



THE CENTER FOR CONSTRUCTION
RESEARCH AND TRAINING

National Construction Center Update

November 20, 2024

Chris Trahan Cain, CIH
Executive Director

CPWR – The Center for Construction Research and Training

Advancing Heat Safety in Construction

Project Goal: Reduce heat stress and related health disparities in construction.

- **Stage 1:** Identify high-risk activities and assess current heat stress solutions.
 - Methods: Case analysis, site evaluations, surveys, interviews, and advisory committee.
- **Stage 2:** Develop resources to prevent heat-related illness and injury.
 - Actions: Create practical planning tools; measure usage and impact.
- **Stage 3:** Evaluate heat-related health outcomes and safety adoption.
 - Approach: Analyze national data, survey firms, and create interactive data tools.

Gavin West, CPWR

Collaborative Leadership for Safety and Health in Construction (CL-SHC)

Project Goal: Support organizational changes to improve safety and well-being.

Toolkit: CL-SHC.

- Enhances collaboration among managers, supervisors, and workers.
- Builds on prior safety and health programs (e.g., Foundations for Safety Leadership).

Stage 1: Toolkit Development

- Created with advisory board input; adapts existing toolkits.

Stage 2: Implementation & Evaluation

- Pilot-tested with eight contractors for effectiveness.

Stage 3: Dissemination

- Broad distribution through unions, associations, insurers, and OSHA.

Natalie Schwatka, University of Colorado, Anschutz Medical Campus

Developing a National Roadmap to Reduce Chemical Exposures and Associated Health Risks among Construction Painters

Background: PFAS, or "forever chemicals," are linked to serious health risks (e.g., cancers, thyroid issues, immune suppression).

Concern: PFAS likely used in construction products (e.g., paints, adhesives), with unclear exposure levels for painters and allied trades.

Project Goal: Reduce/eliminate PFAS exposure to protect worker health.

- **Approach:**

- **Exposure Assessment:** Measure PFAS levels in workers' serum and urine.
- **Source Identification:** Analyze construction products and assess inhalation/dermal exposure.
- **Prevention Plan:** Develop a roadmap to minimize PFAS exposure in construction.

Anila Bello and Dhimiter Bello, University of Massachusetts Lowell

Enhancing the Long-term Acceptance, Usability, and Effectiveness of Passive Exoskeletons among Construction Workers Who Vary by Sex, Age, and Prior Injury Status

Project Goal: Assess effectiveness of arm- and back-support exoskeletons (EXOs) for reducing MSD risk.

- **Approach:**
 - **Training Development:** Create construction-specific training for safe, effective EXO use.
 - **Evaluation Phases:**
 - **Medium-term (2-4 weeks)** and **Longer-term (up to 4 months)** assessments.
 - Metrics: usability, performance, worker acceptance, and effectiveness (exertion, discomfort, fatigue).
 - **Final Stage:** Disseminate training protocols and findings to optimize EXO adoption.
- **Focus Areas:** Analyze EXO impact by trade, task, sex, age, and prior injury status.

Carisa Harris-Adamson, University of California, San Francisco

Maury Nussbaum, Virginia Tech

Preventing Suicide and Promoting Mental Health in Construction Workers

Project Goal: Adapt and implement the "MATES in Construction" mental health and suicide prevention program for the U.S. construction industry.

- **Approach:**

- **Adaptation:** Collaborate with contractor associations, unions, and health plans to tailor "MATES" for U.S. use.
- **Implementation:** Recruit contractors to apply the adapted program.
- **Evaluation:** Assess program impact on suicide awareness, mental health attitudes, and help-seeking/help-offering behaviors.
- **Dissemination:** Develop scalable methods for wide adoption across companies, unions, and professional bodies.

Bradley Evanoff, Washington University in St. Louis

Understanding the Effectiveness of OSHA Construction Consultations in Reducing Serious Hazards

Background: Evidence suggests states with more consultations may have lower construction fatality rates.

Project Goal: Investigate consultation impact on injury prevention and workplace safety.

- **Research Questions:**

- Does the impact vary by firm size, consultation type, or injury type?
- Is there a causal relationship between consultations and injury reduction?
- What mechanisms link hazard abatement to injury prevention?
- What factors drive firms to seek and respond to consultations?

