and the workplace must adapt accordingly.

Why this matters to leaders

- Research has long supported providing employees with a degree of control over their work environments. The key is to give employees the agency to select from among an array of reasonable options that balance business needs with their personal circumstances.
- An individual's sense of autonomy has been shown to [increase motivation and performance \(PDF, 258KB\)](#), which can directly impact an organization's bottom line.
- The value of a virtual or hybrid approach depends on an employee's role, personality, current life circumstances, and work style.
 - Virtual or hybrid work can provide flexibility for people with caregiving responsibilities, bypass location bias, and even facilitate opportunities for employees of all levels to share ideas by taking meetings out of the often intimidating conference room setting.
 - Flexible work schedules may be important for some but not all employees or may be important to a particular employee at one point in time but not at another point in time.

[Discover more on this topic >](#)

Valuable Articles

Employers need to focus on workplace burnout: Here's why

Concrete ways to address the problem with psychological science

Date created: May 12, 2023 4 min read



Workplace burnout can be a serious problem for individual workers and entire organizations. The good news is there are ways to get ahead of it and methods to rectify it.

What it is: "Workplace" burnout is an occupation-related syndrome resulting from chronic workplace stress that has not been successfully managed. Burnout can be measured and quantified using validated scientific tools. It involves ongoing emotional exhaustion, psychological distance or negativity, and feelings of inefficacy—all adding up to a state where the job-related stressors are not being effectively managed by the normal rest found in work breaks, weekends, and time off (World Health Organization, 2019).

What it isn't: This isn't "burnout" we use in casual conversation. True workplace burnout is specific to one's job or occupation and is more concerning and detrimental than the daily irritations everyone experiences and most of us manage.

Why workplace burnout matters

Decades of [research](#) shows an association between workplace burnout and a host of negative organizational, psychological, and even physical consequences, including:

Organizational

- Absenteeism
- Job dissatisfaction
- Presenteeism

Psychological

- Depression
- Insomnia
- Psychological distress

Physical

- Heart disease
- Headaches
- Musculoskeletal pain

(Salvagioni et al., 2017).

Case Studies

How these organizations are leading in making employee mental health a priority

Learn more from these case studies of successful leaders promoting mental health among workers.

National League of Cities

The National League of Cities (NLC), the nonprofit advocate for municipal governments, is committed to supporting and nurturing a work culture that prioritizes the mental and physical health of its employees. It has done so through several targeted approaches. Like many organizations, NLC moved its entire 130-person Washington, D.C.-based staff to virtual work at the start of the pandemic. Employees were encouraged to maximize and leverage flexible schedules. As the pandemic evolved, NLC developed a hybrid model in which staff could continue to work remotely and also use the NLC offices for collaboration and other onsite work.

F5 Networks

F5 Networks, a large technology company in the Seattle area, also uses employee surveys extensively to promote its “human-first, high-performance” culture. Along with regularly surveying existing employees, leaders also seek input from candidates who weren’t hired, employees who left the company, and individuals who left and came back.

YMCA of the USA

YMCA of the USA, (Y-USA), the national resource office for the nation’s YMCAs, pivoted to fully remote work in March 2020. Recognizing the increased need for social and emotional support, YMCA immediately began heavily promoting its employee assistance program (EAP) services through frequent newsletters, emphasizing free access to confidential services for employees’ entire families.

Ernst & Young

The consulting firm Ernst & Young (EY) offers a full suite of mental health and well-being resources for employees and their families. In addition to EY’s health care plan that includes mental health benefits, EY has an internal team of clinicians that conduct presentations and interactive sessions promoting mental health in the organization.

Blackrock

Blackrock, an international investment management organization, also recognized the urgency of prioritizing employee well-being during the COVID-19 pandemic. As the organization pivoted to remote or socially distanced work, it conducted periodic employee surveys to gather feedback that would inform new policies and procedures.

Call to Action

Commit your organization to support employee mental health and influence a workplace culture shift

[MAKE THE COMMITMENT NOW](#)



- No audit
- Not an award
- A public commitment to show your dedication to your employees

200+ Organizations Have Made the Commitment

These organizations are committed to changing the culture around mental health in the workplace and combating stigma.

BUSINESS

GOVERNMENT

NONPROFIT

INTERNATIONAL

Examples:



TRANE
TECHNOLOGIES

Trane
Technologies



Magellan
FEDERAL

Magellan Federal



udemy

Udemy



asae®
The Center for Association Leadership

American
Society of
Association
Executives



National
Council of
Nonprofits

National
Council of
Nonprofits



HumRRO
HUMAN RESOURCES RESEARCH ORGANIZATION

Human
Resources
Research
Organization



City of Tuskegee
(Alabama)

UNITED ARAB EMIRATES



American
University in the
Emirates

Make the Commitment



Commit your organization to support employee mental health and influence a workplace culture shift

[MAKE THE COMMITMENT NOW](#)

Social Connection through Work, Labor, and Employment (WEL)

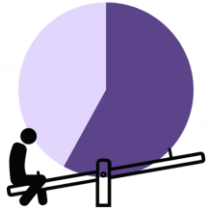
Abigail Barth, MPH

Research and Innovation Program Manager

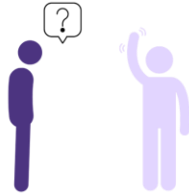


We are facing a global crisis of disconnection.

Millions of Americans are socially isolated, lonely, or both, which negatively impacts quality of life and health outcomes. This is common across the globe.



In post-pandemic research, **58% of American adults reported loneliness**, which is consistent with pre-pandemic rates of loneliness.



57% of Americans report that they know some of their neighbors and only 31% say they know most.

23% of young adults aged 18-29 say they don't know a single one of their neighbors.



In the 1970s, 50% of Americans felt that “most people can be trusted.” In 2012, this figure had **declined to a third of Americans.**

Terms and Definitions

Loneliness is a *subjective* unpleasant or distressing feeling of a lack of connection to other people, along with a desire for more - or more satisfying - social relationships.

VS.

Social Isolation refers to having *objectively* few social relationships, social roles, group memberships, and infrequent social interaction.

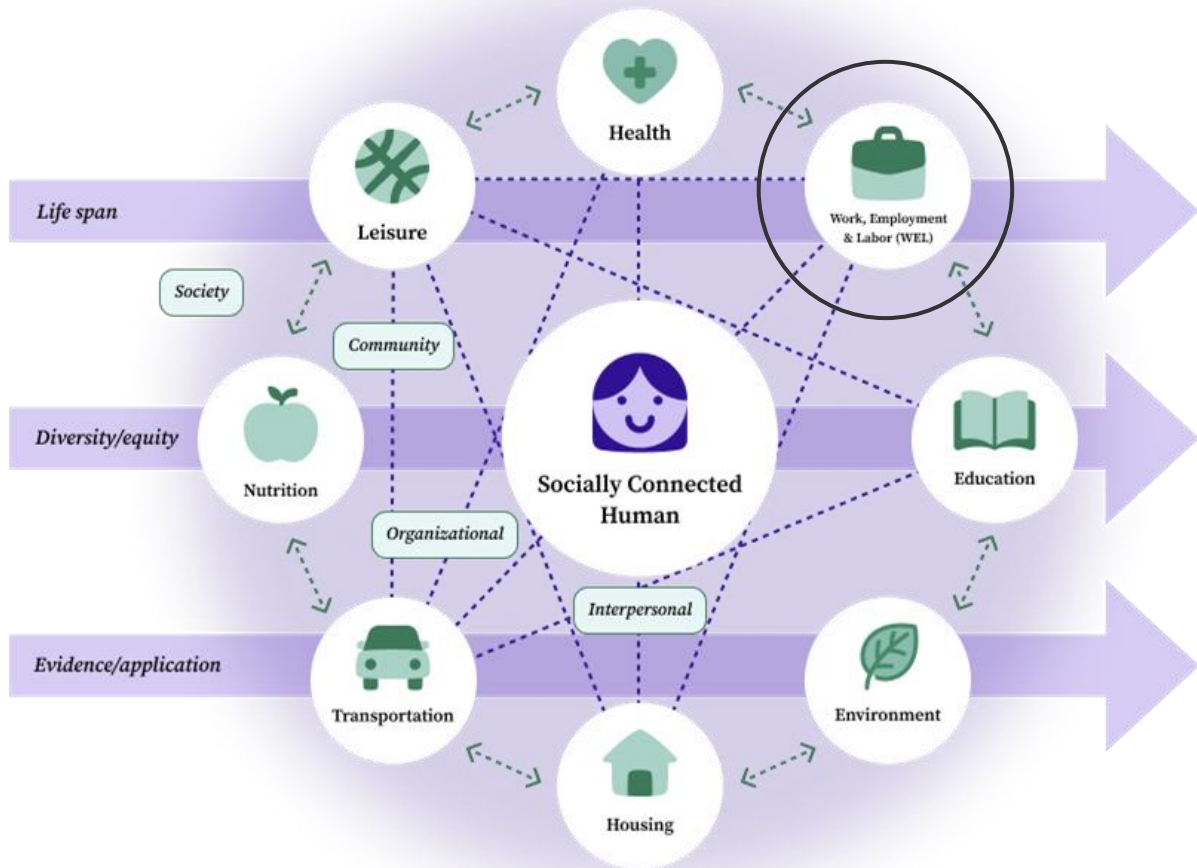
Social Connection means having a variety of relationships you can rely on that are high quality.

Social Connectedness is the degree to which one is socially connected.

Belonging is the feeling of being an accepted member of a group.

SOCIAL Framework

- Systems
- Of
- Cross-Sector
- Integration and
- Action across the
- Lifespan



WEL Report Objectives

- Equip workers, managers, organizational leaders and others with approaches and policies they can test and use to address social isolation and loneliness, and create more high-quality connections within their organizations, for their customers, and society at large
- Identify gaps in the evidence base and possible future areas for research
- Provide evidence-based policy recommendations to create more socially connected organizations and society

SILC Approaches - Across Levels of Influence

Focus on the Individual

- Promising Approaches:
 - Provide skills building and cognitive reframing support
- Potential Policies:
 - Remove barriers and increase access to mental and behavioral health resources and services
 - Implement workplace practices that encourage mindfulness (e.g., recovery pauses throughout the day, ground rules to discourage multitasking)
 - Offer employers an insurance premium discount for implementing employee wellness programs

SILC Approaches

Focus on Interpersonal Relationships

- Promising Approaches:
 - Family supportive supervisor behavior
 - Enabling peer support
 - Prioritizing team effectiveness
- Potential Policies:
 - Model healthy work-life balance behaviors
 - Develop leave policies that support caregivers
 - Partner new hires with existing team members during onboarding and extend the onboarding timeline

SILC Approaches

Focus on Organizational Culture and Networks

- Promising Approaches:
 - Worker autonomy
 - Workplace design
- Potential Policies:
 - Re-evaluate existing policies and consider pilot programs that promote employee flexibility and autonomy (i.e., option for remote work, duration or frequency of meetings, etc.)
 - (Re)design the working space (i.e., fitness centers, quiet rooms, social break areas, outdoor areas)

SILC Approaches

Focus on Broader Communities and Society-at-Large

- Promising Approaches:
 - Consider customers and communities
 - Coworking Spaces, Employee Volunteering, Community Green Spaces
 - Education & Awareness
 - Advocacy
- Potential Policies:
 - Use platform to discuss experiences and show commitment/support
 - Share evaluation data and join collaboratives with other industry leaders
 - Establish nationally consistent evaluation benchmarks

Action Guide for Building Socially Connected Communities

↓ Scroll



Learn More

Read our WEL
Report



Explore the Action
Guide



Partner with us



Thank you!



Mental Health in the Workplace Panel

Richard Jones, Chief Clinical Officer, Youturn Health
NSC SAFER Summit
December 5, 2023

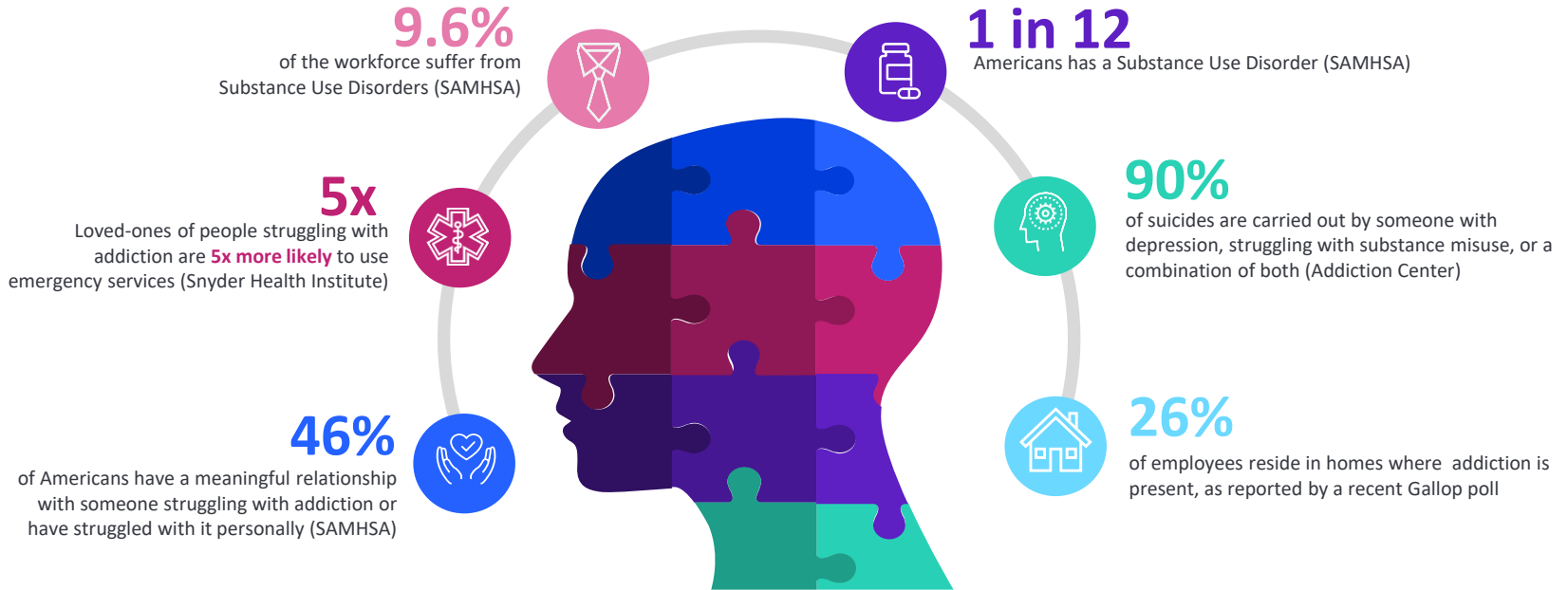
Richard Jones, MA, MBA, LCAS, CCS, CCDP, CAI
Chief Clinical Officer
Youturn Health

Richard Jones is an experienced therapist, clinician, and health care entrepreneur operating primarily in the behavioral health space. Richard has wide-ranging professional experience across nearly all behavioral health domains, including mental health, substance use disorders, co-occurring disorders, and intellectual disabilities.

He has over 20 years of management experience and has been instrumental in the launch and rebuild of multiple programs nationwide. Richard is passionate about providing quality care and supporting people in need. He has been the founding CEO of two non-profit organizations and two for-profit business dedicated to disrupting the behavioral-health space for the betterment of people in need.

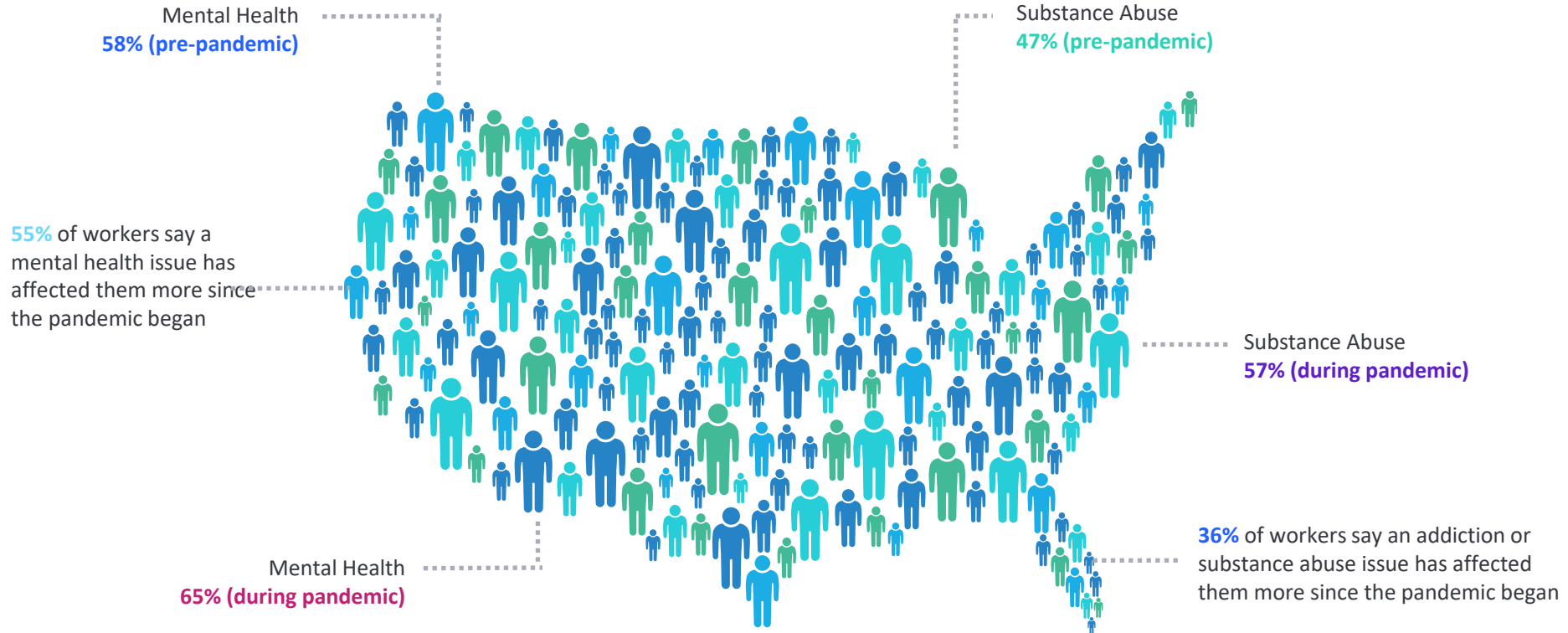


80% of individuals who die by suicide have a Substance Use Disorder (SUD)



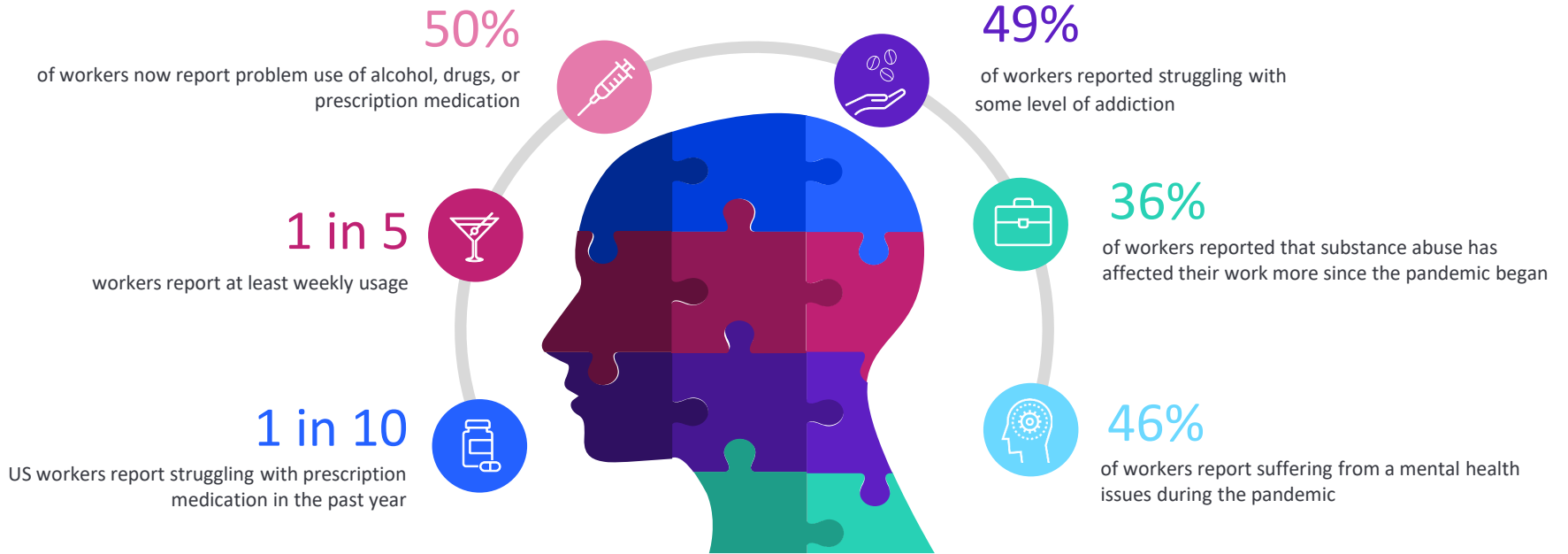
The Impact — Exasperated by the Pandemic

Percentage of employees who lost 10% hours of productivity per week due mental health and substance misuse



Workers Struggling with Substance Abuse

1425 US Workers



“ In 2021, 94% of individuals
with a Substance Use
Disorder did not receive help. ”

Source: SAMHSA National Survey of Drug Use and Health (NSDUH), January 4, 2023.
<https://www.samhsa.gov/data/release/2021-national-survey-drug-use-and-health-nsduh-releases>

Stigma

There is a real fear of being ostracized by family members and co-workers, passed over for promotions or disciplined on the job that keeps individuals from seeking traditional support.

Individuals struggling with suicidal thoughts may have the perception that they will be perceived as weak and are hesitant to access care.

Abstinence

The thought of immediate removal of alcohol or a drug of choice can be intimidating. This fear stops them from ever taking an initial step towards seeking help or changing behaviors.

Scope

Behavioral health challenges, suicidal ideation, and substance misuse disorders impact millions of people - yet most of that suffering is unseen and unaddressed.



Only 10% of Individuals ever reach out for help

Youturn Health bridges gap between inaction and seeking treatment by making it accessible to users wherever they are in their journey.

Usually, the family is not supported

Our proven strategies including peer coaching, family involvement, referrals, and virtual accessibility. We enable family support and engagement through the recovery process.

Engagement

75% of people who remain engaged (no matter what the treatment is) reach recovery or remission.

Our supplementary peer- and long-term support tools keep people engaged post-treatment — decreasing the probability of catastrophic or fatal relapse.

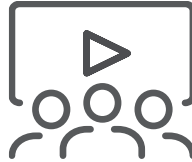


Solutions to Reach the 94% of People Who Don't Reach Out for Help



Education and Assessment

Provide education on topics like stress management, anxiety, depression, substance use, and mental health for both the individual struggling and their family members.



Family Support

When one family member struggles with a chronic disease like SUD, the whole family is impacted. Family members need dedicated support – education and peer coaching – to both heal and improve their loved one's chance of recovery.