- **Outcome:** Insights to optimize use of \$100 million allocated for consultation services.

Wayne Gray, Clark University and John Mendeloff, University of Pittsburgh

National Construction Center Cores

Research to Practice (r2p)

Goal: Reduce injuries and illnesses by applying research findings on construction sites.

Jessica Bunting, CPWR

Communications, Outreach and Education

Goal: Disseminate CPWR resources across the construction industry.

Bill Wright, CPWR

Construction Industry Data and Statistical Core

Goal: Provide comprehensive construction safety and health data.

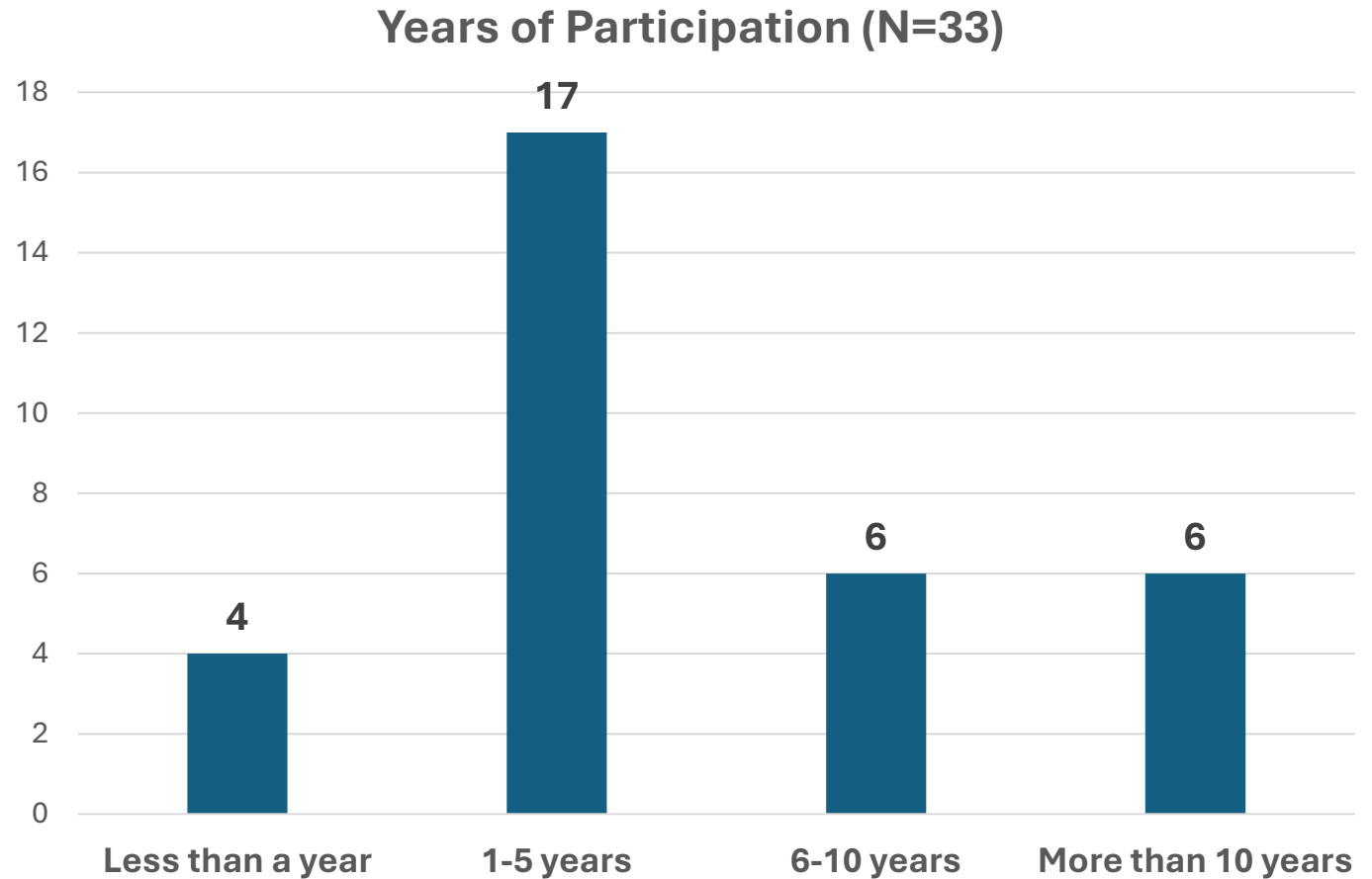
Amber Trueblood, CPWR

Small Study Program – NOW OPEN

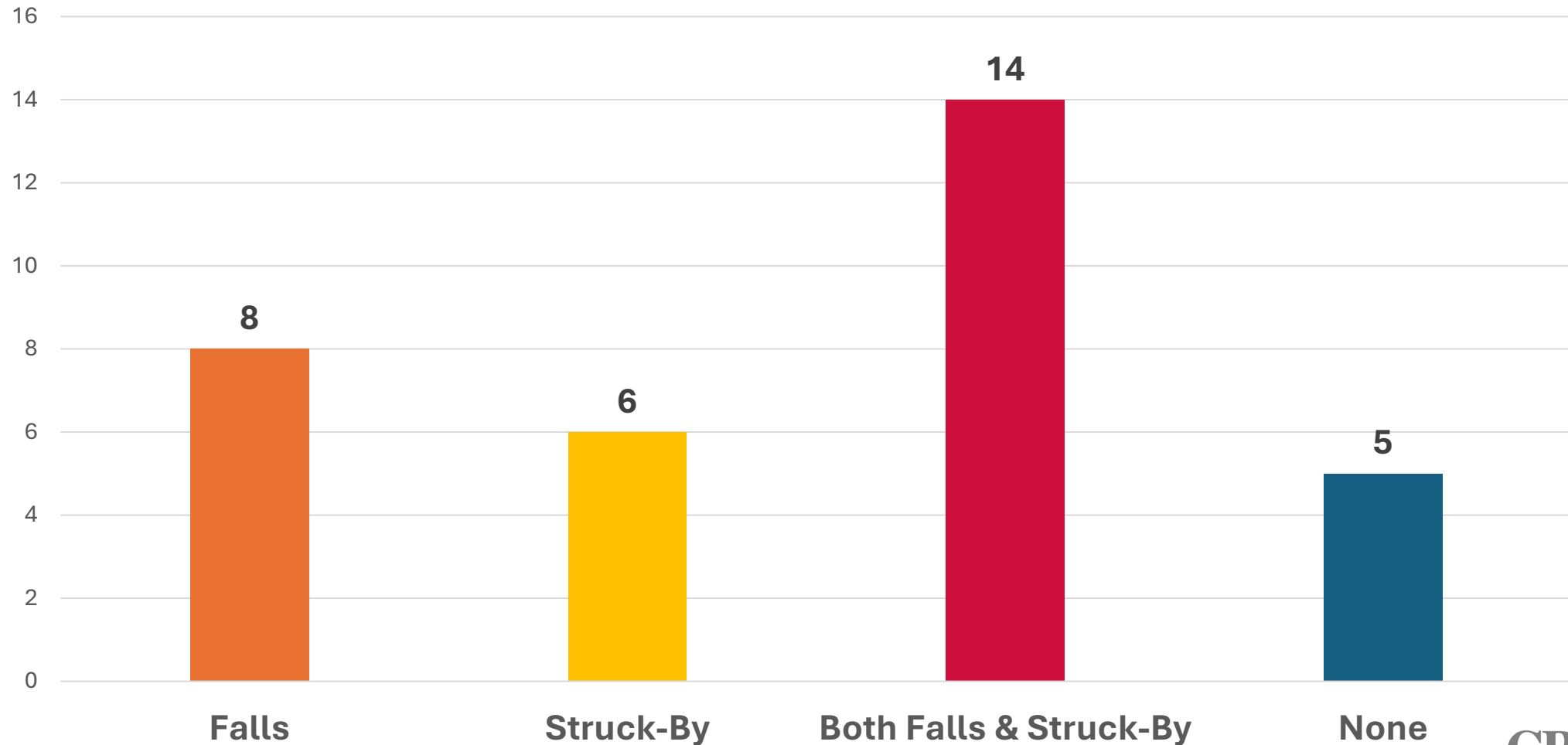
- Provides seed funding up to \$30,000 for promising research and practical initiatives.
- Serves as a launchpad for major research projects, enabling pilot testing and feasibility studies.
- Many projects become significant, stand-alone contributions to the field.
- Survey of funded researchers: Over 60% published findings in peer-reviewed journals.

NORA Construction Sector Council Survey

- Emailed to all CSC and Work Group members
- **Goal:** Evaluate CSC participation, benefits, and areas for improvement
- **39 Total Responses**
- Most respondents have participated on the CSC and/or its Work Groups for either **1-5 years** or **more than 6 years**



Which Work Groups are you currently participating in? (N=33)



Are We Meeting the NORA Construction Research Agenda?

Revisiting the NORA Construction Research Agenda, are there:
(a) areas included that we need to place additional focus on before 2026? and/or **(b) areas which might be deemphasized to better focus council efforts?** (N=39)

On the Right Track...

- I believe **the work group has been nimble in addressing necessary issues** as they emerge within the relatively broad context of the agenda. There is enough latitude in the agenda to allow for the continued responsiveness to the emerging needs identified.
- As discussed in our meetings, I really think **adding emphasis on ladder safety is great.**
- Continued focus on **Internal Traffic Control Plans.** Anything to improve the safety for workers and the traveling public that travel through work zones.
- Agenda **topics are appropriate** for the Council
- **Continue to spread the word** on both to these critical campaigns - via the Fall Prevention Standdown and Workzone Awareness Week

Recommendations for Additional Focus

- **4 comments** calling for additional focus on **mental health**.
- **3 comments** related to adding a focus on **heat stress** – “Greater focus on Objective 11 (**Extreme temperatures**)”
- “Emphasize **proper training and certification** for all required equipment and trades”
- “**Add the focus four for health** developed by AIHA to the agenda”
- Focus on Objective 6: **Hearing Loss**
- Add **Driver and Vehicle Safety...and High Energy Hazards**
- “...Focus on **practical solutions** to improve safety, include work practices, training, equipment and PPE.”

Recommendations for Additional Focus

- **2 comments** on more focus on **workers at disproportionate risk** for injury and illness.
- **3 comments** related to **Reaching Small Businesses**. “Additional focus on research focused on **improving safety and health in small construction firms** (i.e., small businesses).”
- “**Target specific occupations and construction types** (i.e., instead of all types of construction, focus on low rise residential projects, etc.)”
- **2 comments** on focusing on **new and emerging technologies**, such as exoskeletons, wearable sensors, and new tools for automatic ergonomics assessment.
- Get **manufacturers and vendors** more engaged