Peer Coaching

Peer support from trained coaches with lived experience in substance use recovery and/or mental health helps the individual and family members understand what they're going through and take positive steps in their journey.

Results

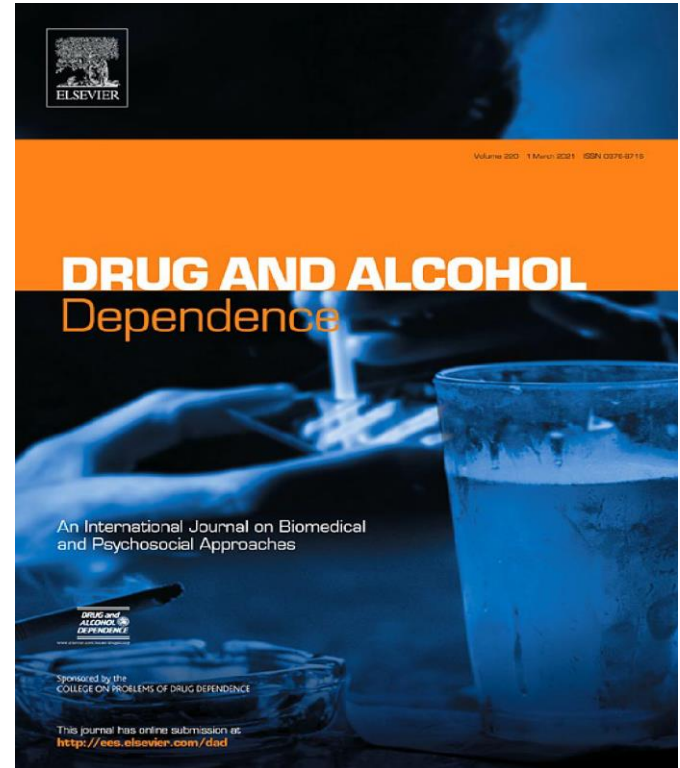
Engagement rate over the six-month post-discharge time period was higher for participants in the recovery coaching intervention (84%, 95% CI: 78% to 91%) compared to the standard of care control condition (34%, 95% CI: 25% to 44%), log OR = 28.95, $p < .001$.

Conclusion

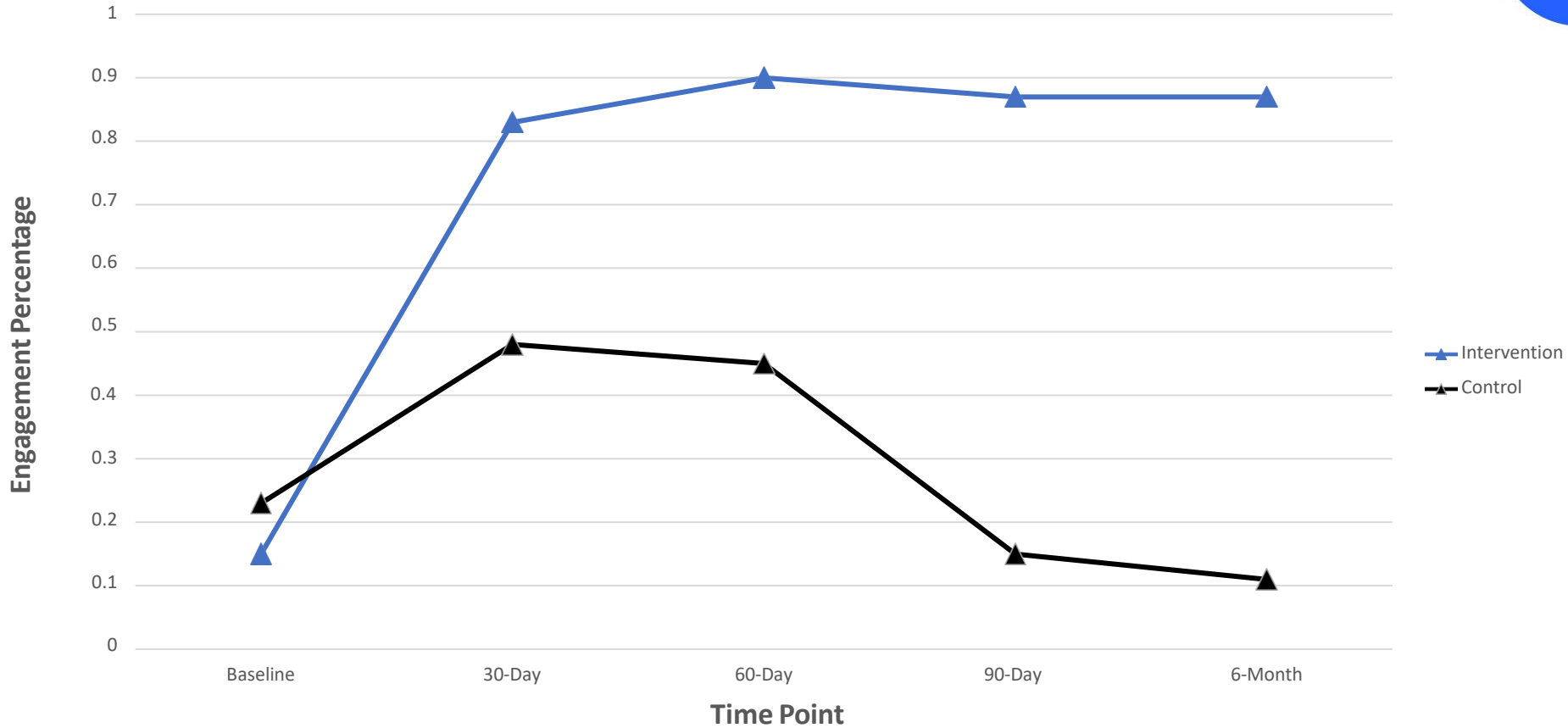
SUD is a chronic, relapse-prone disease, and the most important factor for predicting improvement at five years post-discharge is on-going engagement (Weisner et al, 2003). This study demonstrates that inpatient linkage to recover coaching services improves engagement rates and can feasibly be implemented in a single large hospital system. This intervention is promising for both short-term and long-term engagement in recovery support services.

Kaileigh A. Byrne, Prerana J. Roth, Krupa Merchant, Bryana Baginski, Katie Robinson, Katy Dumas, James Collie, Benjamin Ramsey, Jen Cull, Leah Cooper, Matthew Churitch, Lior Rennert, Moonseong Heo, & Richard Jones

Clemson University, Prisma Health-Upstate, University of South Carolina School of Medicine Greenville



Percentage of Participants Engaged in Recovery Care Services by Condition: All Participants



Peer Intervention to Link Overdose Survivors to Treatment

Project Overview

Summary: This project is a 3-site, randomized controlled trial using Peer Recovery Coaches trained in FORCE (FAVOR Overdose Recovery Coaching Evaluation).

Engagement Plan: Coaches will engage with opioid overdose survivors in the emergency department and follow a modified FORCE manual using a tiered approach of engagement, utilizing motivational interviewing and a strengths-based care management approach to engage participants in care and develop a patient-centered recovery plan.

Intervention Duration: The FORCE intervention will be tailored to the participant's needs and will continue for 12 months after enrollment.

Integration and Referral: This intervention will be compared to Treatment as Usual (TAU) in which overdose survivors receive referral to treatment.

Anticipated Results: Outcomes include engagement in formal OUD treatment between groups, retention in treatment, and number of overdoses after enrollment.



- The ACE model has been adopted by the National Institute of Drug Abuse (NIDA) Clinical Trial Network (CTN)
- The NIDA CTN is the federal government's program to identify and promote evidence-based programs
- The first peer recovery model to be included in the Clinical Trial Network

Thank you!

Questions?

Richard Jones, rjones@youturnhealth.com

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Psychological Safety and Well-Being



Shanna B. Tiayon, PhD
Yes Wellbeing Works





YES WELLBEING WORKS

PSYCHOLOGICAL SAFETY

A CASE STUDY

DR. SHANNA B. TIAYON



www.yeswellbeingworks.com





Defining Psychological Safety



What comes to
mind when
you hear the
term
psychological
safety?





Psychological Safety

The capacity to show up authentically, make mistakes, push back and seek support without fear of negative consequences

(Yes Wellbeing Works, LLC)



Psychological Safety

The capacity to show up authentically, make mistakes, push back and seek support (**and reasonably believe you will receive it**) without fear of negative consequences

(Yes Wellbeing Works, LLC)





Basic Needs: Employees are paid fair wages and benefits and have the equipment and resources needed to do their jobs.

Psychological Safety: Employees can show up authentically, make mistakes, push back and ask for support without fear of negative consequences.

Belonging: Employees feel connected to the organization's mission and vision and through meaningful professional relationships with colleagues.

Esteem: Employees feel their work is valued and their contributions recognized.

Trust

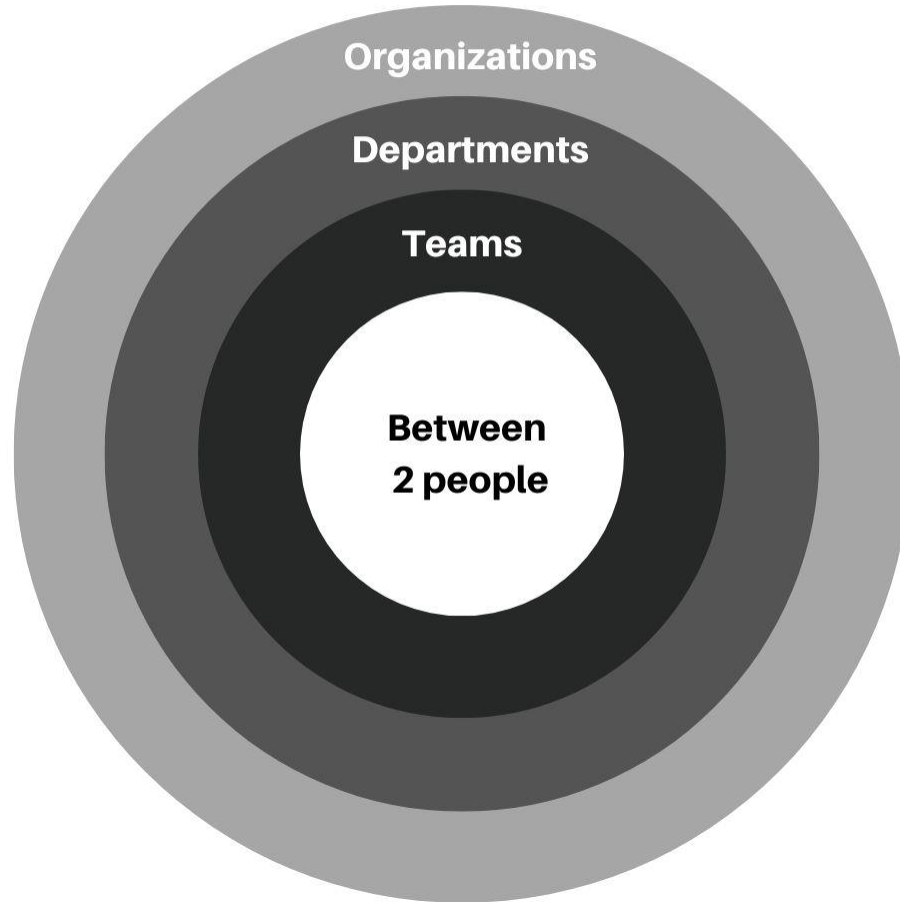
Your willingness to give others the benefit of the doubt

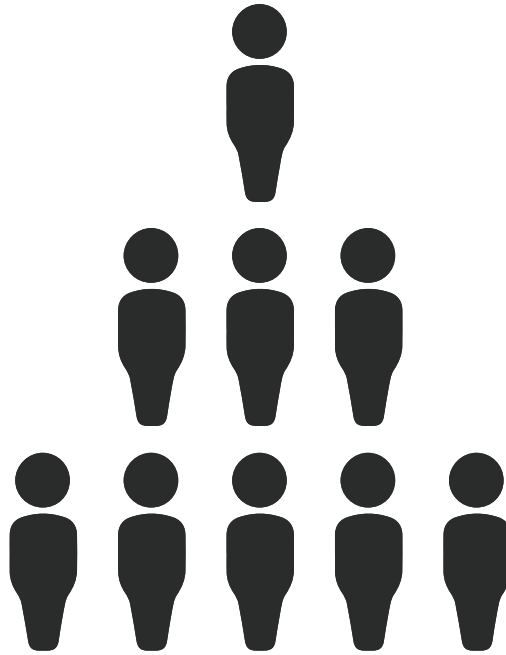
Psychological Safety

Your belief that others will give you the benefit of the doubt

Amy Edmonson, PhD

Group Level Construct





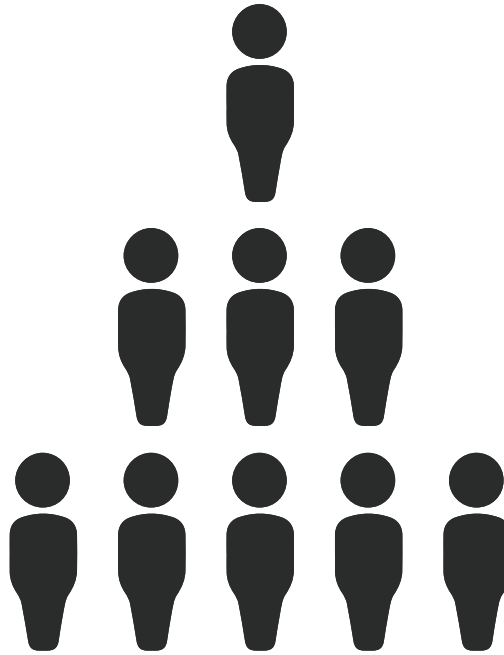
Psychological safety is largely a top down process. Why?



Have the authority to reward desired behaviors and redirect non-desired behaviors

Responsible for reinforcing policies and procedures

Conduit by which employees “fear negative consequences”



Responsible for developing policies and procedures

Employees/team members look to them as behavioral models

Set the norms

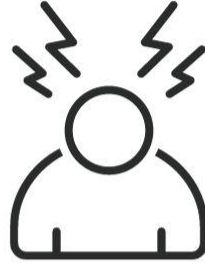
Psychological safety is largely a top down process. Why?



Outcomes of Psychological Safety



**Disclosing
Mistakes**



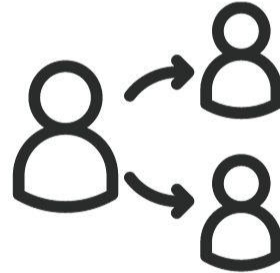
Reducing Stress



Speaking Up



**Creativity/
Innovation**



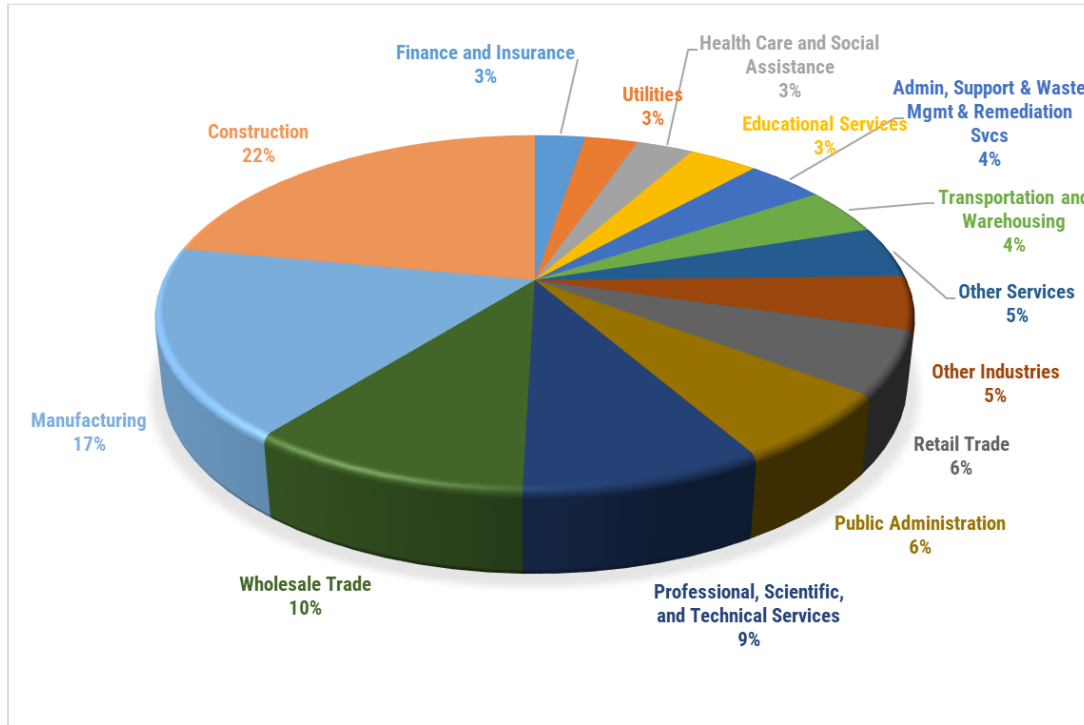
Information Sharing



**Group
Dynamics**



Members by Industry



NSC Membership is industry diverse with most industries represented.

Top 3 Industries:

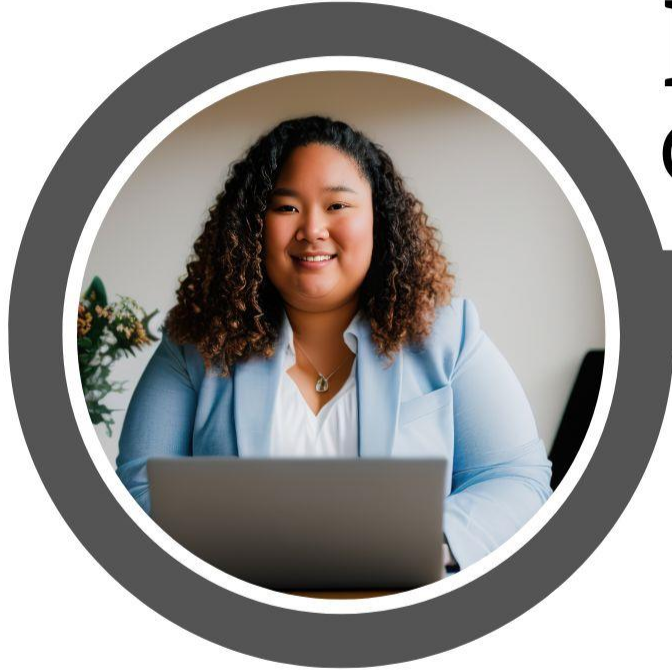
- Construction (22%)
- Manufacturing (17%)
- Wholesale Trade (10%)

*Other industries are a combined total of the following industries – each representing less than 2% of NSC Membership - Real Estate and Rental and Leasing; Information; Mining, Quarrying, and Oil and Gas Extraction; Arts, Entertainment, and Recreation; Accommodation and Food Services; Agriculture, Forestry, Fishing and Hunting; Management of Companies and Enterprises



Psychological safety creates a workplace environment that normalizes support, encourages shared responsibility and fosters interpersonal interactions based on honesty





Psychological Safety

Case Study: Eastern Funding





Nancy Robles

- President of Eastern Funding, LLC
- Worked at Eastern Funding for 15 years
- Occupied various roles in the company before becoming President
- Currently completing doctoral studies in Management and Organizational Leadership

Eastern Funding

- Equipment Financing
- \$1.5 billion in assets
- 110 employees
- Recently merged with Macrolease (health and fitness financing company)
- Starting working with Yes Wellbeing Works in 2019

EF

EASTERN
FUNDING

EASTERN FUNDING & YES WELLBEING WORKS TIMELINE

2019

- All employee survey

2020

- Executive Level Trainings on employee wellbeing
- Mental health in the workplace training – All staff

2021

- Pulse surveys
- Continued company wide trainings

2022

- Annual Survey
- Continued training
- Supplemental Coaching
- Merger support

2023

- Organizational Wellbeing Assessment
- Focus on psychological safety – trainings, coaching, functional support



OWA Process

- ✓ Statistically Validated Survey Tool
- ✓ Focus Groups
- ✓ Human Resources Audit
- ✓ Final Report and Recommendations



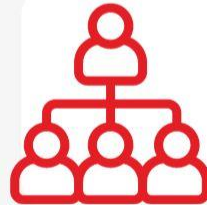
Data Driven Approach



Job Description Initiative



1:1 Departmental Sessions



Management & Leadership
Coaching

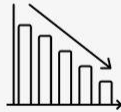


Results to Date

**Psychological Safety
increased in 2
departments**



**Psychological safety
declined in 2
departments**



**Psychological safety
did not further degrade
in one business unit**



**Manager competence
in employee centric
management increased**



RESOURCES



**Emerging Trends in
Employee Wellbeing
White Paper**



**Intro to Trauma Informed
Workplaces**



**Additional Resources
INSIGHTS PAGE**





www.yeswellbeingworks.com



The Pandemic has Ended, Now What



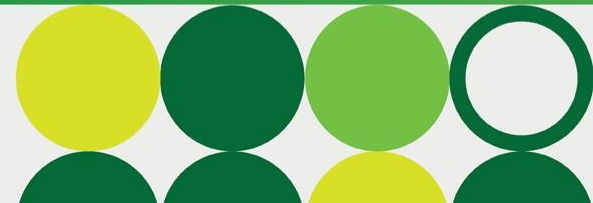
Lisa Koonin
Health Preparedness Partners, LLC



Aman Patel
Pandemic Defense



Ken Meade
CDC



Future Pandemic Preparedness: Critical Roles for Employers

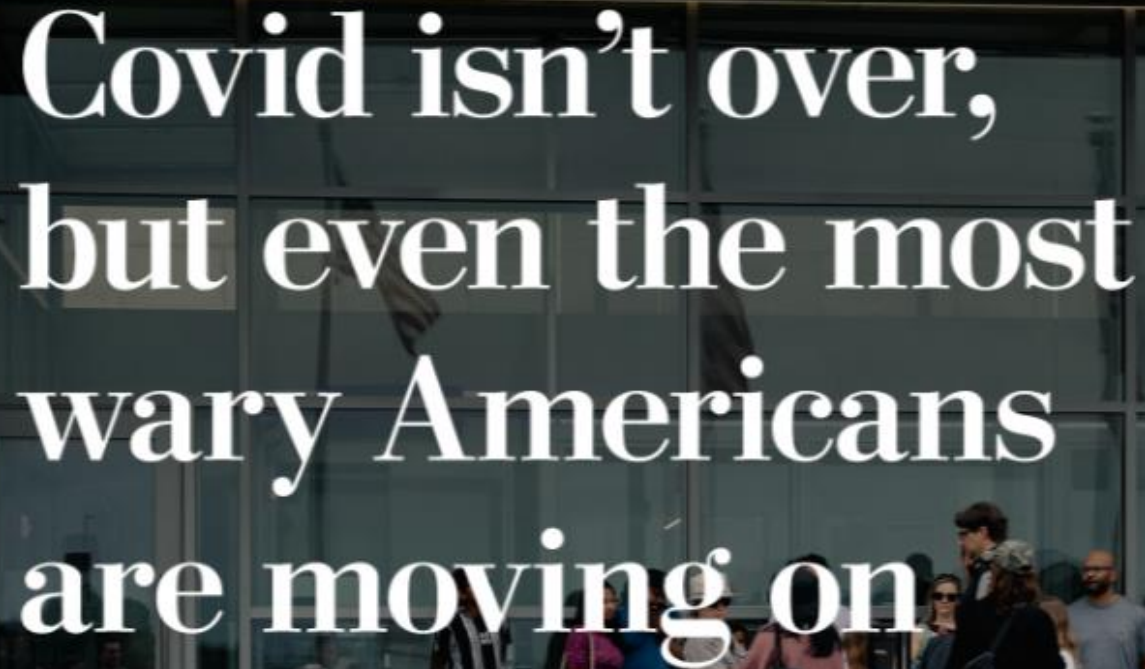
NSC Fourth Annual SAFER Summit

December 5, 2023

Dr. Lisa M. Koonin, DrPH, MN, MPH

Health Preparedness Partners

From Panic to Complacency



Covid isn't over,
but even the most
wary Americans
are moving on

Will Your Company Be Prepared?

- We all want to put COVID-19 behind us and move on
- But if we don't take lessons learned from recent experience, we will be less prepared for the next emergency
- Experts agree: Another pandemic will happen
- Not maybe—we will experience a future pandemic --but we don't know when

Since 2003, There Have Been Multiple Disease Outbreaks and Serious Global Health Threats

GLOBAL OUTBREAKS

2003 - SARS-CoV

2009 - H1N1 flu

pandemic

2012 - MERS-CoV

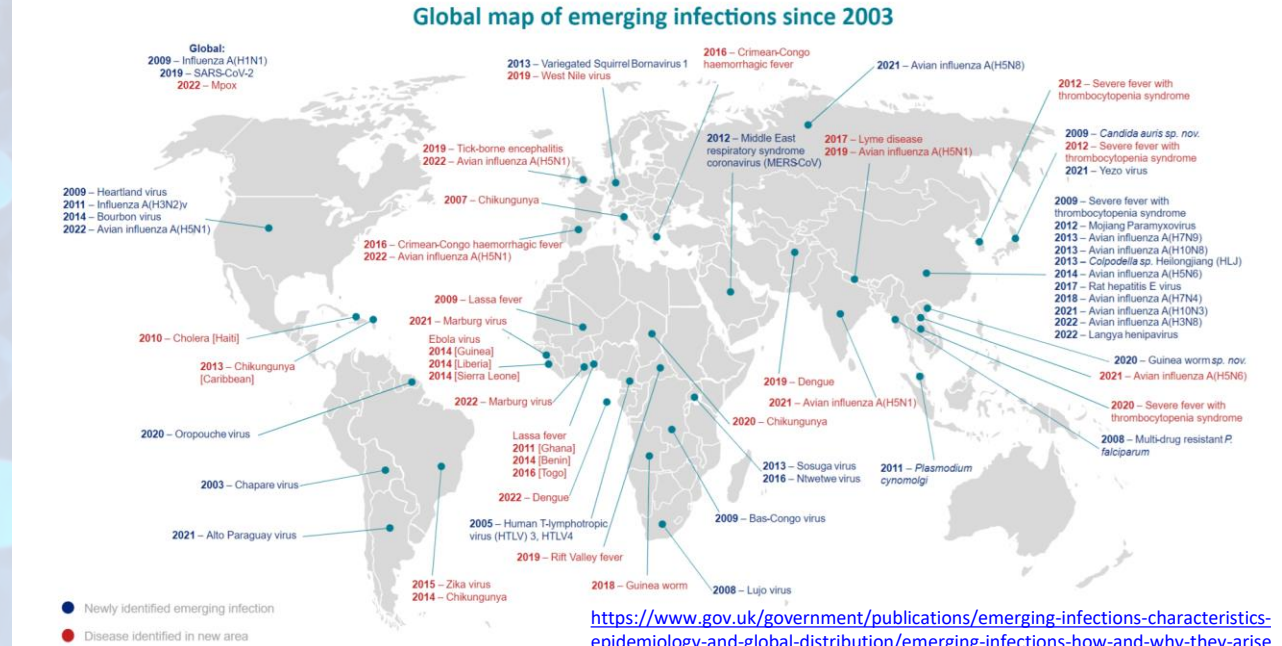
2014 - Ebola

2016 - Zika

2020 - COVID-19

2022 - MPOX

Global map of newly identified emerging infections and notable outbreaks of diseases in humans in new areas between 2003 and 2022



The WHO Has Identified Diseases That Could Cause Future Outbreaks and Pandemics

- The World Health Organization has identified pathogens that could spark a future pandemic
- This list of nine diseases also includes “**Disease X**”
 - A serious international epidemic could be caused by a pathogen currently unknown to cause human disease



<https://www.who.int/activities/prioritizing-diseases-for-research-and-development-in-emergency-contexts>

Looking Back to Plan Forward

- How did your organization fare during the COVID-19 pandemic? Were your plans effective?
 - What did your company learn from the COVID-19 experience?
 - Given lessons learned, what would you have done differently?
- Have you interviewed some of your staff and leadership to learn about what went well and the challenges encountered?
- Have you taken those lessons learned and updated your business continuity plans?
- Are you planning to conduct exercises to test updated plans?

Don't Have to Start from Scratch!



**ANNEX:
Pandemic
Plan**

**Business
Continuity
Plan**

Employers Play a Critical Role for Pandemic Planning and Response

- Protect employees' health
 - Adapt human resources policies – flexible, non-punitive SICK LEAVE
 - Establish safer workplace environment (space, ventilation, cleaning)
 - Ensure policies align with public health guidance (masks, vaccination)
- Provide critical products and services to the community
- Serve as community leaders
 - Collaboration with public health and emergency management
- Contribute to response and recovery

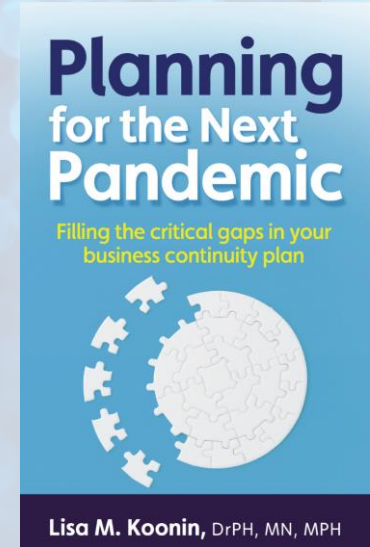
Planning for a Future Infectious Disease Pandemic



Do you have the right plan, team, and policies in place?

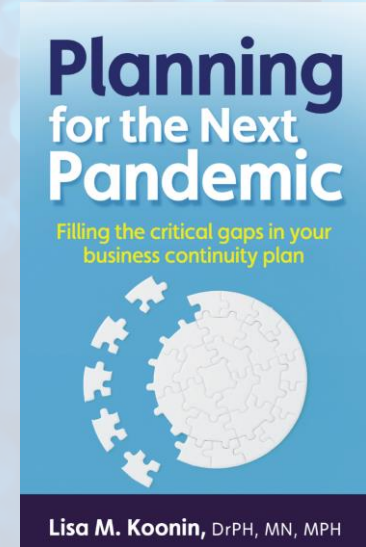
Planning for a Future Infectious Disease Pandemic

- Establish **ongoing threat monitoring** by securing information from **reliable sources**



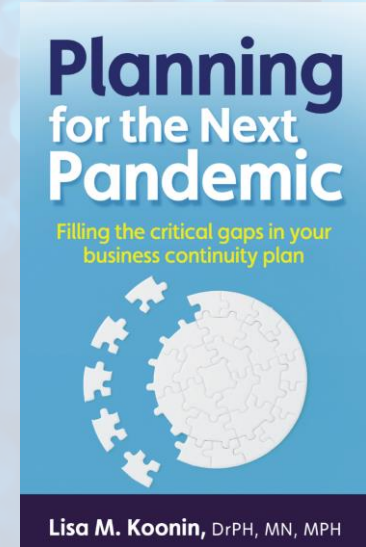
Planning for a Future Infectious Disease Pandemic

- Establish **ongoing threat monitoring** by securing information from **reliable sources**
- Update your business continuity plans to **include planning for infectious disease threats**



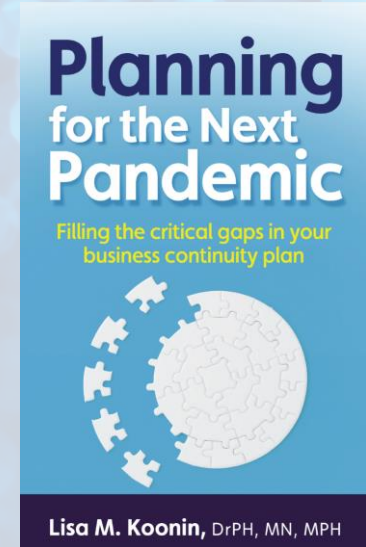
Planning for a Future Infectious Disease Pandemic

- Establish **ongoing threat monitoring** by securing information from **reliable sources**
- Update your business continuity plans to **include planning for infectious disease threats**
- Conduct training and realistic **exercises** to inform updating plans



Planning for a Future Infectious Disease Pandemic

- Establish **ongoing threat monitoring** by securing information from **reliable sources**
- Update your business continuity plans to **include planning for infectious disease threats**
- Conduct training and realistic **exercises** to inform updating plans
- Plan to pivot – Create **flexibility** within your plan



Leverage Everyday Opportunities (Flu Season) to Prepare for a Pandemic

CDC estimates* that, from **October 1, 2023** through **November 25, 2023**, there have been:

1.8 – 3.6 million
flu **illnesses**



810,000 – 1,700,000
flu **medical visits**



17,000 – 36,000
flu **hospitalizations**



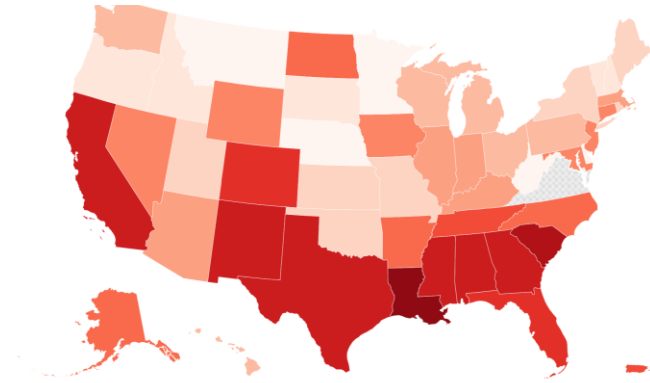
1,100 – 3,100
flu **deaths**



Influenza-Like Illness Activity Level, by State

Louisiana and South Carolina saw the highest levels of activity in the week ending Nov. 25.

Activity Level: 1  13



Source: Centers for Disease Control and Prevention

Ensure Sick People Stay at Home Promote Flu Vaccination!



Feeling sick?
Stop the spread of flu in the workplace.
Stay home when you are sick.

Common Flu Signs & Symptoms Include:

Make It Your Business To Fight The Flu.

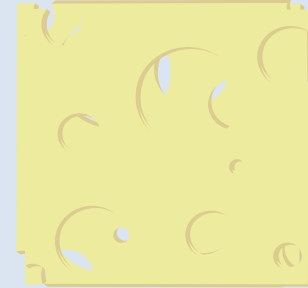
Learn how businesses and employers can promote flu vaccination.



<https://www.cdc.gov/flu/business/index.htm>

A Successful Pandemic Response Requires:

- Preparation
- Leadership
- Communication
- Flexibility
- Layered Approach



Mecher, Koonin. Hatchett,
2006

My Crystal Ball Isn't Clear.... BUT --

**Preparation is
needed!**

Thank you!



**Health
Preparedness
Partners™**

Lisa M. Koonin, DrPH, MN, MPH

Founder & Principal

Health Preparedness Partners

<https://www.healthpreparednesspartners.com/>



CDC COVID-19 Ventilation Guidance

**Kenneth R. Mead
Stephen B. Martin, Jr.**

December 5, 2023

DISCLAIMERS

- *The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC).*
- *Mention of any company or product does not constitute endorsement by NIOSH, CDC.*
- *Citations to websites external to NIOSH, CDC do not constitute NIOSH, CDC endorsement of the sponsoring organizations or their programs or products. Furthermore, NIOSH, CDC is not responsible for the content of these websites.*

CDC COVID-19 Ventilation Guidance Updates Released May 12, 2023



Opinion | We might be on the verge of an indoor air quality revolution

By Joseph G. Allen
May 15, 2023 at 3:39 p.m. EDT



Source: Washington Post

CDC sets first target for indoor air ventilation to prevent spread of Covid-19

By Brenda Goodman
Published 5:51 PM EDT, Fri May 12, 2023



Opinion | The CDC takes a step toward virus-free air in schools and offices

By the Editorial Board
+ Follow
May 15, 2023 at 6:29 p.m. EDT



Source: CNN Health



Source: Washington Post



CDC COVID-19 Ventilation Guidance Updates

Objective: Use improved ventilation to reduce potential infectious aerosol concentrations within occupied indoor spaces.

Toxicology Refresher (from an engineer!)

- Dose of infectious aerosols:
 - Airborne dose: function of the **concentration**, time, and inhalation rate
 - Surface contamination: function of **concentration**, settling rates, and time between cleanings
 - Common variables: **concentration** and time
- Time is largely an administrative variable, addressed using administrative controls.
- **Concentration** is the variable we can help control through the use of improved building ventilation.

Ventilation

Definition: Ventilation is a term with different meanings to different people. For the purpose of our webpage, “ventilation” includes:

- Indoor air movement and dilution of viral particles through mechanical or nonmechanical (also called natural) means.
- Filtration through central heating, ventilation and air conditioning (HVAC) systems and/or in-room air cleaners (portable or permanently mounted).*
- Air treatment with Ultraviolet Germicidal Irradiation (UVGI) systems (also called Germicidal Ultraviolet or GUV).*

* These air cleaning techniques are sometimes referred to as “equivalent ventilation.” They are not a substitute for meeting minimum outdoor air delivery requirements that may be specified in national, state, and local building codes.



CDC COVID-19 Ventilation Guidance Updates

Two products:

- UPDATE - Ventilation in Buildings:
<https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html>
- NEW - Improving Ventilation in Buildings:
 - <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/improving-ventilation-in-buildings.html>



CDC COVID-19 Ventilation Guidance Updates

Ventilation in Buildings:

<https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html>

- Last Update June 2, 2021
- Since the last update:
 - Feedback continued to accumulate
 - External partners in/out of government
 - Incoming questions to CDC/Info and other activities within the CDC COVID-19 response
 - New and evolving guidance from external sources
 - Evolving knowledge on the science of transmission and intervention strategies
 - Opportunity to address new or update existing FAQs



CDC COVID-19 Ventilation Guidance Updates

Improving Ventilation in Buildings:

<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/improving-ventilation-in-buildings.html>

New Page when released.



CDC COVID-19 Ventilation Guidance Updates

Improving Ventilation in Buildings:

<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/improving-ventilation-in-buildings.html>

Description

- Approximately 2-page document with text, graphics and inserts.
- Located in different section of CDC COVID web guidance, but still links back to main *Ventilation In Buildings* webpage.
- Intended for use by lay audience as a tool for understanding or guiding conversations about ventilation improvement options.
- Can help building occupants identify what questions to ask of their building owners/managers.
- Serves as a simplified summary for those who want to incorporate ventilation interventions in their messaging.



CDC COVID-19 Ventilation Guidance Updates

Improving Ventilation in Buildings:

<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/improving-ventilation-in-buildings.html>

Summary List of Actions

- Know how your building's HVAC systems work, ensure that it operates as it should and gets regular maintenance. Consider improving or upgrading older systems.
- Increase air filtration in your HVAC system. Use MERV 13 or higher filters that fit well within the filter rack.
- Use air cleaners (also called air purifiers) with high-efficiency filters. Select a device that is appropriate for the size of your space.
- Aim for at least 5 air changes per hour (ACH).



CDC COVID-19 Ventilation Guidance Updates

Improving Ventilation in Buildings:

<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/improving-ventilation-in-buildings.html>

Summary List of Actions (continued)

- Bring fresh, outdoor air into rooms by opening windows and doors.
- Turn on exhaust fans and use other fans to improve air flow.
- Turn your thermostat to the "ON" position instead of "AUTO" whenever the room is occupied.
- Consider installing a UV air treatment system to “kill” viral particles in the indoor air. (Note this is an energy efficient way to boost a room’s ACH).
- Use portable carbon dioxide (CO₂) monitors to determine how fresh or stale the air is in rooms. Readings higher than 800 ppm may suggest that you may need to bring in more fresh air.



How Much Ventilation Is Enough?

Aim for 5 Air Changes per Hour (ACH)

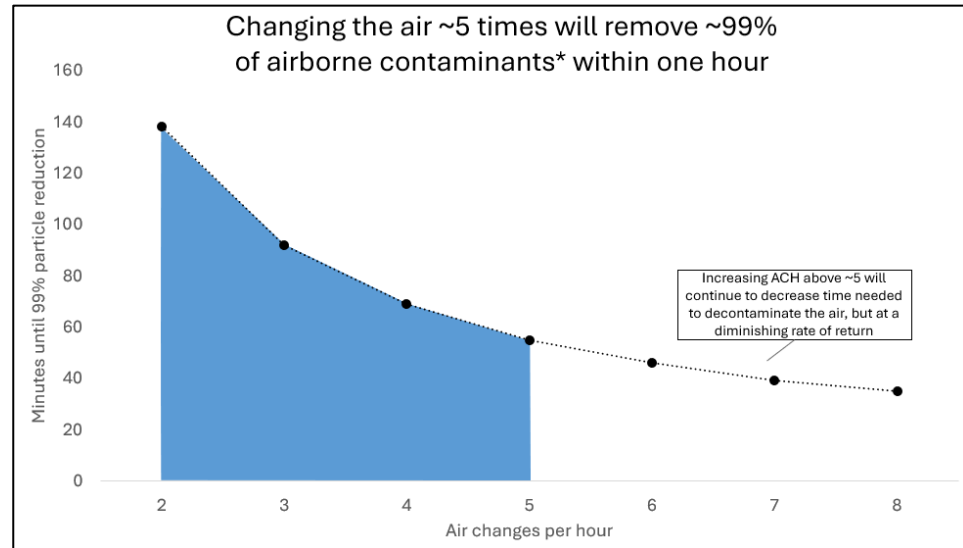
- When possible, aim for 5 or more air changes per hour (ACH) of clean air to help reduce the number of germs in the air. This can be achieved through any combination of central ventilation system, natural ventilation, or additional devices that provide equivalent ACH to your existing ventilation.
- While there is insufficient science to identify an optimum ventilation strategy for all spaces, 5 ACH is what portable air cleaners provide (as eACH) when properly sized following the [Environmental Protection Agency's guidance](#) on the selection of portable air cleaners.

How Much Ventilation Is Enough?

Aim for 5 Air Changes per Hour

(Five) ACH will not guarantee totally safe air in any space, but it reduces the risk of exposure to germs and other harmful air contaminants.

- Rather than a hard-and-fast rule, the 5 ACH target provides a rough guide to air change levels likely to be helpful in reducing infectious particles.



Important Caveats:

- Assumes perfect mixing
- Assumes source has stopped

How Much Ventilation Is Enough?

Aim for 5 Air Changes per Hour (ACH) (continued)

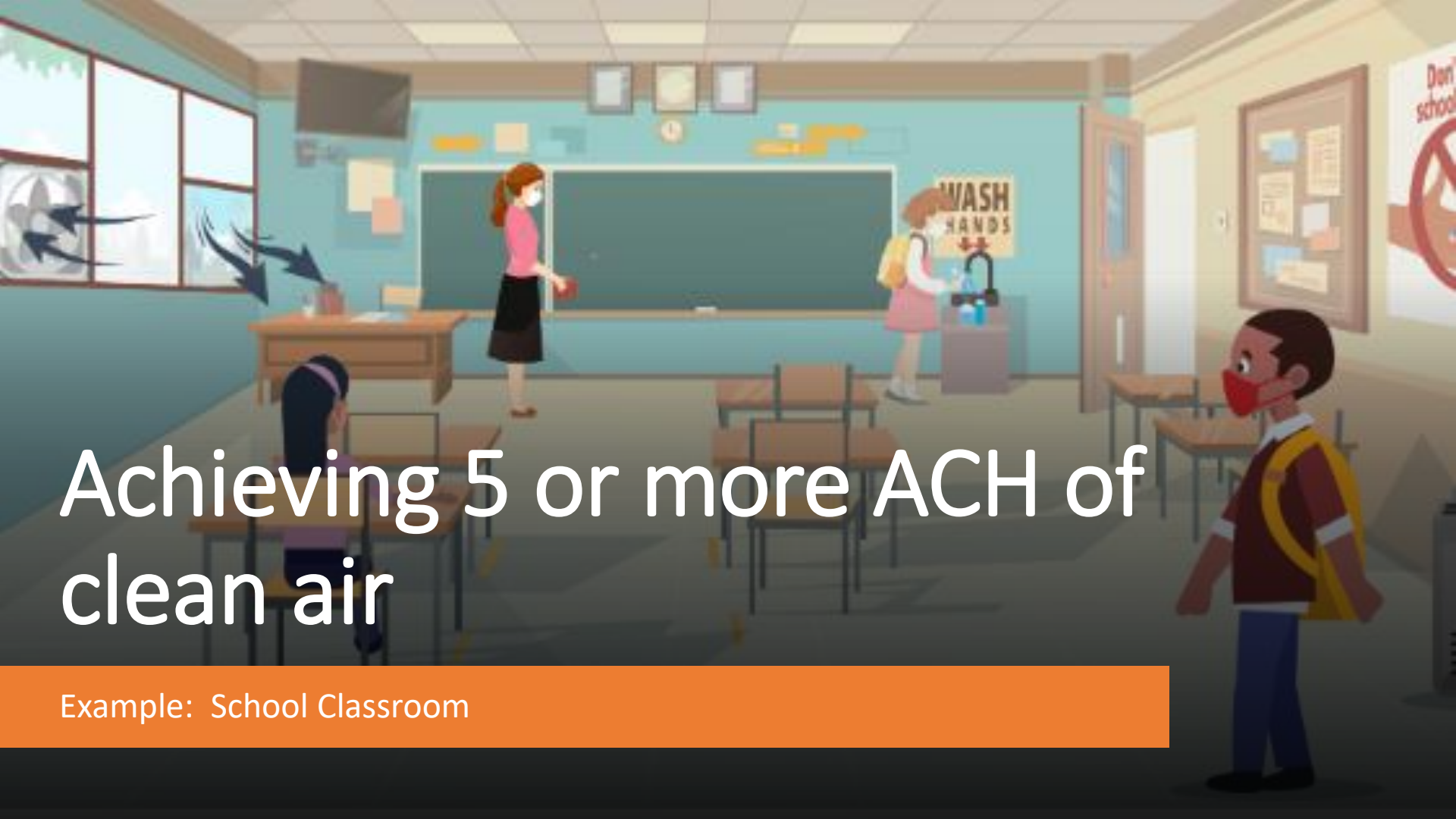
- Large volume spaces with very few occupants (e.g., a warehouse) may not require 5 ACH and spaces with high occupancy or higher-risk occupants may need higher than 5 ACH.
- While ACH levels higher than 5 (e.g., those used in airborne infection isolation rooms in hospitals) may reduce infectious aerosols further, the potential benefits of increased ventilation should be balanced with the additional upfront, periodic maintenance, and energy costs that may be incurred.
- A Lancet Commission Report that draws on available scientific evidence proposes ACH levels of 4 as “Good,” 6 as “Better,” and >6 as “Best,” underscoring that ACH (to include eACH) represents a continuum.