Recommendations for Existing Work Groups

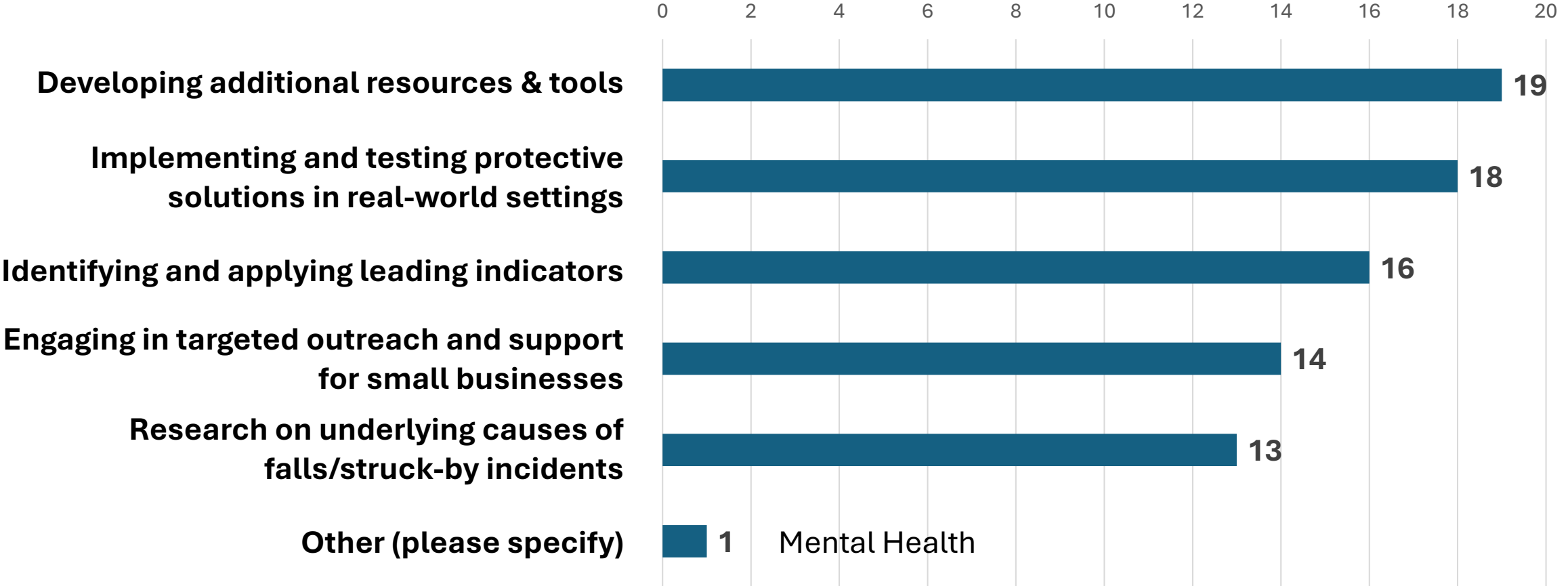
FALLS

- Promote **platform ladders replacing A-frames**
- “Fall Protection Worker Empowerment should be widened to not just address PPE controls. Safety professionals should **look at the factors preventing workers from asking for work-at-height controls** (in general)...Authorized Persons should be aware of the Hierarchy of Controls and ask employers for guardrails, scaffolds, etc. just as much as they ask for personal fall arrest equipment.”