CDC COVID-19 Ventilation Guidance Updates

Related Comments

- Ventilation guidance is not compatible with a one-size-fits-all approach.
 - Both the main ventilation page and the plain-language document are sprinkled with persistent caveats indicating that a particular recommendation may not be a good fit for all scenarios.
- ASHRAE (professional engineering association who writes ventilation standards) recently developed a new standard on ventilation design and operation to protect against infectious aerosol exposures within indoor environments (Standard 241).
 - Published in July 2023.
 - Applicable to indoor environments during periods of higher exposure risk to infectious aerosols.
 - Some aspects of ASHRAE 241 could impact future changes to CDC ventilation guidance.
 - Pursuing methodology for performance validation of emerging technologies .
 - Although scope and purpose are different, CDC guidance envisioned as a contributor to the discussion on importance of ventilation which will hopefully fuel adoption of new ASHRAE standard.
- Significant research in/out of CDC and government could impact future guidance.



Achieving 5 or more ACH of clean air

Example: School Classroom

Calculating ACH

To calculate the ACH (or eACH):

1. Determine (or measure) the airflow through the system in cubic feet per minute (cfm).
2. Determine the area of the room = length (ft) x width (ft)
3. Determine the height of the room (ft).
4. Calculate ACH:

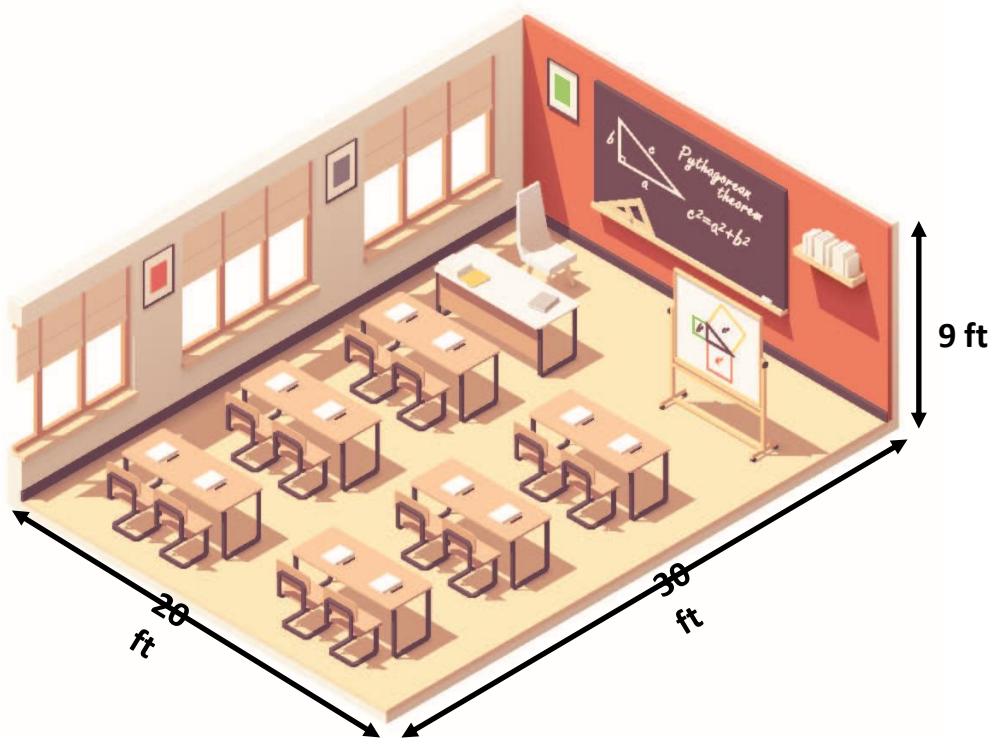
$$\text{ACH} = \frac{\text{cfm} \times 60}{\text{Area} \times \text{Height}}$$

5. When multiple strategies are used, repeat the ACH calculation for each system then add together for a total ACH value (which could be compared to the minimum 5 ACH recommendation).

Note: See [FAQ #2](#) and [FAQ #5](#) for examples on how the ACH calculation may be applied.

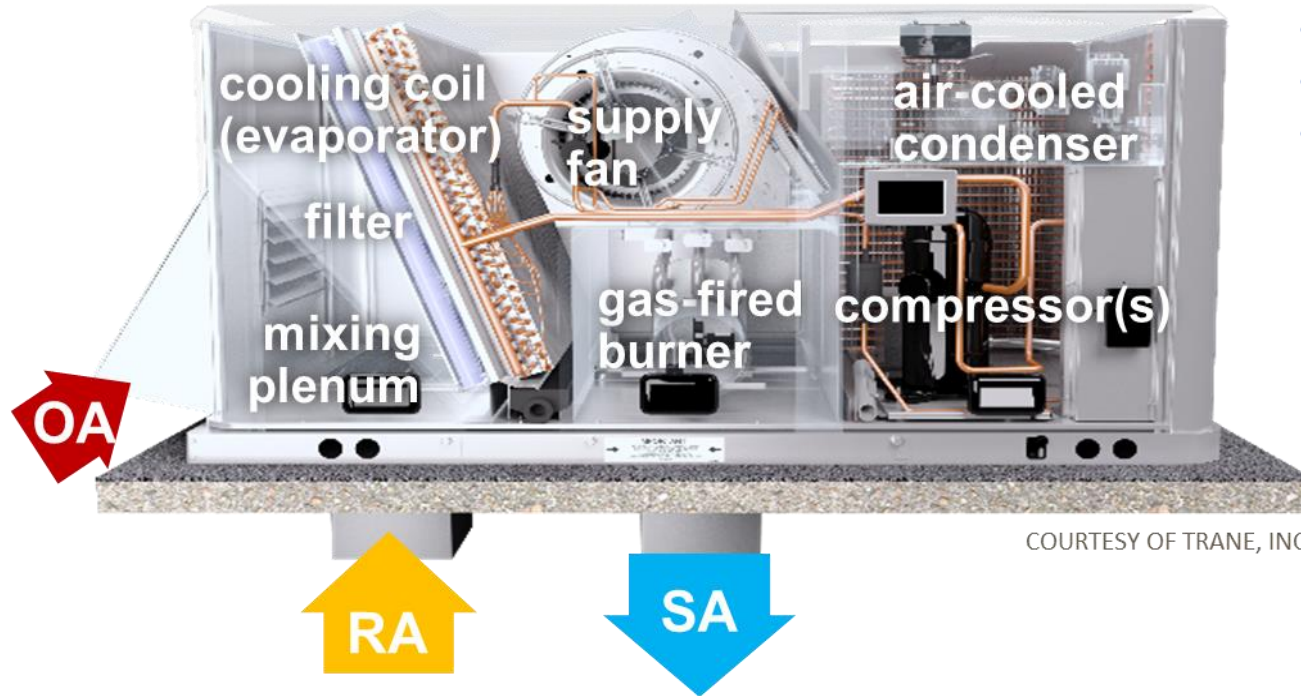
From: [Ventilation in Buildings | CDC](#)

School Classroom



- Area = 30 ft × 20 ft = 600 ft²
 - Ceiling height = 9 ft
 - 20 students (age 9+)
 - 1 teacher
-
- Served by rooftop air handling unit
 - Total supply air = 400 cfm
 - Meets current ventilation code
 - Filter upgraded to MERV 13

School Classroom: Rooftop Air Handling Unit

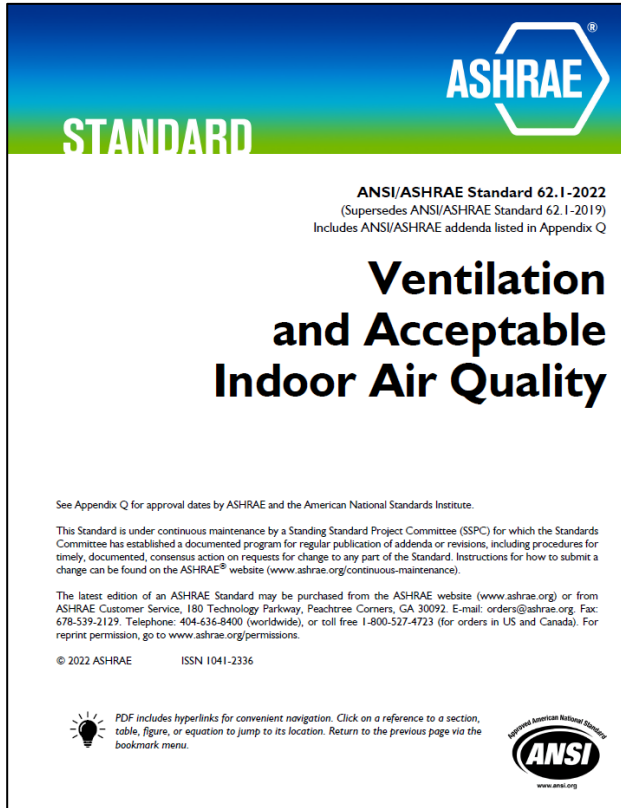


- OA = Outdoor Air
- RA = Return Air
- SA = Supply Air

$$SA = OA + RA$$
$$SA = 400 \text{ cfm}$$

COURTESY OF TRANE, INC.

School Classroom: Meets Current Code



PURPOSE

Specify minimum ventilation rates and other measures intended to provide indoor air quality that is acceptable to human occupants and that minimizes adverse health effects.

Regulatory application to new buildings, additions to existing buildings, and those changes to existing buildings that are identified in the body of the standard.

APPLICABILITY

Most spaces indoor spaces with two notable exceptions:

- Health Care Spaces (Standard 170-2021)
- Residential (Standard 62.2-2022)

School Classroom: Meets Current Code

ANSI/ASHRAE Standard 62.1-2022

- Three methods: Ventilation Rate Procedure is most common.
- Only prescribes the amount of outdoor air:
 - cfm/person
 - cfm/ft²

$$OA = (10 \text{ cfm/person})(21 \text{ people}) + (0.12 \text{ cfm/ft}^2)(600 \text{ ft}^2) = 282 \text{ cfm}$$

Table 6-1 Minimum Ventilation Rates in Breathing Zone

Occupancy Category	People Outdoor Air Rate R_p		Area Outdoor Air Rate R_a		Default Values		OS (6.2.6.1.4)
	cfm/person	L/s/person	cfm/ft ²	L/s/m ²	Occupant Density #/1000 ft ² or #/100 m ²	Air Class	
Educational Facilities							
Art classroom	10	5	0.18	0.9	20	2	
Classrooms (ages 5 to 8)	10	5	0.12	0.6	25	1	
Classrooms (age 9 plus)	10	5	0.12	0.6	35	1	
Computer lab	10	5	0.12	0.6	25	1	
Daycare sickroom	10	5	0.18	0.9	25	3	
Daycare (through age 4)	10	5	0.18	0.9	25	2	
Lecture classroom	7.5	3.8	0.06	0.3	65	1	✓
Lecture hall (fixed seats)	7.5	3.8	0.06	0.3	150	1	✓
Libraries	5	2.5	0.12	0.6	10		
Media center	10	5	0.12	0.6	25	1	
Multiruse assembly	7.5	3.8	0.06	0.3	100	1	✓
Music/theater/dance	10	5	0.06	0.3	35	1	✓
Science laboratories	10	5	0.18	0.9	25	2	
University/college laboratories	10	5	0.18	0.9	25	2	
Wood/metal shop	10	5	0.18	0.9	20	2	

School Classroom: ACH from Outdoor Air

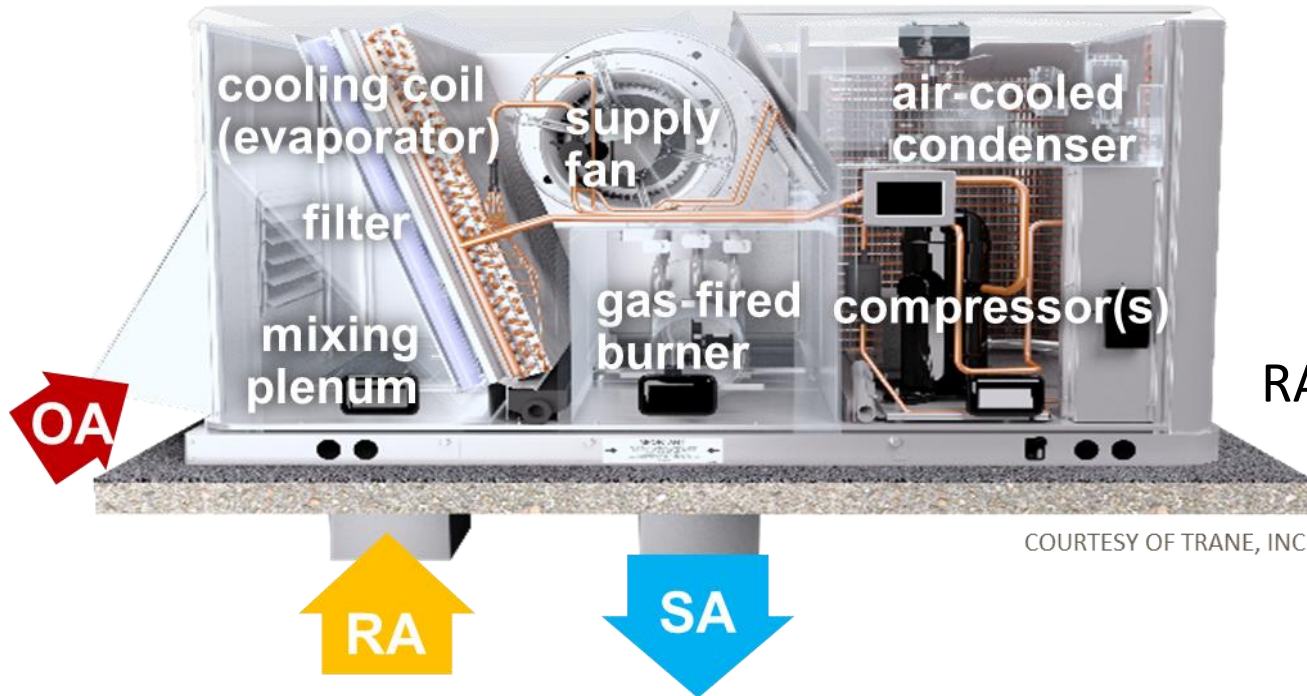
- Outdoor air is considered “clean” with respect to infectious aerosols.
- Get 100% credit.
- Do not get double credit for filtering outdoor air.

$$OA = 282 \text{ cfm (282 ft}^3\text{/min)}$$

$$ACH_{OA} = \frac{(282 \text{ ft}^3\text{/min}) \times (60 \text{ min/hr})}{(600 \text{ ft}^2) \times (9 \text{ ft})}$$

$$ACH_{OA} = 3.13 \approx 3$$

School Classroom: Rooftop Air Handling Unit



COURTESY OF TRANE, INC.

- OA = 282 cfm
- RA = ?
- SA = 400 cfm

$$SA = OA + RA$$

$$RA = SA - OA$$

$$RA = 400 \text{ cfm} - 282 \text{ cfm}$$


$$RA = 118 \text{ cfm}$$

School Classroom: ACH from Return Air

- Return air is NOT considered “clean” with respect to infectious aerosols.
- Get partial credit based on filtration efficiency.

Table 12-1 Minimum Efficiency Reporting Value (MERV) Parameters

Standard 52.2 Minimum Efficiency Reporting Value (MERV)	Composite Average Particle Size Efficiency, % in Size Range, μm			
	Range 1 0.30 to 1.0	Range 2 1.0 to 3.0	Range 3 3.0 to 10.0	Average Arrestance, %
1	N/A	N/A	$E_3 < 20$	$A_{avg} < 65$
2	N/A	N/A	$E_3 < 20$	$65 \leq A_{avg}$
3	N/A	N/A	$E_3 < 20$	$70 \leq A_{avg}$
4	N/A	N/A	$E_3 < 20$	$75 \leq A_{avg}$
5	N/A	N/A	$20 \leq E_3$	N/A
6	N/A	N/A	$35 \leq E_3$	N/A
7	N/A	N/A	$50 \leq E_3$	N/A
8	N/A	$20 \leq E_2$	$70 \leq E_3$	N/A
9	N/A	$35 \leq E_2$	$75 \leq E_3$	N/A
10	N/A	$50 \leq E_2$	$80 \leq E_3$	N/A
11	$20 \leq E_1$	$65 \leq E_2$	$85 \leq E_3$	N/A
12	$35 \leq E_1$	$80 \leq E_2$	$90 \leq E_3$	N/A
13	$50 \leq E_1$	$85 \leq E_2$	$90 \leq E_3$	N/A
14	$75 \leq E_1$	$90 \leq E_2$	$95 \leq E_3$	N/A
15	$85 \leq E_1$	$90 \leq E_2$	$95 \leq E_3$	N/A
16	$95 \leq E_1$	$95 \leq E_2$	$95 \leq E_3$	N/A



STANDARD


ANSI/ASHRAE Standard 52.2-2017
(Supersedes ANSI/ASHRAE Standard 52.2-2012)
Includes ANSI/ASHRAE addenda listed in Appendix H

**Method of Testing
General Ventilation
Air-Cleaning Devices
for Removal Efficiency
by Particle Size**

See Informative Appendix H for approval dates by the ASHRAE Standards Committee, the ASHRAE Technology Committee, and the American National Standards Institute.

This Standard is under continuous maintenance by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the Standard. The change submittal form, instructions, and deadlines may be obtained in electronic form from the ASHRAE website (www.ashrae.org) or in paper form from the Senior Manager of Standards. The latest edition of an ASHRAE Standard may be purchased from the ASHRAE website (www.ashrae.org) or from ASHRAE Customer Service, 1791 Tullie Circle, NE, Atlanta, GA 30329-2305. E-mail: orders@ashrae.org. Fax: 678-539-2129. Telephone: 404-636-8400 (worldwide), or toll free 1-800-527-4723 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/permissions.

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School Classroom: ACH from Return Air

- Return air is NOT considered “clean” with respect to infectious aerosols.
- Get partial credit based on filtration efficiency.
- MERV 13 filters are 85% efficient against 1.0 – 3.0 μm particles.
- 85% of the air passing through a MERV 13 filter is “clean.”
- See FAQ # 3 at CDC’s [Ventilation in Buildings | CDC](#) webpage.

$$\text{RA} = 118 \text{ cfm} \times 0.85 = 100 \text{ cfm} \text{ (100 ft}^3\text{/min)}$$

$$\text{ACH}_{\text{RA}} = \frac{(100 \text{ ft}^3\text{/min}) \times (60 \text{ min/hr})}{(600 \text{ ft}^2) \times (9 \text{ ft})}$$

$$\text{ACH}_{\text{RA}} = 1.11 \approx 1$$

$$\text{Total “Clean” ACH} = \text{ACH}_{\text{OA}} + \text{ACH}_{\text{RA}} = 3 + 1 = 4 \text{ ACH (less than 5)}$$



School Classroom: What Now?

- We need about 100 more cfm of clean air in order to meet the minimum 5 ACH target.
- To account for mixing inefficiencies and since classrooms are a little more crowded than many other indoor spaces, we might choose to meet and moderately exceed this value by:
 - Evaluating to see if the HVAC system is capable of providing a higher total air flow rate.
 - Use of a portable or ceiling-mounted HEPA air cleaners.
 - Use of a window fan of known flow rate in exhaust orientation in a window, while other windows are opened slightly to allow increased incoming air.
 - Use of upper-room UVGI.

Questions?

- Stephen B. Martin, Jr. (smartin1@cdc.gov)
- Kenneth R. Mead (kmead@cdc.gov)





Technologies for
Pandemic Defense

Respiratory protection in future pandemics

NSC SAFER Summit, 12/5/2023

Aman Patel | *Executive Director, Technologies for Pandemic Defense*



We faced dire PPE shortages in 2020.

We are likely to face PPE shortages again.

- Future pandemics are likely.
- Current government stockpiles won't be enough.
- In severe pandemics, disposable N95s may not provide enough protection.



Solution: reusable respirators.



Compared to N95 FFRs, reusable elastomeric respirators are:

- Safer
- Cheaper
- More worker-friendly



Even better respirators are possible.

Manufacturers can further innovate in **comfort, ease of use, fit sensing, etc.**

...but **there needs to be a strong market *before* a pandemic starts.**



What you can do.

- 1. Create a resilience cache of reusable elastomeric respirators.**

You can protect your organization's essential workers for 10 years, for \$20-\$40 each.

- 1. Encourage your peers and suppliers to do the same.**

We're all more protected when everyone has ample PPE.

We're happy to help point you to more resources!



Mental model:

Treat pandemic respiratory protection like **fire extinguishers**.





Summary

1. In future pandemics, **we are likely to face PPE shortages again.**
2. **Elastomeric respirators should be our default pandemic protection, not disposable N95s.**
3. **Employers can start creating resilience caches today.**

Thank you for making the world safer.

Contact: aman.patel@pandemicdefense.tech

Does Working from Home Have a Future?



Nick Bloom
Stanford University



Does WFH have a Future?

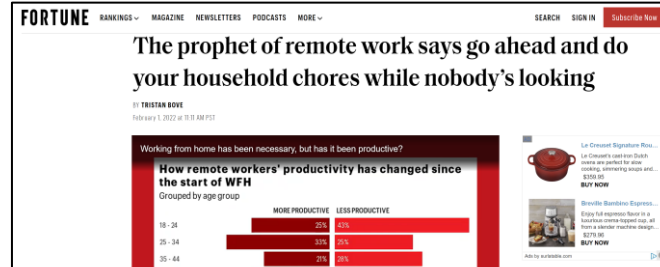
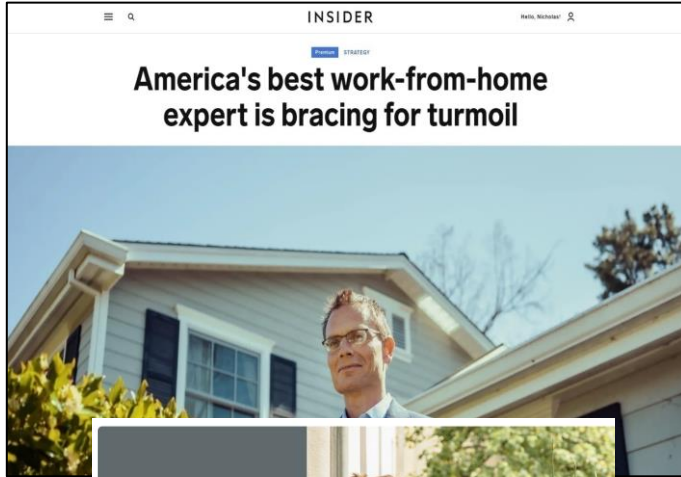
Nick Bloom (Stanford)

December 2023



Background and Data on Working From Home

- Research on WFH starting in 2004
- Monthly surveys of 10,000 working age adults and 5,000 firms
- Discussions with 100s of managers and organizations globally



Bloomberg
50

Nicholas Bloom

- He's emerged as a go-to academic for insight into remote work, meeting this year to share research with more than 100 institutions, including the International Monetary Fund, Wall Street banks and tech startups.

[READ MORE](#)

Going to cover three sections

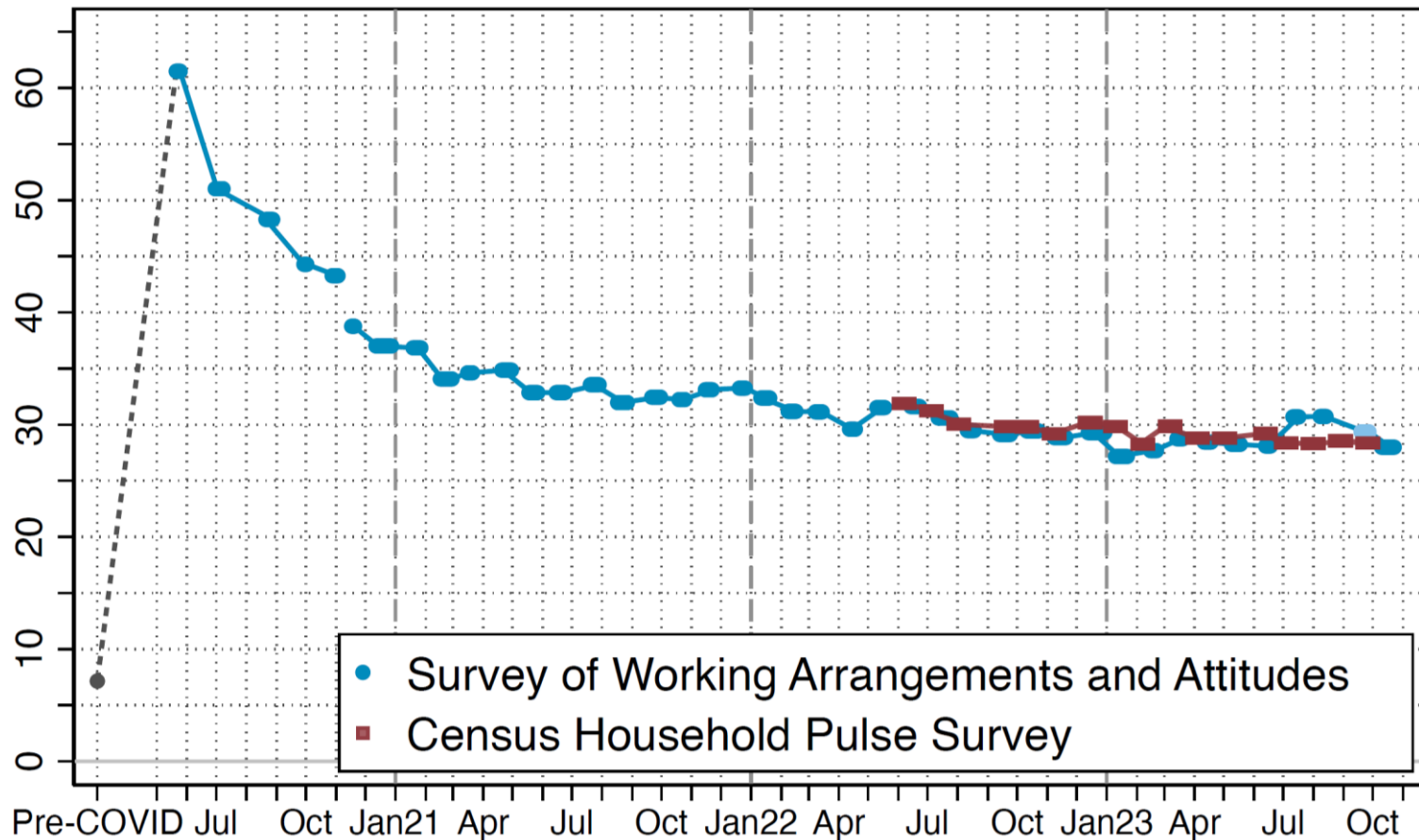
>>>> Current state of working from home

>>>> Thoughts on managing hybrid and remote

>>>> Three impacts on the economy

WFH is stabilizing at about 28% of days: a 5-fold jump vs 2019

US full days worked from home, %

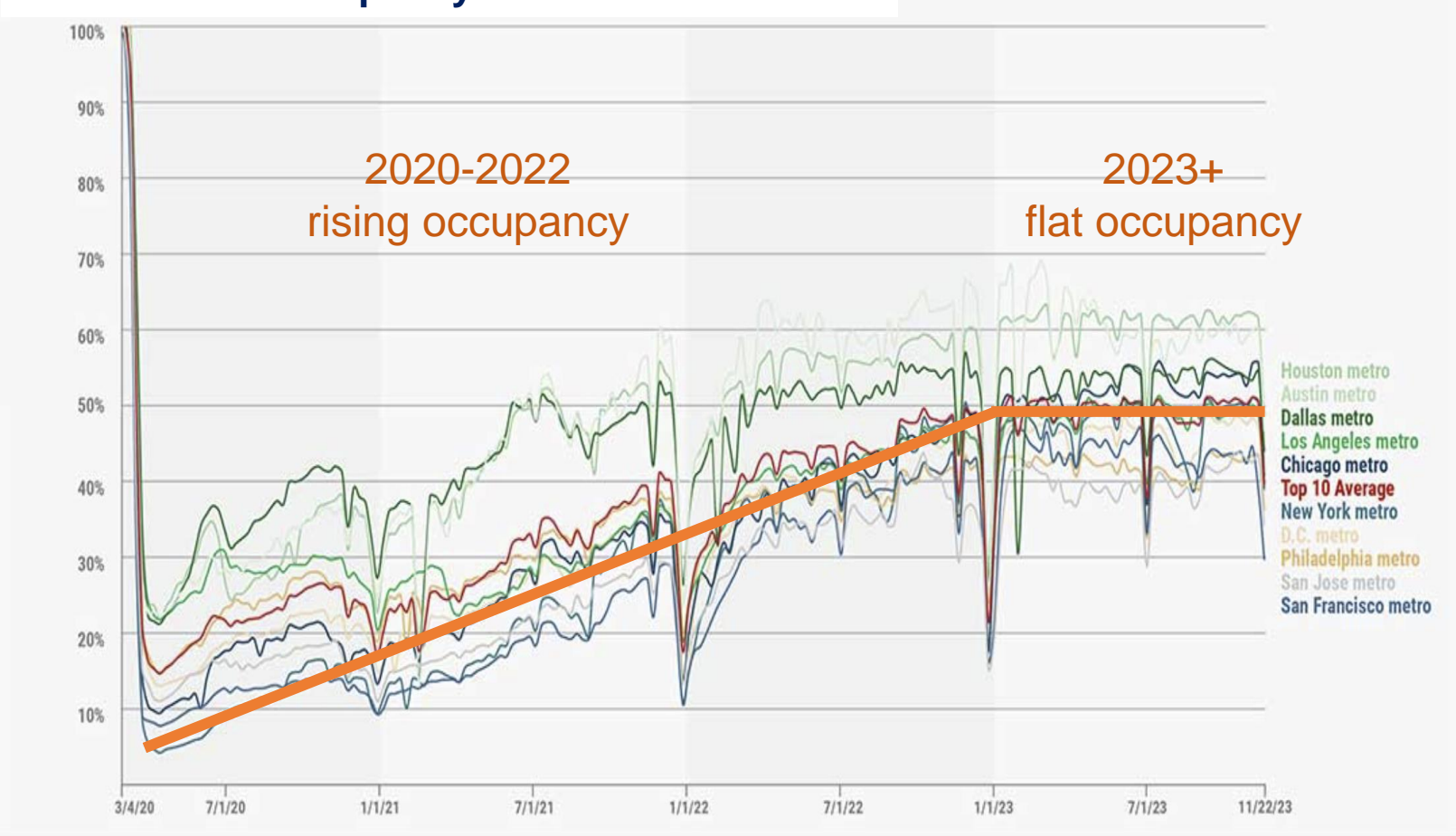


Source: N=143,410 (SWAA) N=432,904 (HHP). SWAA data from survey responses weighted to match the US population. Pre-covid data from the American Time Use Survey. CHPS respondents weighted to match the US population aged 20 to 64 in households with incomes above \$25,000.

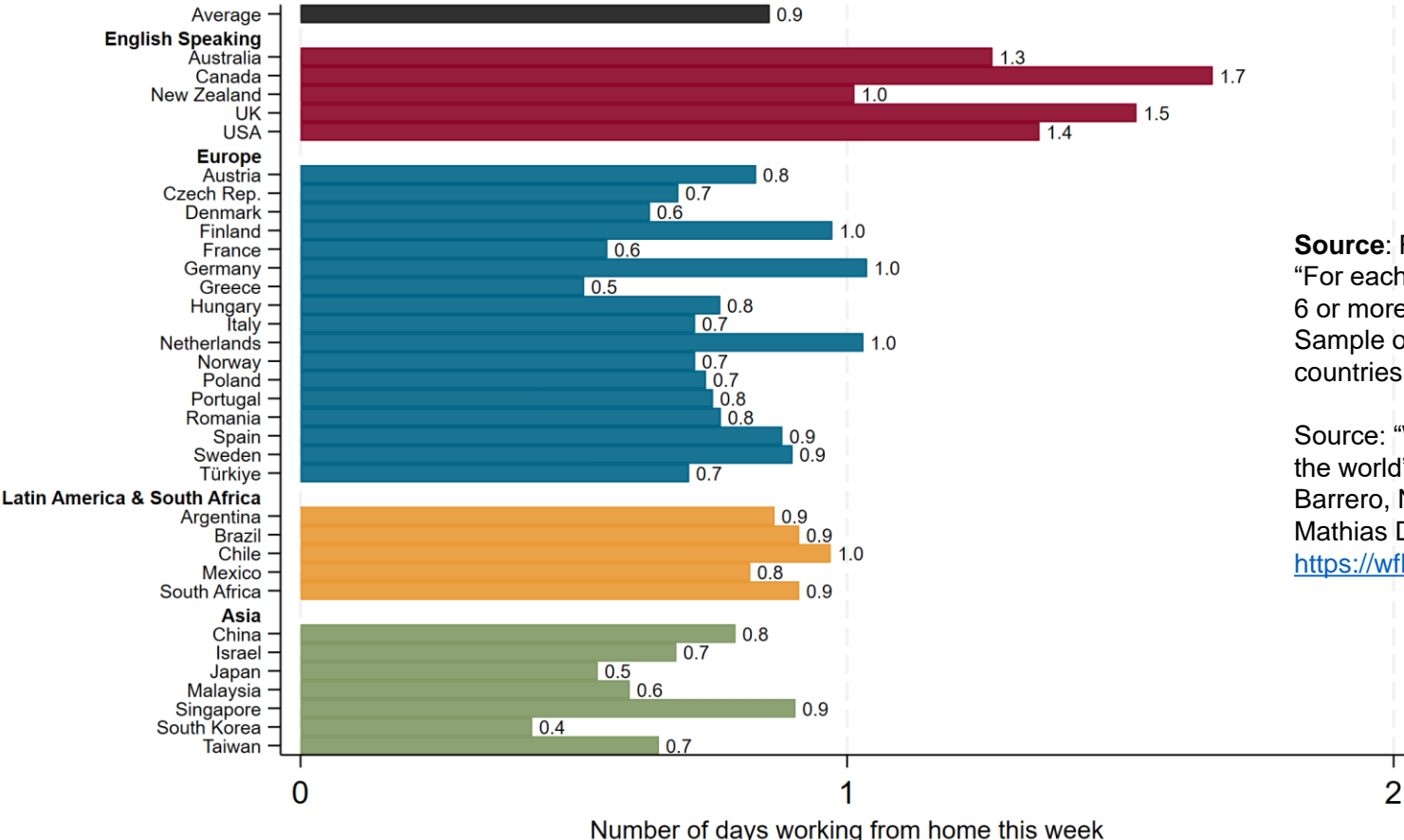
Survey of Workplace Attitudes and Arrangements (Barrero, Bloom and Davis 2021)
<https://wfhrefsearch.com/>

Office occupancy also stabilizing at about 50%

Kastle office occupancy data



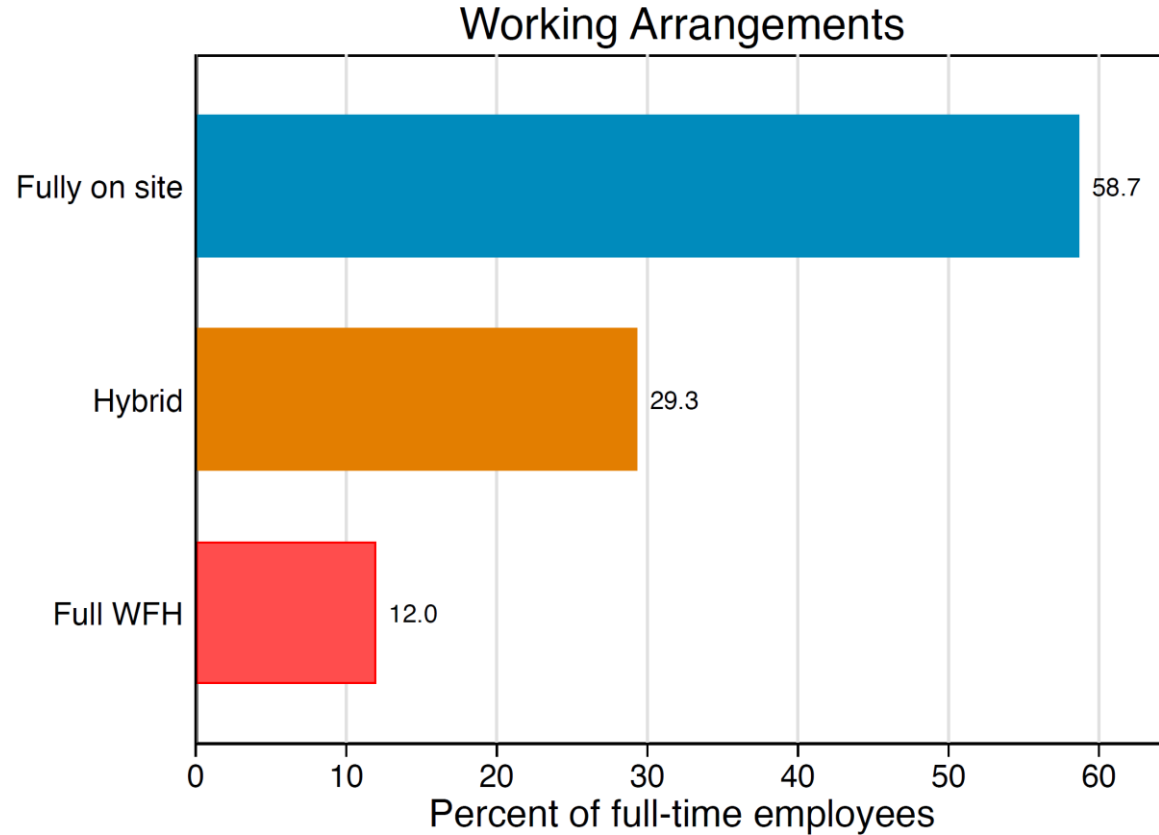
Globally (graduates): Highest in North America, UK and Australasia, then Europe, Latin America and South Africa and then Asia



Source: Responses to the question “For each day last week, did you work 6 or more hours, and if so where?”. Sample of N=42,426 workers in 34 countries surveyed in April-June 2023.

Source: “Working from home around the world” by Cevat Aksoy, Jose Barrero, Nick Bloom, Steve Davis, Mathias Dolls and Pablo Zarate. <https://wfhresearch.com/gswadata/>

Employees are split into three groups – most firms have some of all



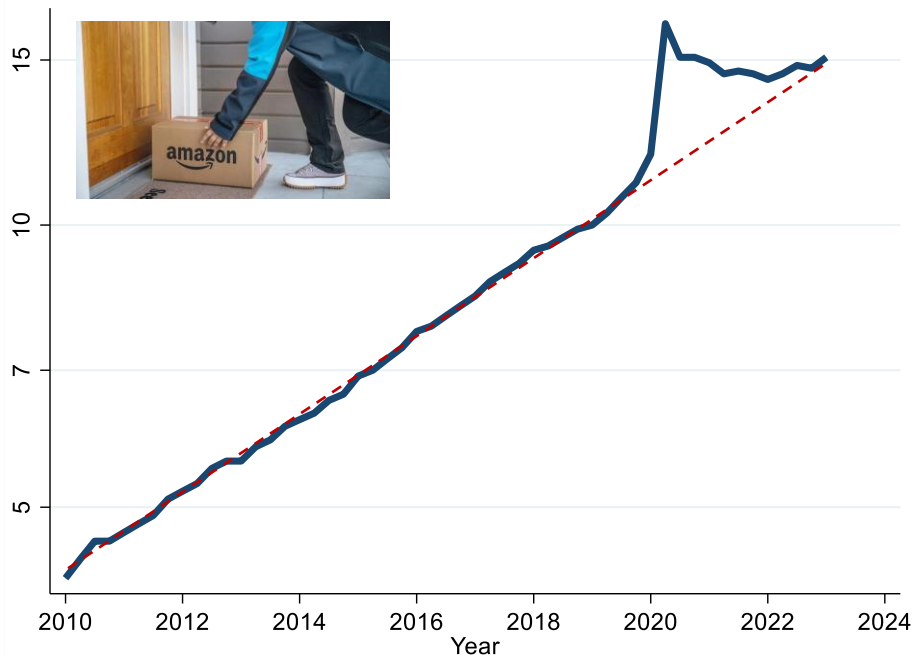
Front-line employees, mostly non-graduates, lower paid,

Professionals and managers, mostly graduates, higher paid

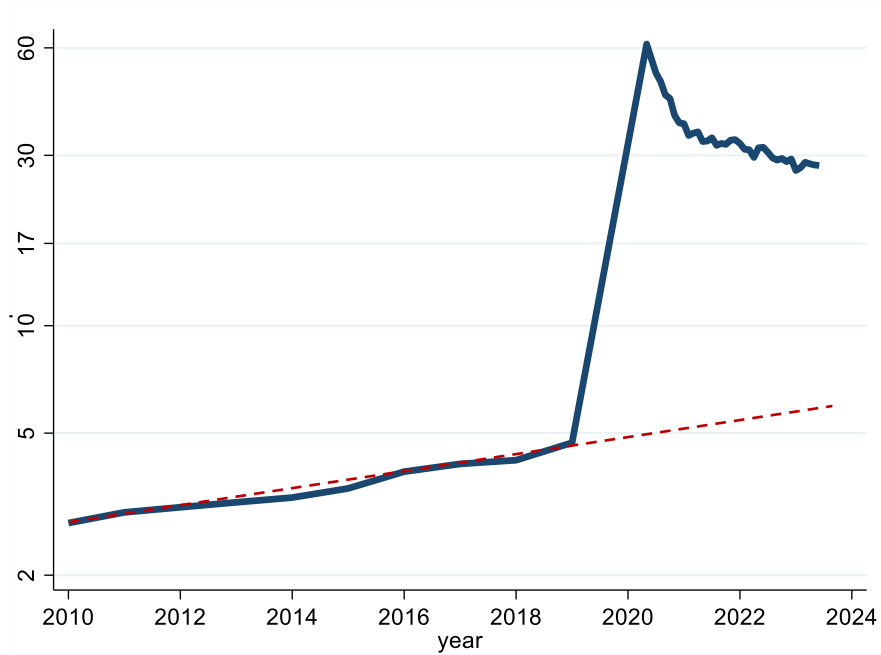
Specialized roles - IT support, payroll etc, often contractors

This rise in WFH is permanent - online shopping is back to its pre-trend, but WFH has stabilized at about 5x its pre-pandemic value

Share of retail spending online, %



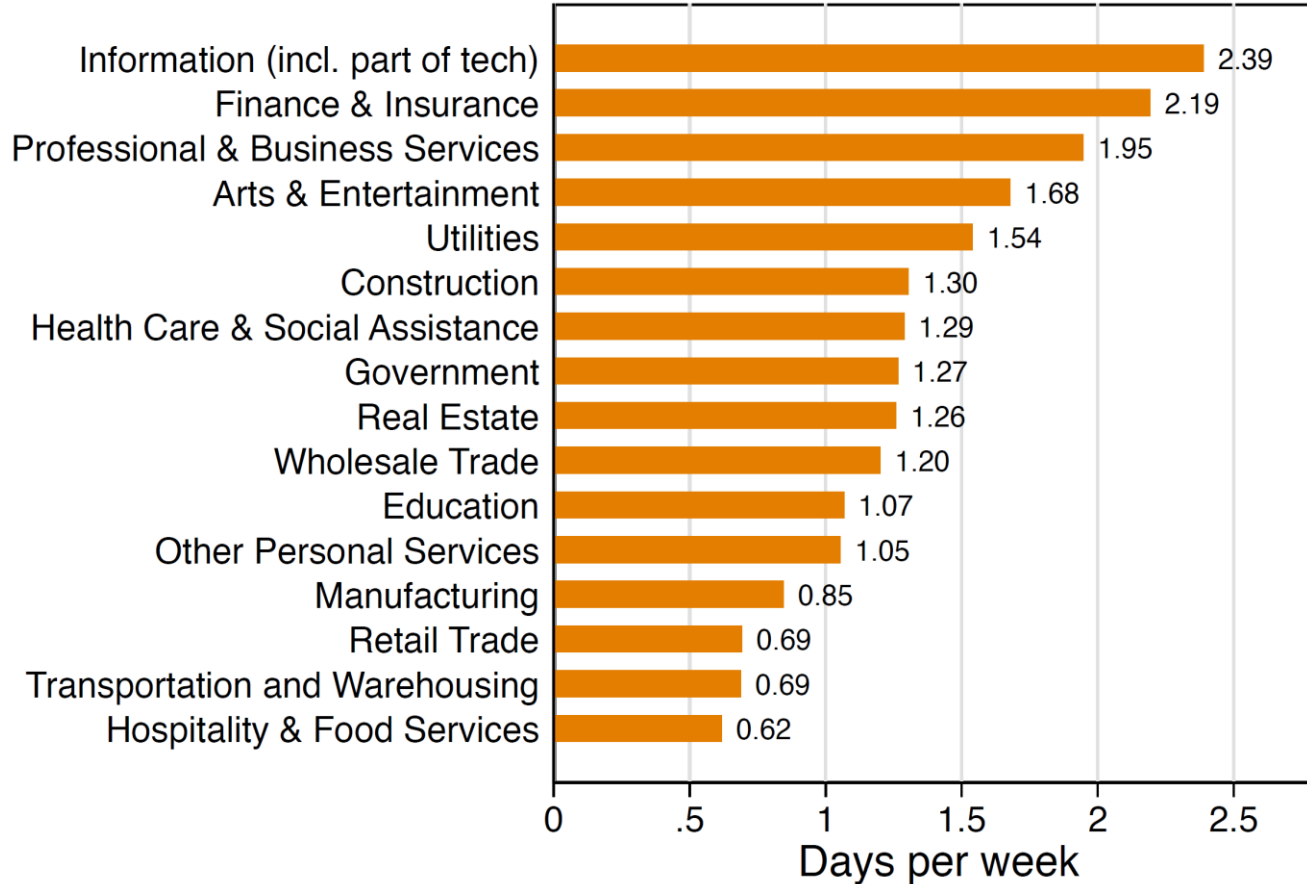
Share of days worked from home, %



Source: Retail data from the Census Bureau, quarterly seasonally adjusted <https://fred.stlouisfed.org/series/ECOMPCTSA> to 2022Q4. WFH data from the Survey of Workplace Arrangements and Attitudes www.wfhresearch.com Both data cover the United States.

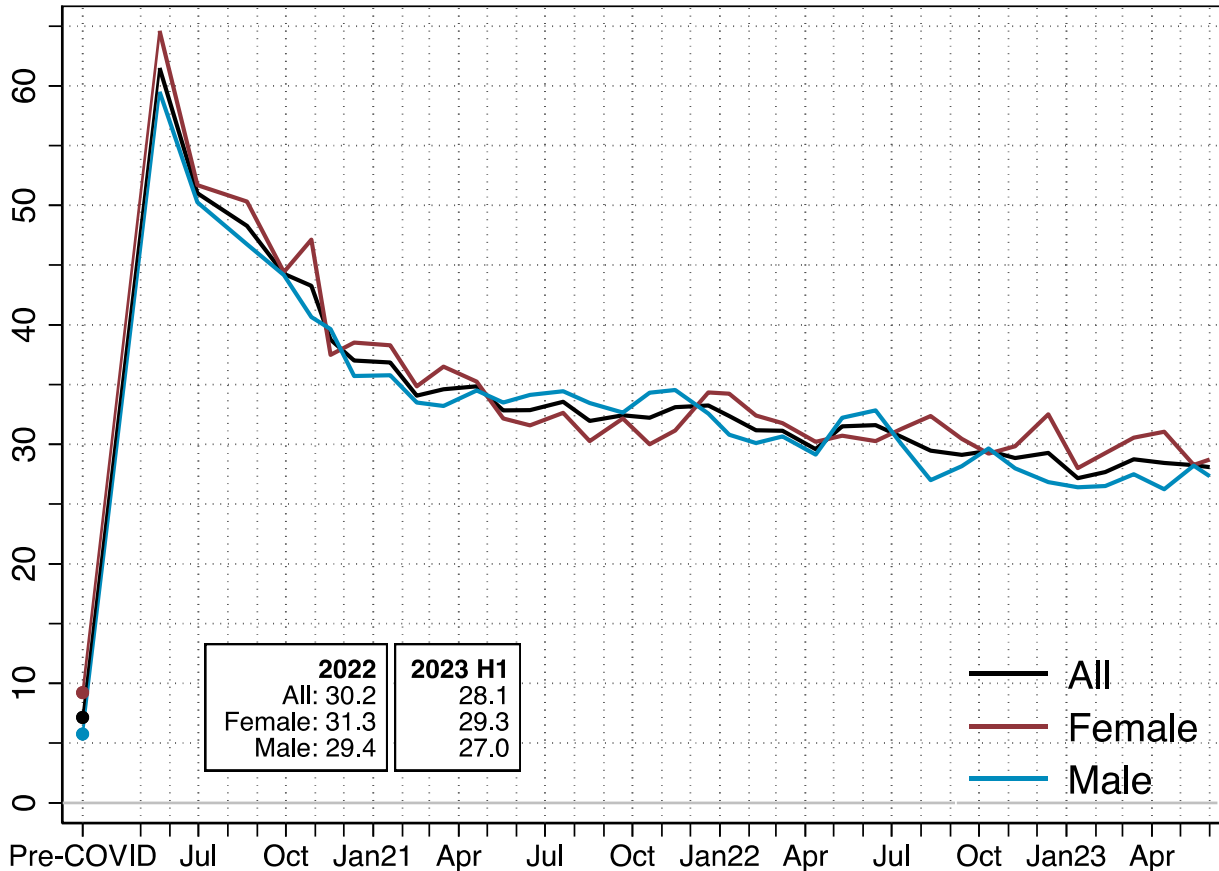
WFH particularly high in tech and (to a lesser extent) finance

Current WFH: all wage and salary employees by industry



Notes: Survey of Workplace Attitudes and Arrangements www.wfhresearch.com Sample from January 2023 to June 2023

WFH levels similar by gender (both are converging to 25%)



Source: Responses to the questions:

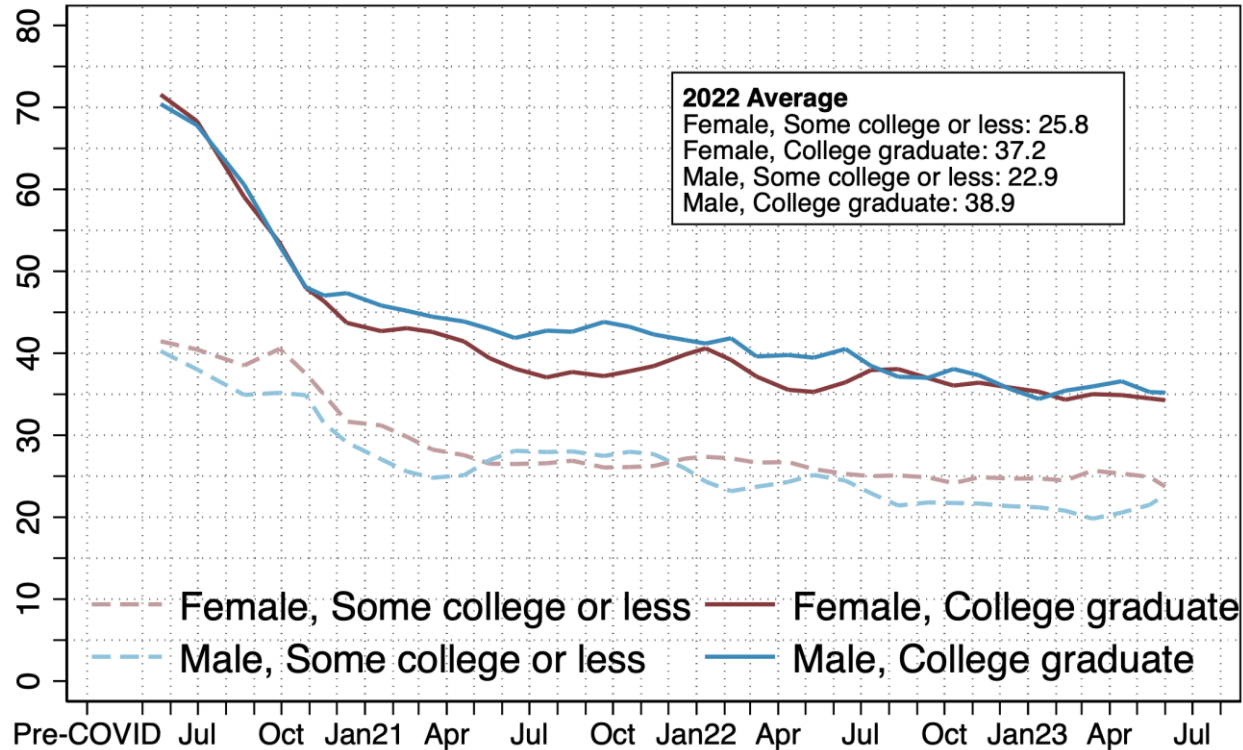
- **Currently (this week)** *what is your work status?*
- **For each day last week, did you work a full day (6 or more hours), and if so where?**

Notes: For each wave, we compute the percent of paid full days worked from home in the SWAA. The horizontal-axis location shows when the survey was in the field. The pre-COVID figure is from the 2017-2018 American Time Use Survey. Before November 2020, we asked the first question above. Since November 2021, we have asked the second question. From November 2020 to October 2021, we back-cast responses to the current question using a regression model based on current-question responses and another question (not shown). We re-weight the sample of US residents aged 20 to 64 earning \$10,000 or more in 2019 or 2021 to match CPS shares by age-sex-education-earnings cells.

N = 143,410

The big WFH gap is in education: college grads have $\approx 2x$ non-grads

Percentage of paid full days worked from home



SWAA data from May 2020 to June 2023
Smoothed with a 3 month centered moving average

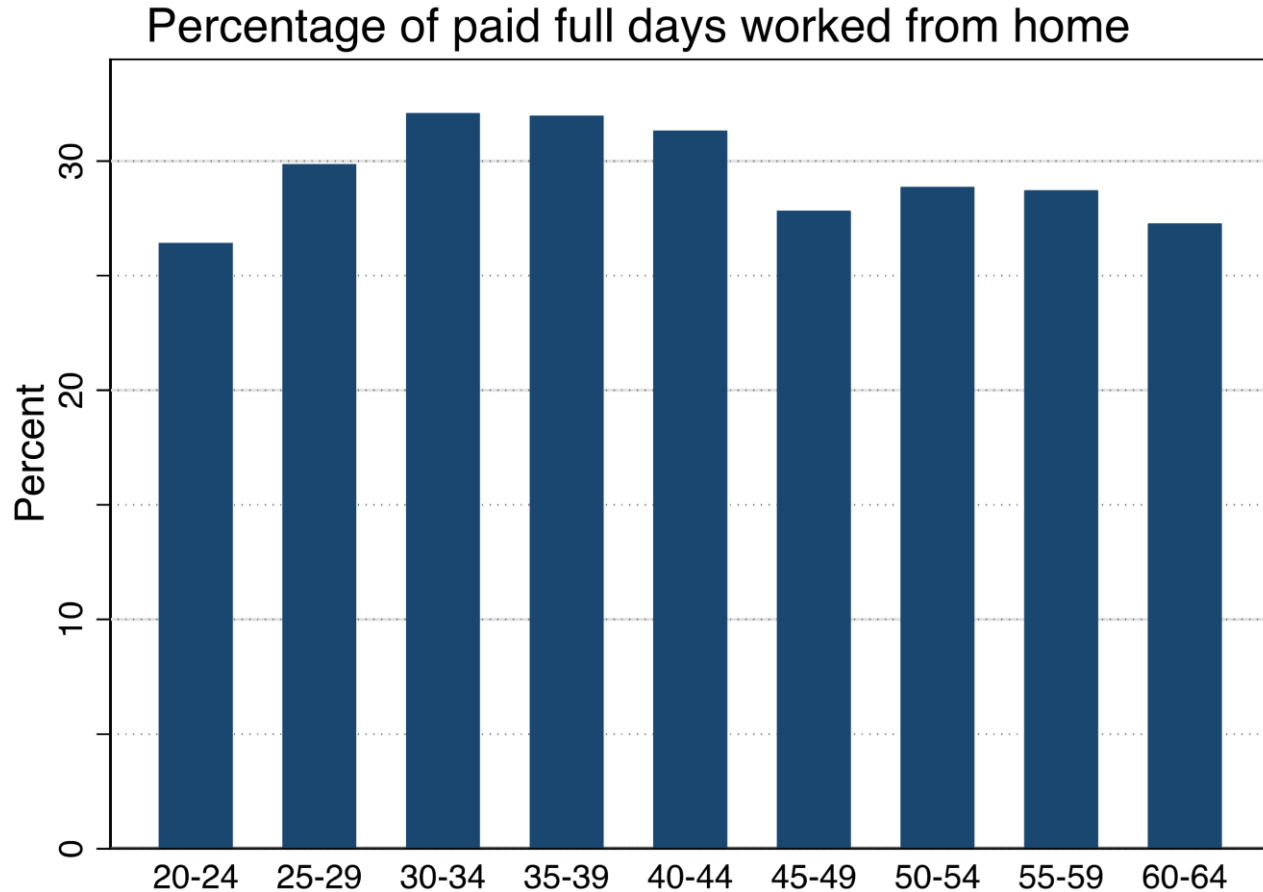
Source: Responses to the questions:

- **Currently (this week)** *what is your work status?*
- **For each day last week, did you work a full day (6 or more hours), and if so where?**

Notes: For each wave, we compute the percent of paid full days worked from home in the SWAA. The horizontal-axis location shows when the survey was in the field. We re-weight the sample of US residents aged 20 to 64 earning \$10,000 or more in 2019 or 2021 to match CPS shares by age-sex-education-earnings cells.

N = 143,511

Also see a hump-shape over the life-cycle in WFH levels

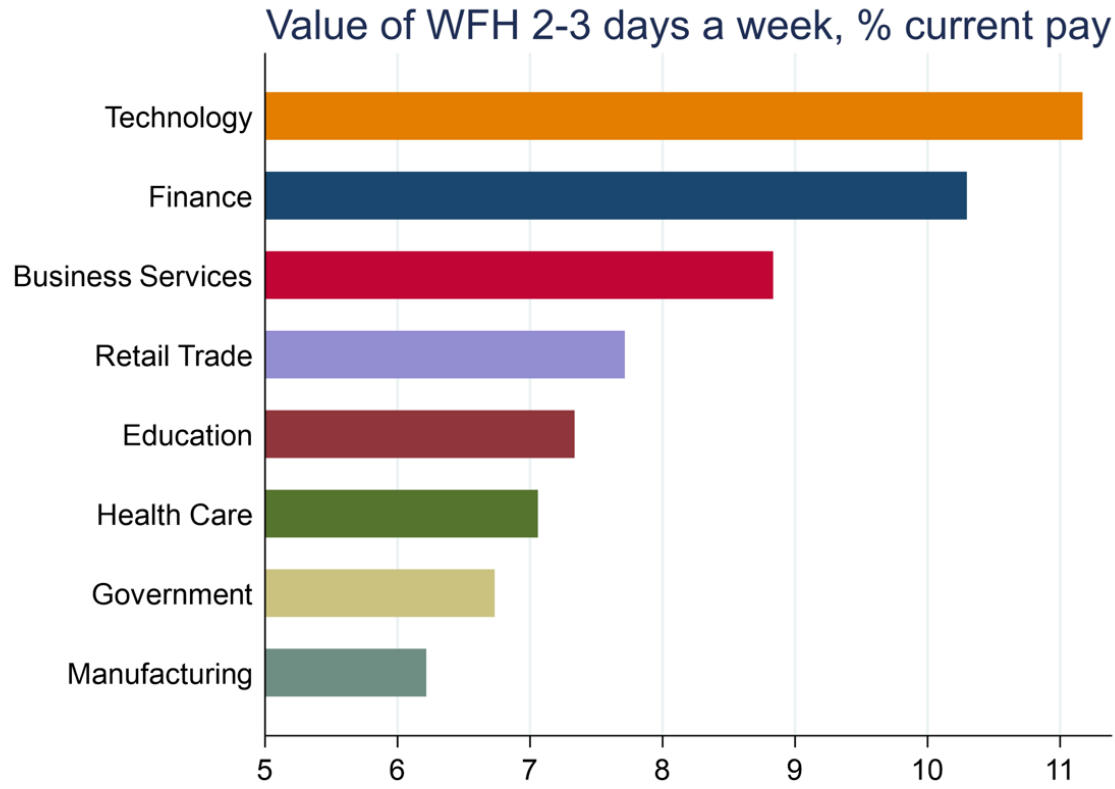


Source: Full days worked from home as a percent of all paid workdays by age group in the Survey of Working Arrangements and Attitudes (Barrero, Bloom, and Davis, 2023b). We drop respondents who fail our attention-check questions. The sample runs from January 2022 through June 2023. **N = 71,000.**

Fours Key factors driving WFH choice:

- 1. Happiness (→recruitment and retention)**
- 2. Productivity**
- 3. Rent**
- 4. Talent**

Happiness: Employees like hybrid about as much as 8% more pay...



Source: Data from 17,087 responses through 2021, reweighted to match US population. Industries with 1000+ respondents. Details on <https://wfhresearch.com/>

Results for one recent RCT on 1612 engineers, marketing and finance professionals found WFH reduced quit rates 35%

Hybrid WFH lowered employee quit rates by 35%

Tweets

Tweets & replies

Media

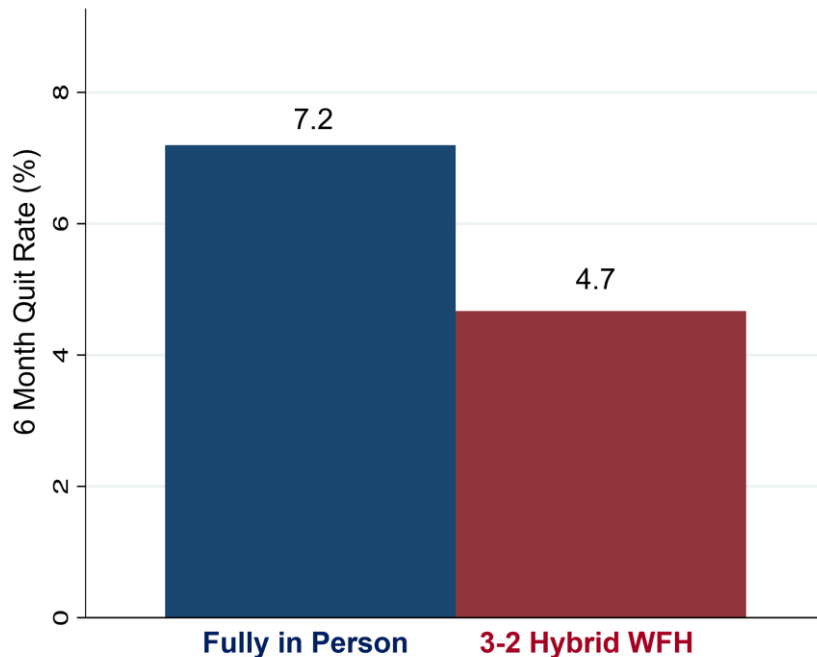


Nick Bloom @I_Am_NickBloom · Jul 25

New RCT on 1612 employees, finding hybrid #WFH

- 1) Reduced quit rates by 1/3
- 2) Shifted hours from WFH days to office days & weekends
- 3) Increased messaging and video calls (even in the office)
- 4) Generated a small productivity increase

Paper: bit.ly/3J4rL5I

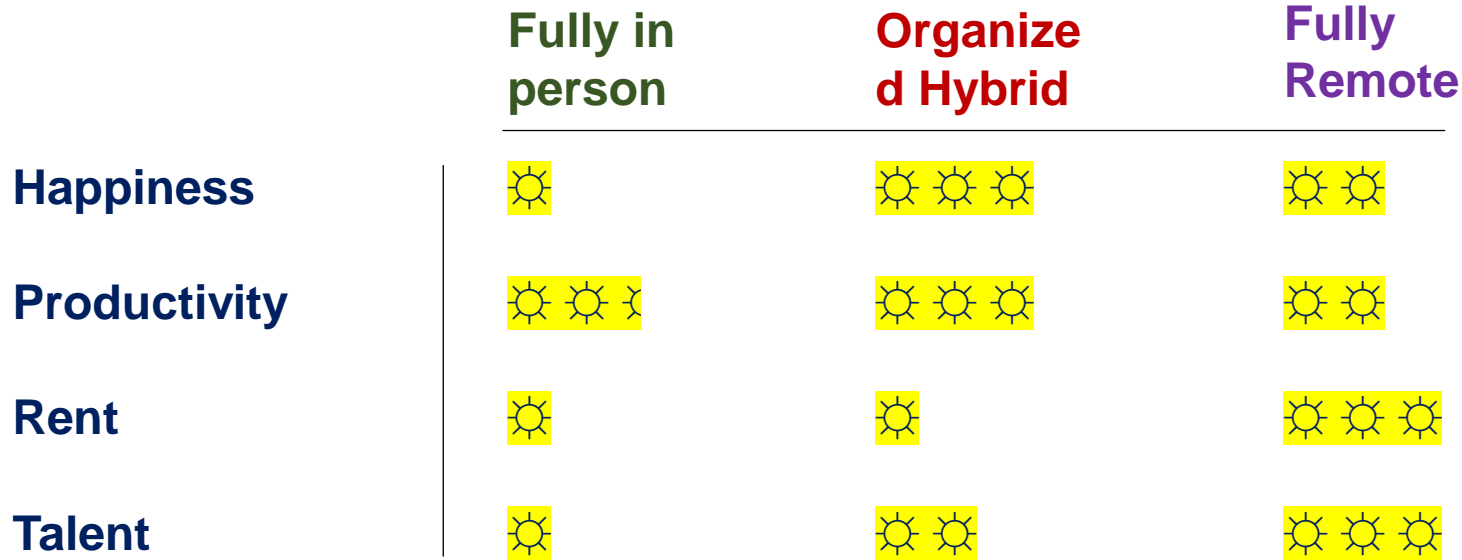


Source: Attrition rates for 1612 engineers, marketing and finance professionals of Trip.com who were randomized between September 2021 and February 2022 by even and odd birthdays into control (5-days a week in the office) and treatment (Mon, Tue and Thur in the office; Weds and Fri working from home). Difference statistically significant at the 5% level. Details in Bloom, Han and Liang (2022) "How Hybrid Work from Home Works Out".

Space: Fully remote saves a lot of space (hybrid maybe a little), with space costs typically being about 10% to 20% of labor costs



Overall assessment for managing professionals that can WFH



Conclusion:

A) Full 5-day in-person for professional is rare - dominated by organized hybrid

B) Hybrid vs Remote is about trade-offs - e.g. innovation and mentoring vs costs

Going to cover three sections

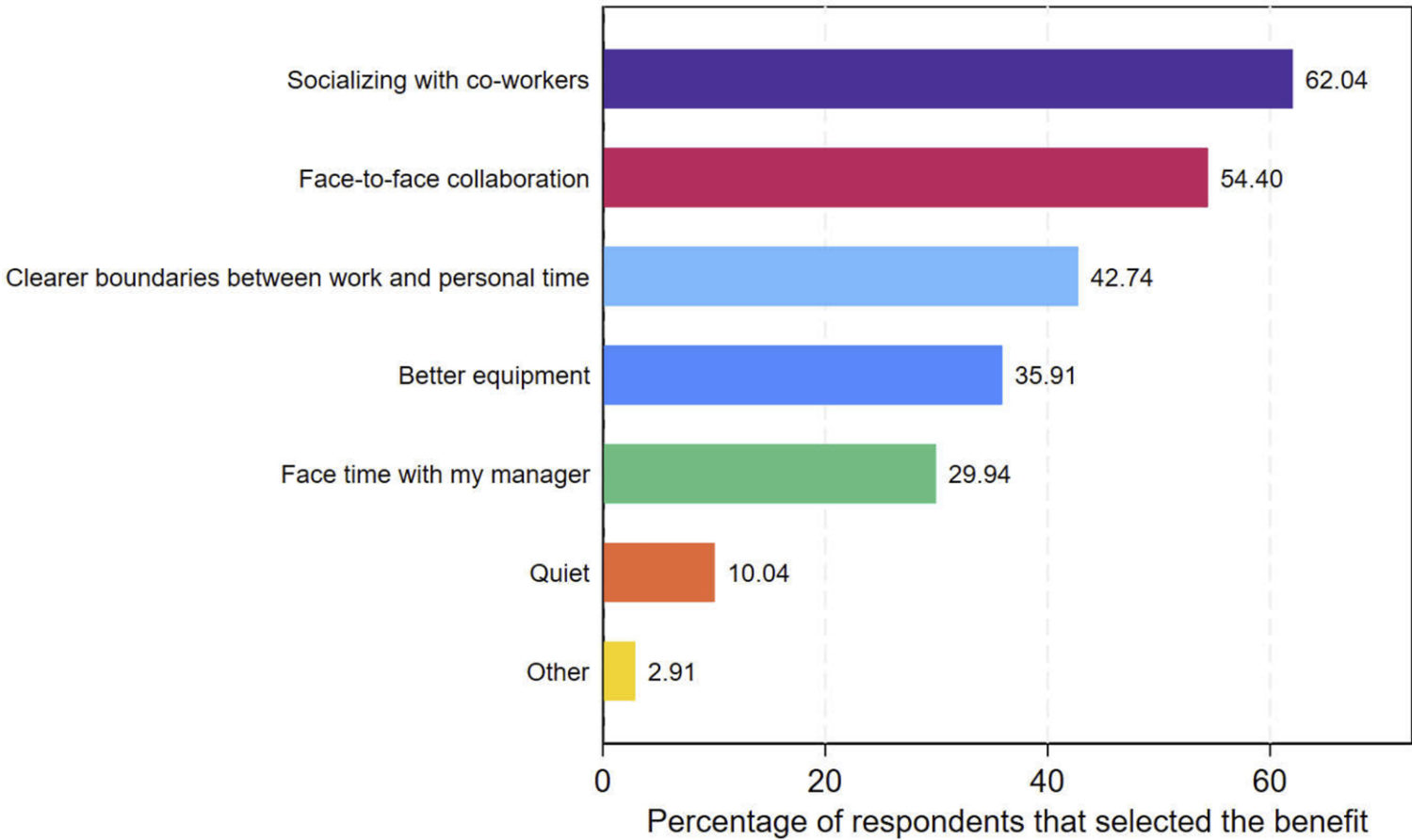
>>>> Current state of working from home

>>>> Thoughts on managing hybrid and remote

>>>> Three impacts on the economy

Hybrid: Coordination – office benefits are being with co-workers

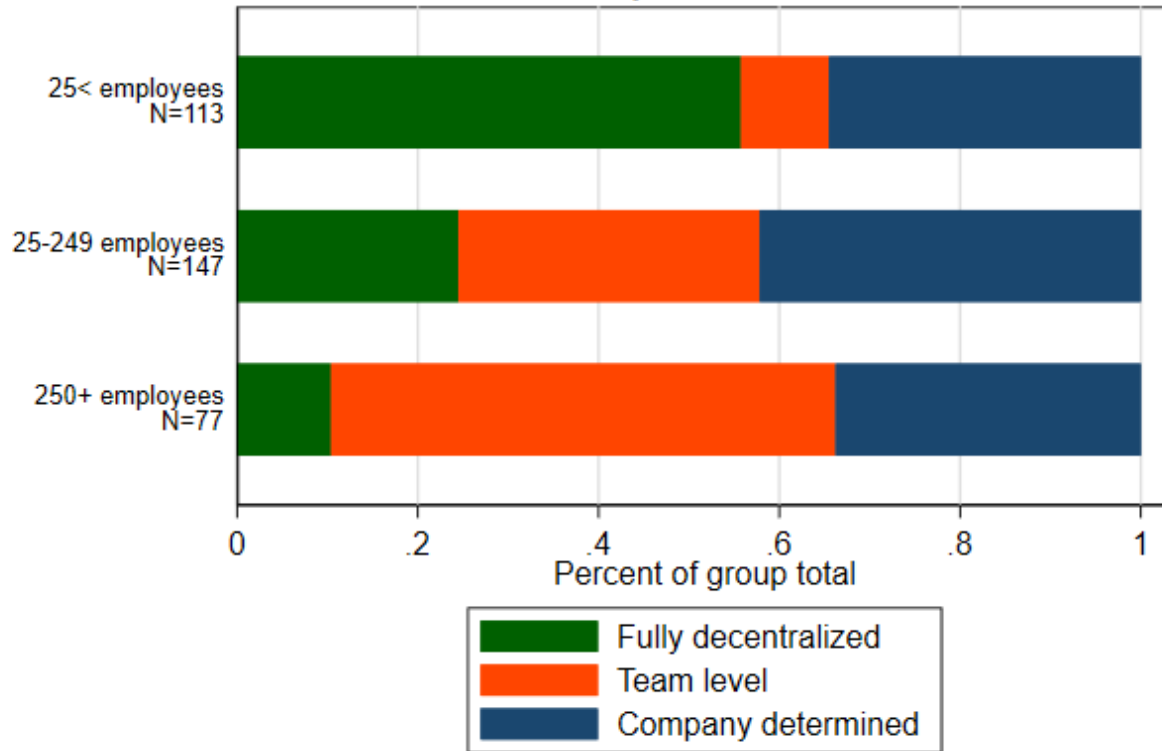
Qu: “What are the top three benefits of working on your employer’s business premises?”



Notes: Among workers that have work-from home experience during the COVID-19 pandemic. Responses to the question “What are the top benefits of working on your employer’s business premises? Please choose up to three”. Sample of N=20,732 workers in 34 countries surveyed in April-May 2023. All values are available at <https://bit.ly/Figures-GSWA-2023>

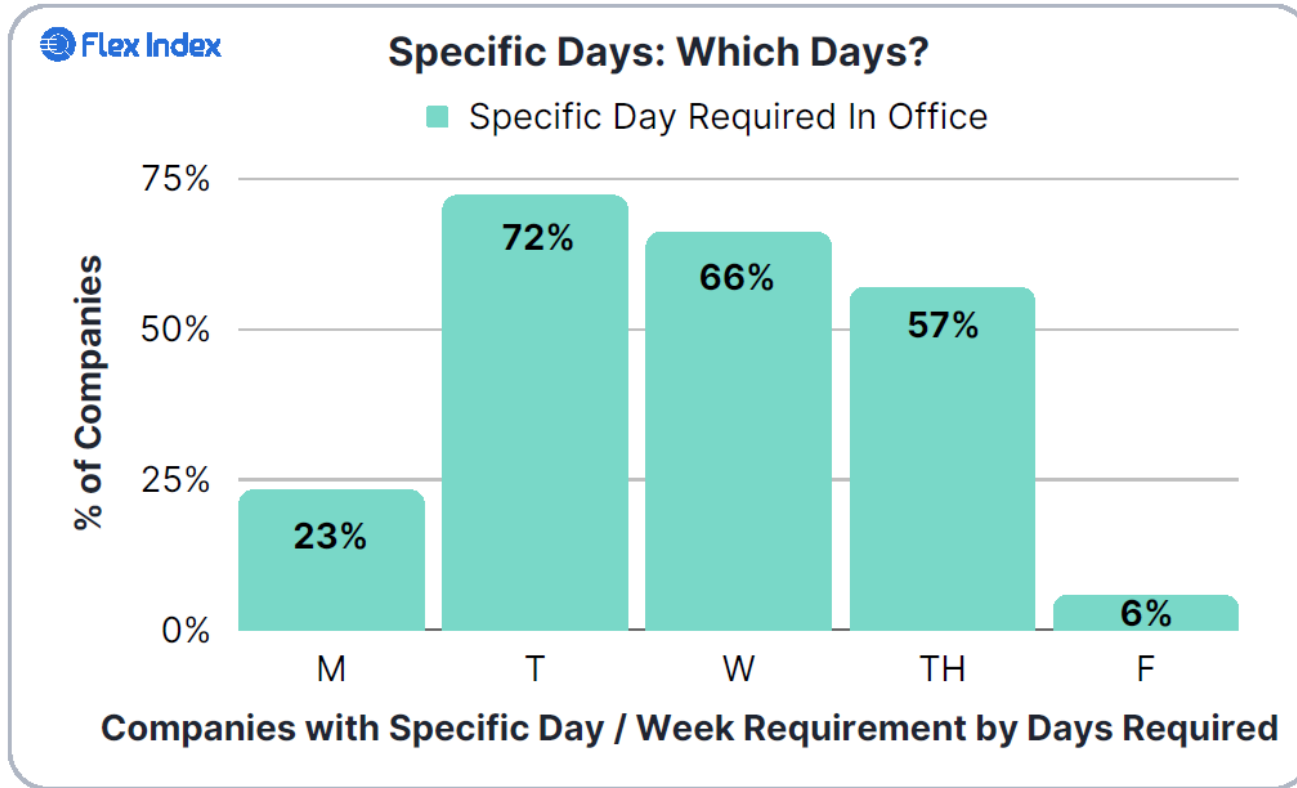
So large firms mostly planning team or company coordinated hybrid

Qu: “Who decides which days and how many days employees work remotely?”



Source: Survey of Business Uncertainty conducted by the Federal Reserve Bank of Atlanta, Stanford University, and the University of Chicago Booth School of Business.

If you pick WFH days I would suggest Monday and Friday...



Source: [Flex Index](https://flex.scoopforwork.com) (flex.scoopforwork.com) employee surveys and publicly available data on companies with a specific day / week office requirement. N = 229 companies. The Flex Index is presented by [Scoop](https://scoopforwork.com) (scoopforwork.com).

Hybrid is easier when office time is valuable – people will come to the office for in-person meetings, training and events

Massed offices and desks are out



Video-cubes and meeting spaces are in



Strong performance reviews for managing WFH

- Office employees can be (partly) evaluated by observing inputs - hours & activity
- WFH employees instead need output evaluation – data, evaluations & discussion
- Importantly this is not surveillance, but “output” performance reviews



Porte A

	Out	Nov	Dez	4Tri	Jan	Fev	Mar	1Tri
Total Segmentos	61,53	83,64	79,17	73,25	52,27	0,00	0,00	34,37
Total PF	70,15	76,99	75,13	68,82	42,11	0,00	0,00	26,86
Preferencial	58,09	86,85	86,87	76,92	15,16	0,00	0,00	13,43

1º /11

Porte A

SEGMENTO	PESO	META	REAL	%	PONTOS	OPORT.
Cientes					0,00	0,00
• Incr. Base Ativa	0	28	146	150,0	0,00	0,00
• Incr. Clientes c/ Ofer...	0	153	0	0,0	0,00	0,00
• Abertura Contas PF	0	120	24	11,3	0,00	0,00
• Abertura Contas Busine...	0	6	0	0,0	0,00	0,00
• Aquisição Com Of. Bási...	0	136	0	0,0	0,00	0,00
• Conversão Of. Básica	0	313	1	0,0	0,00	0,00
Vendas					0,00	0,00
• Super Auto	0	5	2	40,0	0,00	0,00
• Seguro Vida	0	47	26	55,3	0,00	0,00
• Seguro Residencial	0	25	8	32,0	0,00	0,00
• Seguro Auto	0	6	1	16,7	0,00	0,00
• Seguro Vida Master	0	2	0	0,0	0,00	0,00
• Cartões	0	140	75	53,6	0,00	0,00
• CP Protegido	0	295	70	23,7	0,00	0,00
• Capitalização	0	58	6	10,3	0,00	0,00
• Novas Cobranças Ativas	0	4	2	50,0	0,00	0,00
• Títulos Liquidados	0	5.301	1.815	34,2	0,00	0,00
Captações - Captação Líquida					0,00	0,00
• Captação Aho	0	1.371	1.072	78,2	0,00	0,00
• Previdência Foco PF	0	184	599	325,6	0,00	0,00
• Captação Demais	0	766	-3.001	-391,8	0,00	0,00
Depósito à Vista / Float					0,00	0,00
• DAV / Float	0	100	1.708	999,0	0,00	0,00
Empréstimos - Incr. Saldo Médio					0,00	0,00
• Empréstimos Aho PF	0	543	-118	-21,7	0,00	0,00

TOTAL SEGMENTOS 52,27

PERÍODO: 12m, 6m, 3m, 1Tri, 1m, 10m, 12m, 127%

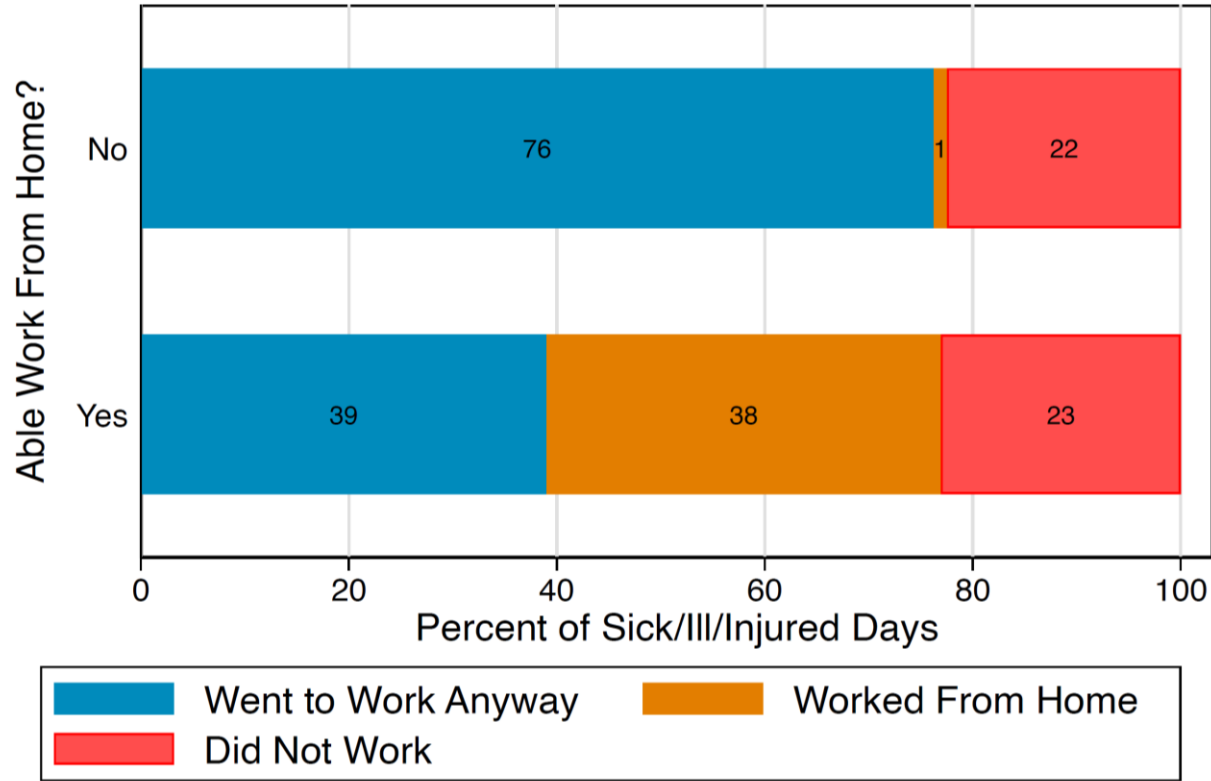
Atualização, Analisar, Cara a Cara, Histórico, Métricas, Voltar, Imprimir

SUPER RANKING

So, how Leaders Can Make the Most of Hybrid WFH

- 1) Coordinate your team to come in on the same 2 or 3 days each week (eg T, W & Th)
- 2) Promote in person meetings, events, coffee, training, lunches on those office days
- 3) Suggest cross-office zoom meetings and reading, writing, data etc on home days
- 4) Treat anchor day attendance like 2019 in person attendance – exemptions only for emergencies like a sick child, burst water pipe or illness.
- 5) Ensure there are strong output focused performance evaluation tools
- 6) For new hires (< 1 or 2 years) add an extra day in the office for mentoring

Another WFH Benefit - What Employees Do if They Are Sick or Injured?



Source: Survey of Workplace Attitudes and Arrangements www.wfhresearch.com
Sample of 633 respondees who were sick or injured the prior week.

Going to cover three sections

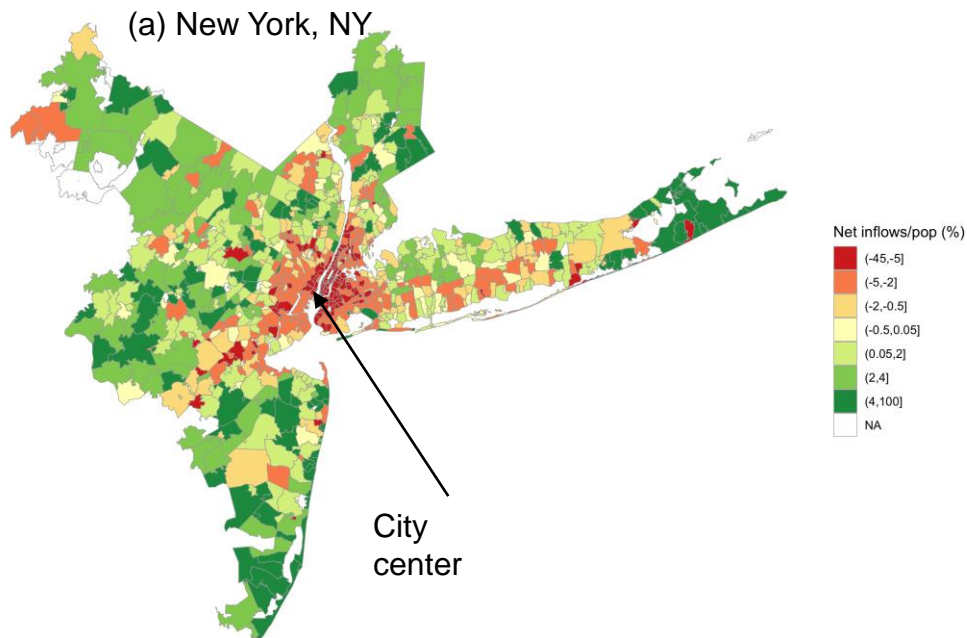
>>>> **Current state of working from home**

>>>> **Thoughts on managing hybrid-WFH**

>>>> **Three impacts on the economy**

1) The Donut Effect: about 1m people have left US big city centers

Cumulative net flows Feb 2020 - November 2022 as % of population



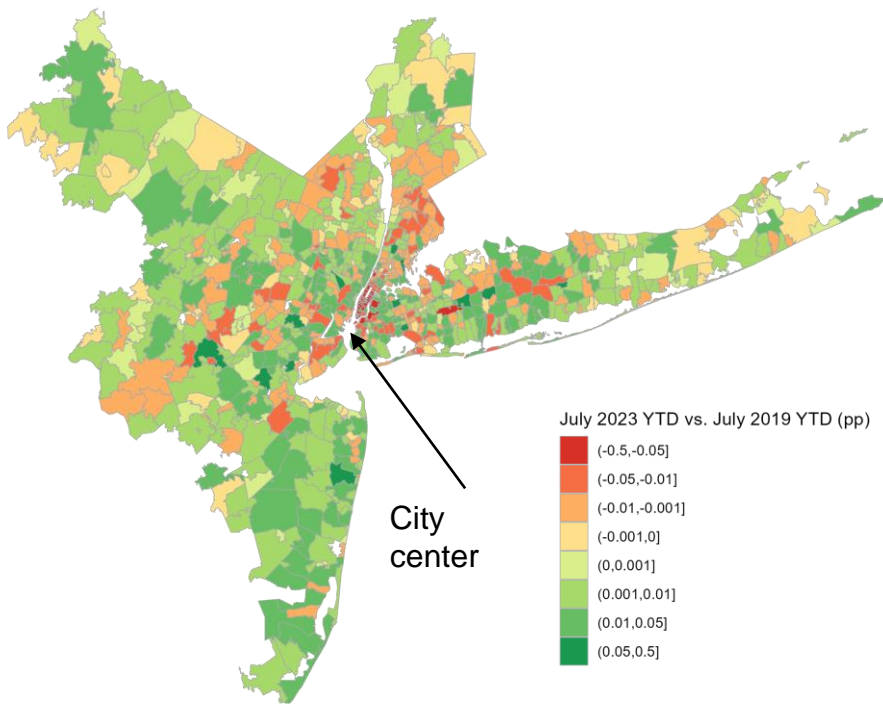
Source: Arjun Ramani and Nicholas Bloom “The Donut Effect”, NBER Working Paper 2021 (updated 2023) using US Postal Service Change of Address Data

<https://nblloom.people.stanford.edu/sites/g/files/sbivbi4746/f/w28876.pdf>

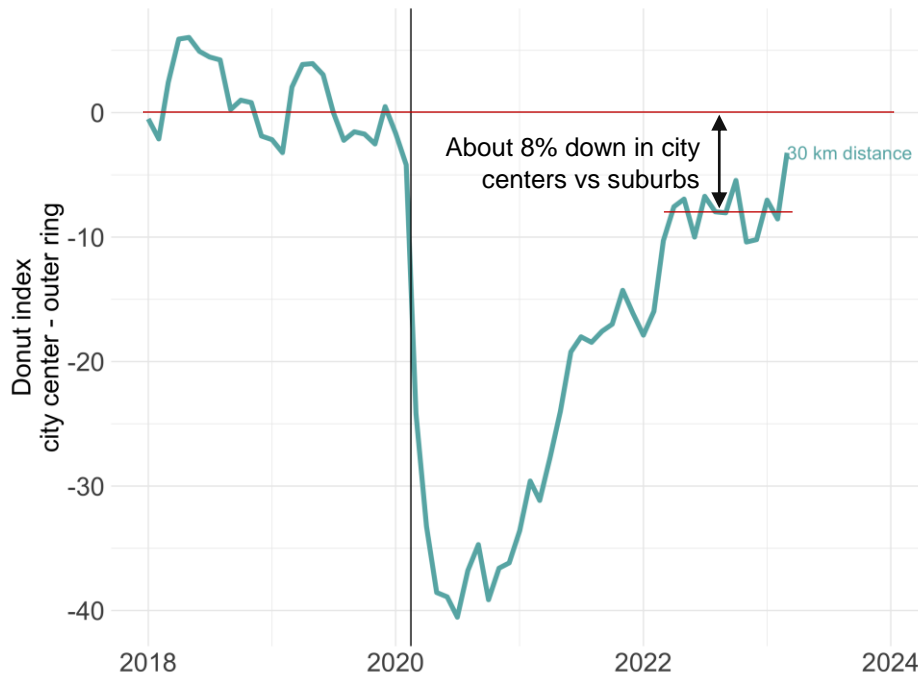
2) The Donut Effect cut city center food & retail spending



New York Mastercard heat map

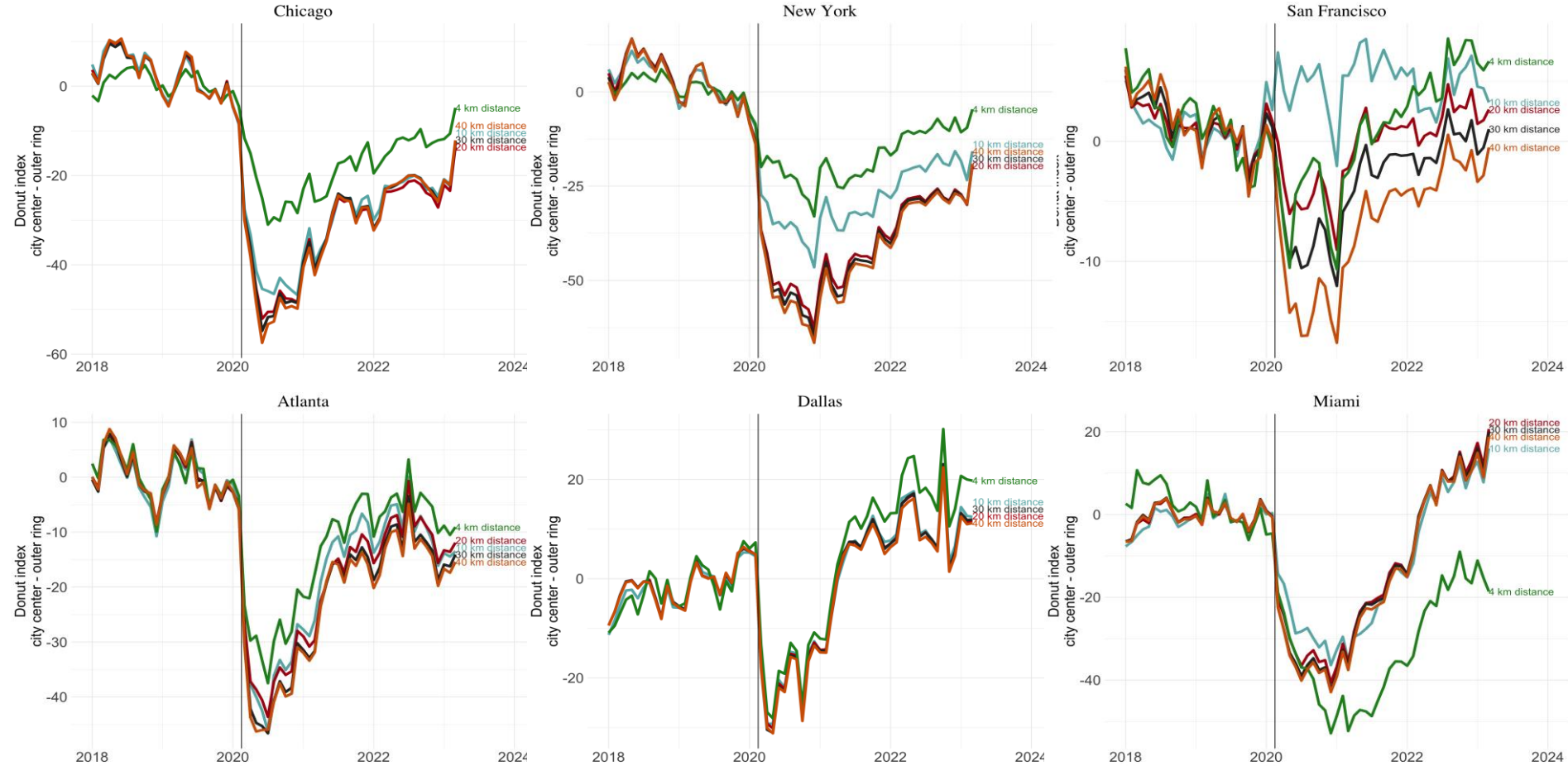


Top 12 largest US cities retail spend – city center less suburb



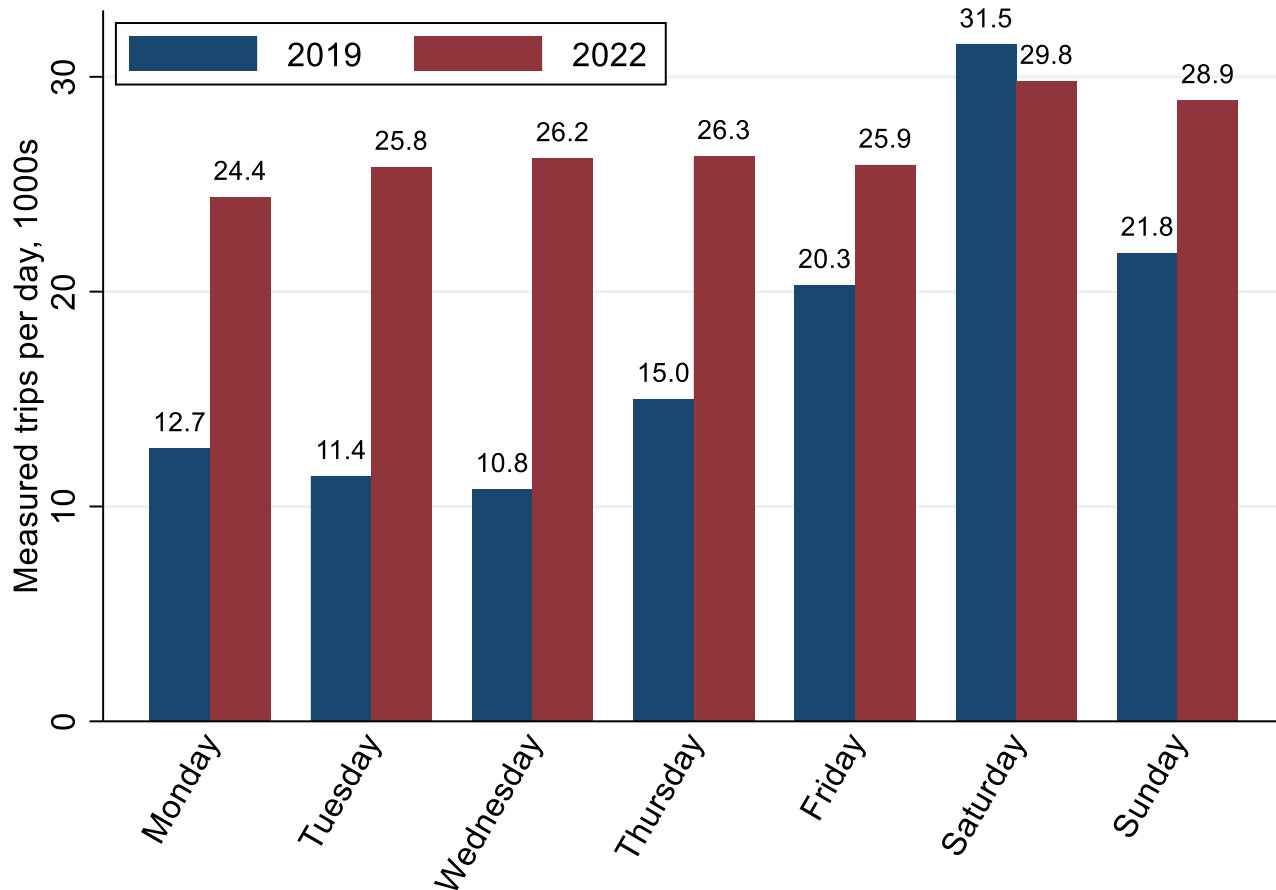
Notes: Constructed using Mastercard spending data. Each spending index is normalized such that the average 2019 value is 100; thus the difference has an average value of 0 in 2019. The level of the index can be interpreted as the relative growth of the city center vs the outer ring. Source Ramani, Alcedo and Bloom (2023)

Retail spend drop largest in big Northern and Western city



Notes: Constructed using Mastercard spending data. Each spending index is normalized such that the average 2019 value is 100; thus the difference has an average value of 0 in 2019. The level of the index can be interpreted as the relative growth of the city center vs the outer ring. Source Ramani, Alcedo and Bloom (2023)

3) Golf has increased 52% since 2019, almost all on weekdays...

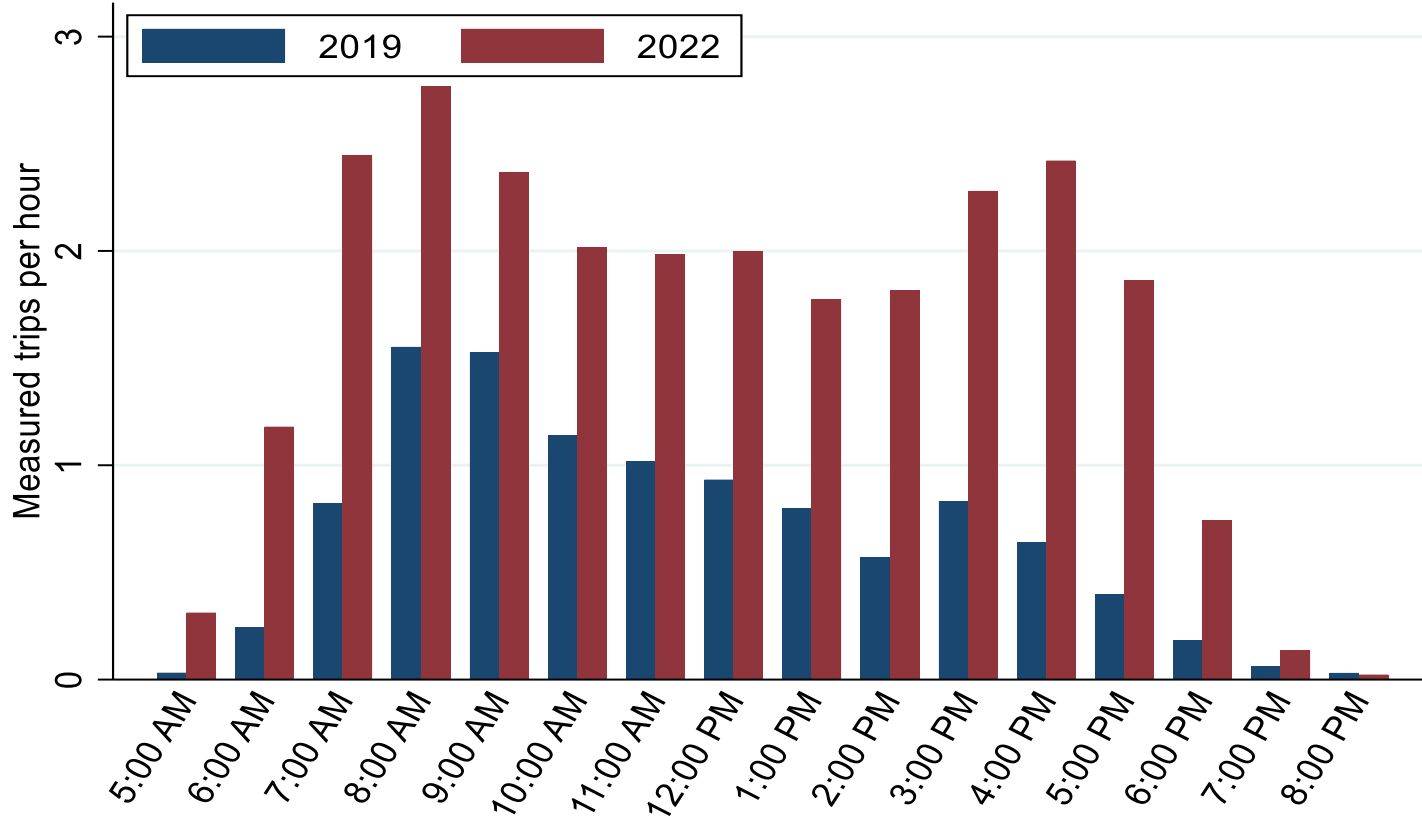


Note: Data for August 2019 and August 2022 for a sample of trips. Those included are trips in the INRIX database, which includes trips in vehicles with GPS and phones with location tracking turned-on. The trip needs to be to one of the 3,400 satellite identified gold courses and to have lasted more than two hours. We estimate we sample about 5% of total golf trips.



...the weekday increase happened throughout the day - for example a 178% increase at 3pm on Wednesday

Wednesday



Note: Data for August 2019 and August 2022 for a sample of trips. Those included are trips in the INRIX database, which includes trips in vehicles with GPS and phones with location tracking turned-on. The trip needs to be to one of the 3,400 satellite identified gold courses and to have lasted more than two hours. We estimate we sample about 5% of total golf trips.



What about the FUTURE.....



.....I see a “Nike Swoosh”

The Economist

Menu Weekly edition The world in brief Search

By Invitation | The future of WFH

Nicholas Bloom predicts a working-from-home Nike swoosh

Firms, employees and society will all benefit, reckons the Stanford economist



Dan Williams

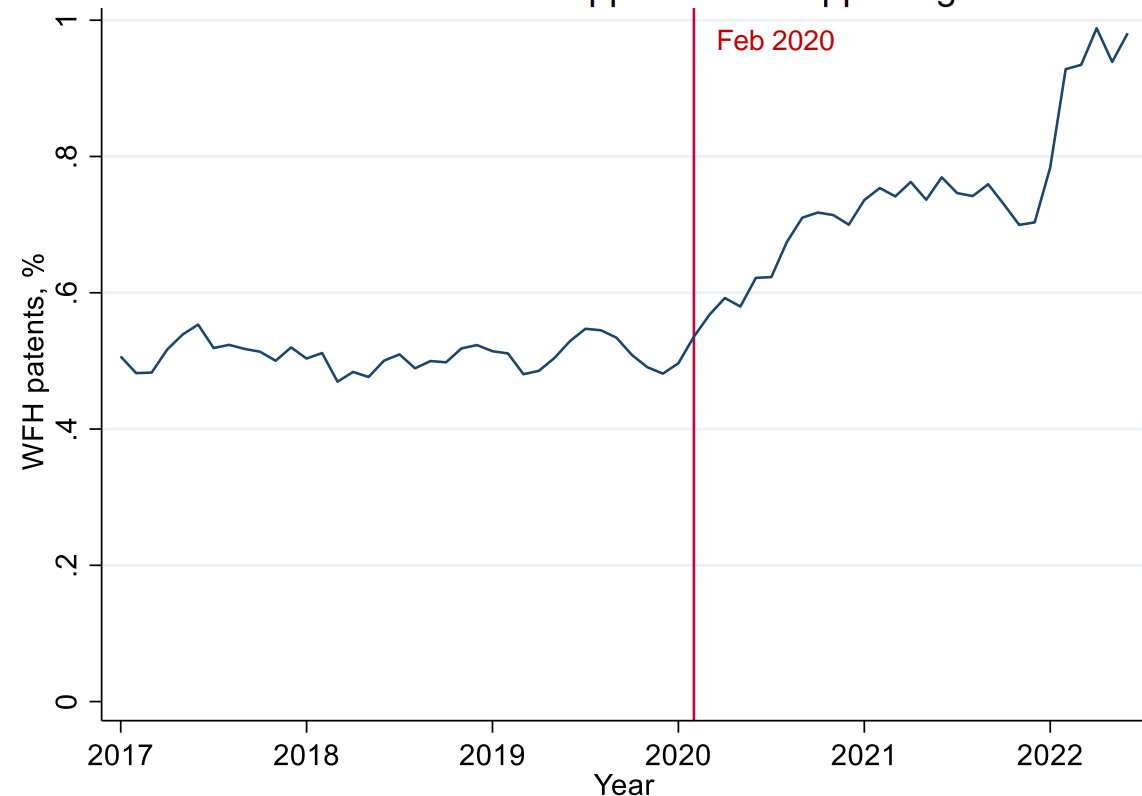
Aug 29th 2023

Share

THE MEDIA are full of stories of how firms from Amazon to Zoom are dragging their employees back into the office. So is working from home (WFH) over? Was this simply a pandemic-era remote-work boom extended by tight labour markets?

Technology effects – WFH is getting better at an accelerating pace

Share of New Patent Applications Supporting WFH



Source: US Patent and Trademark Office new patent application files. Details in Bloom, Nicholas, Steven J. Davis, and Yulia Zhestkova. 2021. "[COVID-19 Shifted Patent Applications toward Technologies that Support Working from Home.](#)"



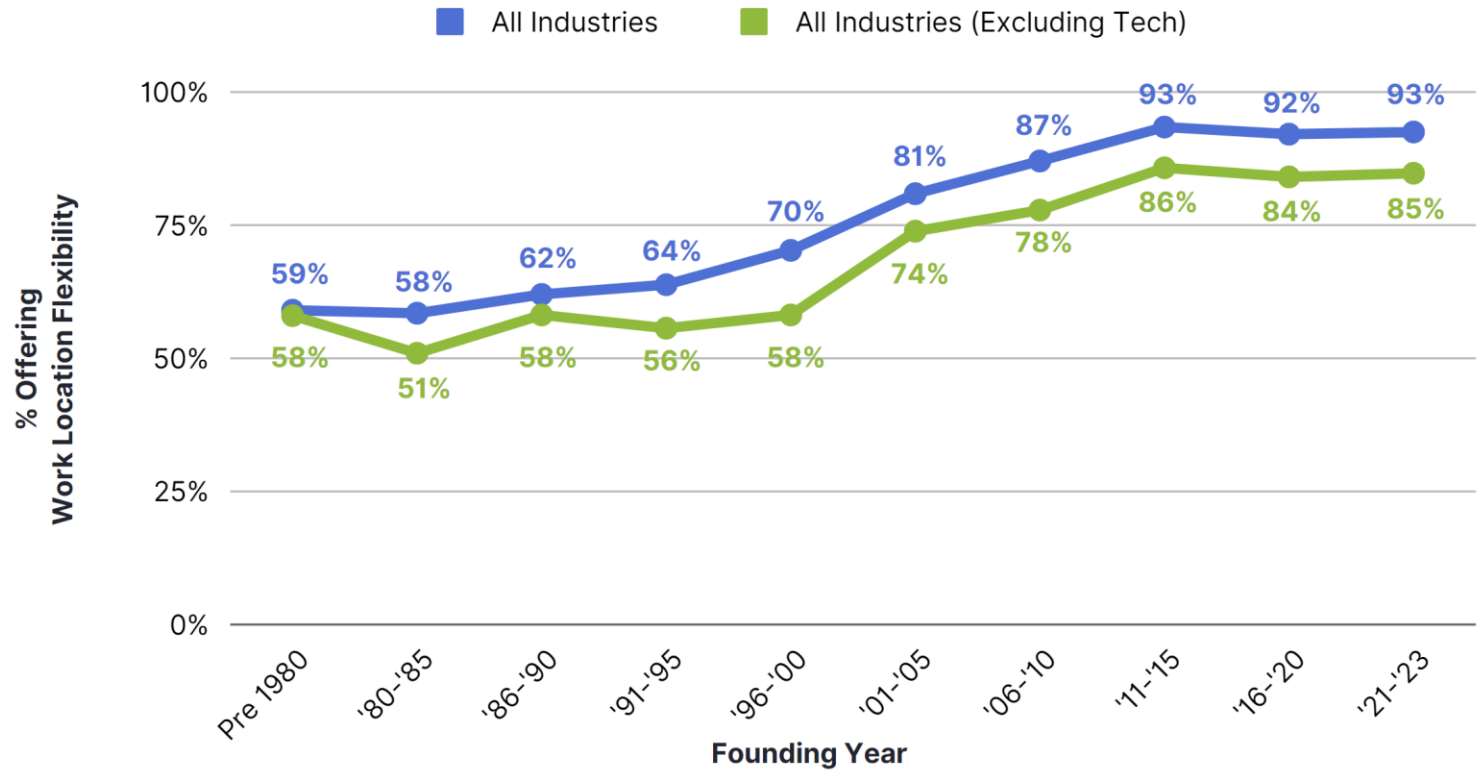
- New WFH technologies are being rapidly developed as the market for WFH products has increased 5x
- For example, scheduling software, better AV, virtual reality and holograms
- Should continue to improve WFH



Cohort effects – younger firms are more WFH friendly



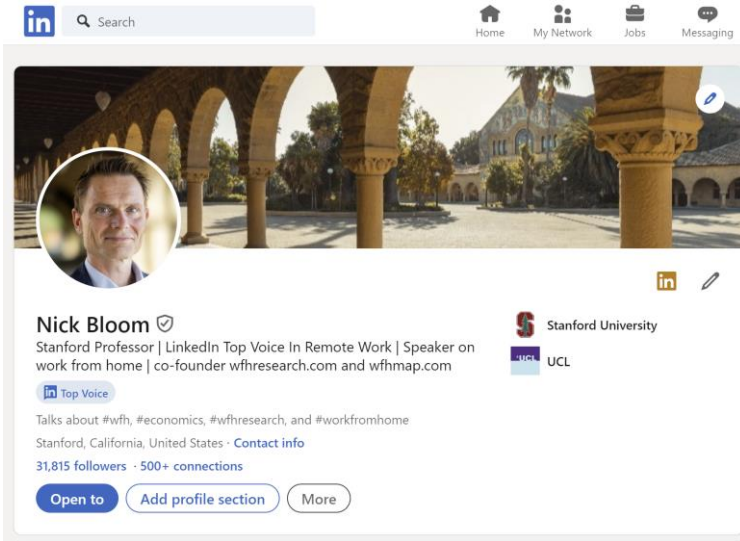
% of US Companies Offering Work Location Flexibility by Founding Year



Source Flex Index Report <https://www.flex.scoopforwork.com/stats> N=4,762 US Companies.

Conclusions

1. WFH is here to stay – typically 2 days a week for the average office worker
2. Key to succeed is coordinate so employees in together to work socially
3. Offices are being designed to focus on social working together



The image shows a screenshot of a LinkedIn profile for Nick Bloom. The profile picture is a circular portrait of a man with short brown hair. The background of the profile banner is a photograph of a large, historic building with many arches and columns. The profile text includes his name, title as a Stanford Professor, and his role as a LinkedIn Top Voice in Remote Work. It also lists his affiliations with Stanford University and UCL, and provides his website URLs.

in Search

Home My Network Jobs Messaging

Nick Bloom ✓
Stanford Professor | LinkedIn Top Voice In Remote Work | Speaker on work from home | co-founder wfhresearch.com and wfhmap.com

Stanford University
UCL

Top Voice

Talks about #wfh, #economics, #wfhresearch, and #workfromhome
Stanford, California, United States · [Contact info](#)
31,815 followers · 500+ connections

[Open to](#) [Add profile section](#) [More](#)



The image is a webpage for WFH Research. It features a header with the company logo and navigation links. The main content area has a large heading about working from home before and since the start of COVID, with a button to download the latest results. To the right is a line graph showing the percentage of paid full days worked from home from pre-COVID to January 2023. The graph shows a sharp increase in late 2020, followed by a decline and then a slight increase in 2022.

WFH RESEARCH

ABOUT US MEDIA RESEARCH AND POLICY DATA METHODOLOGY CONFERENCE LOGIN

WORKING FROM HOME BEFORE AND SINCE THE START OF COVID

[DOWNLOAD LATEST RESULTS](#)

Percentage of paid full days worked from home

80
70
60
50
40
30
20
10
0

Pre-COVID Jul Oct Jan21 Apr Jul Oct Jan22 Apr Jul Oct Jan23

Survey of Working Arrangements and Attitudes
Census Household Pulse Survey

*Pre-COVID estimate taken from the 2017-2018 American Time Use Survey
*The break in the series in November 2020 reflects a change in the survey question.

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To sign up for monthly results updates please click [here](#).
Download our [time series data on the extent of working from home](#).



Thank you!

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