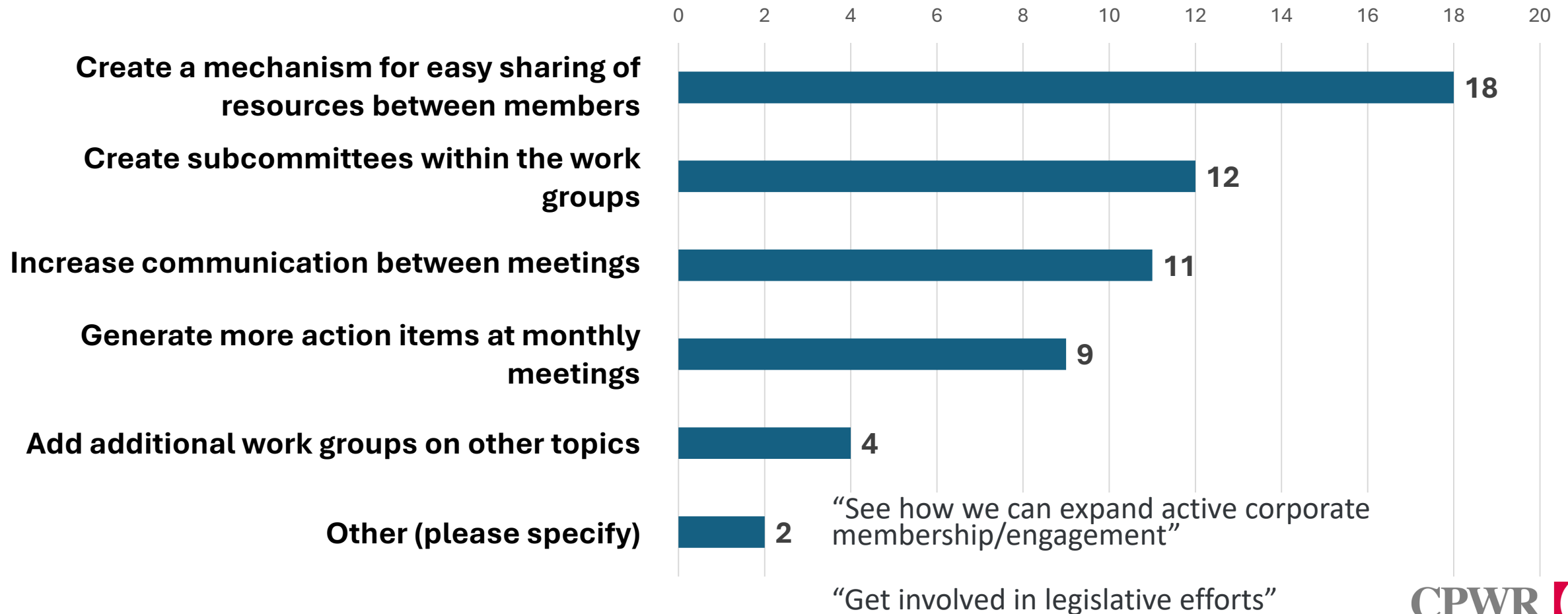
STRUCK-BY

- “The efficacy of Internal Traffic Control Plans. Anything to improve the safety for workers and the traveling public that travel through work zones.”

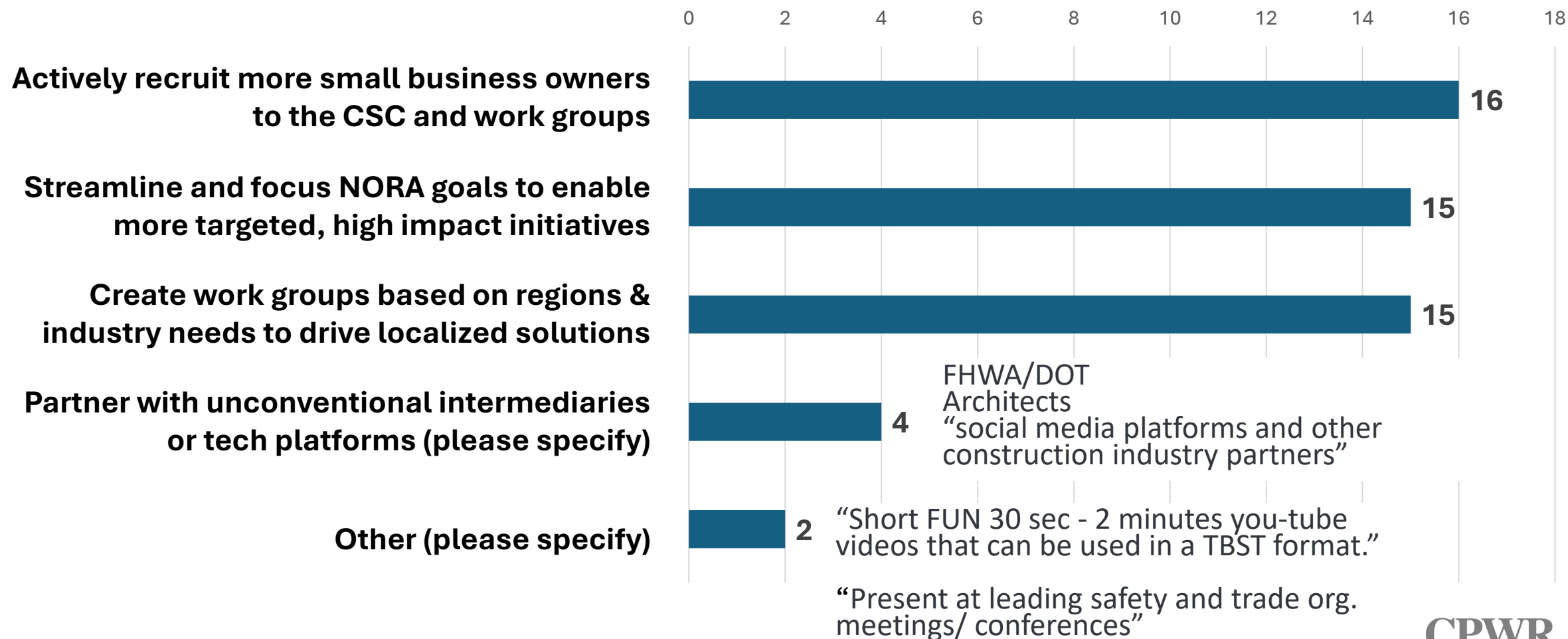
What types of initiatives are you most interested in actively working on next (select all that apply)? (N=30)



How can we increase engagement across the CSC and Work Groups (select all that apply)? (N=29)

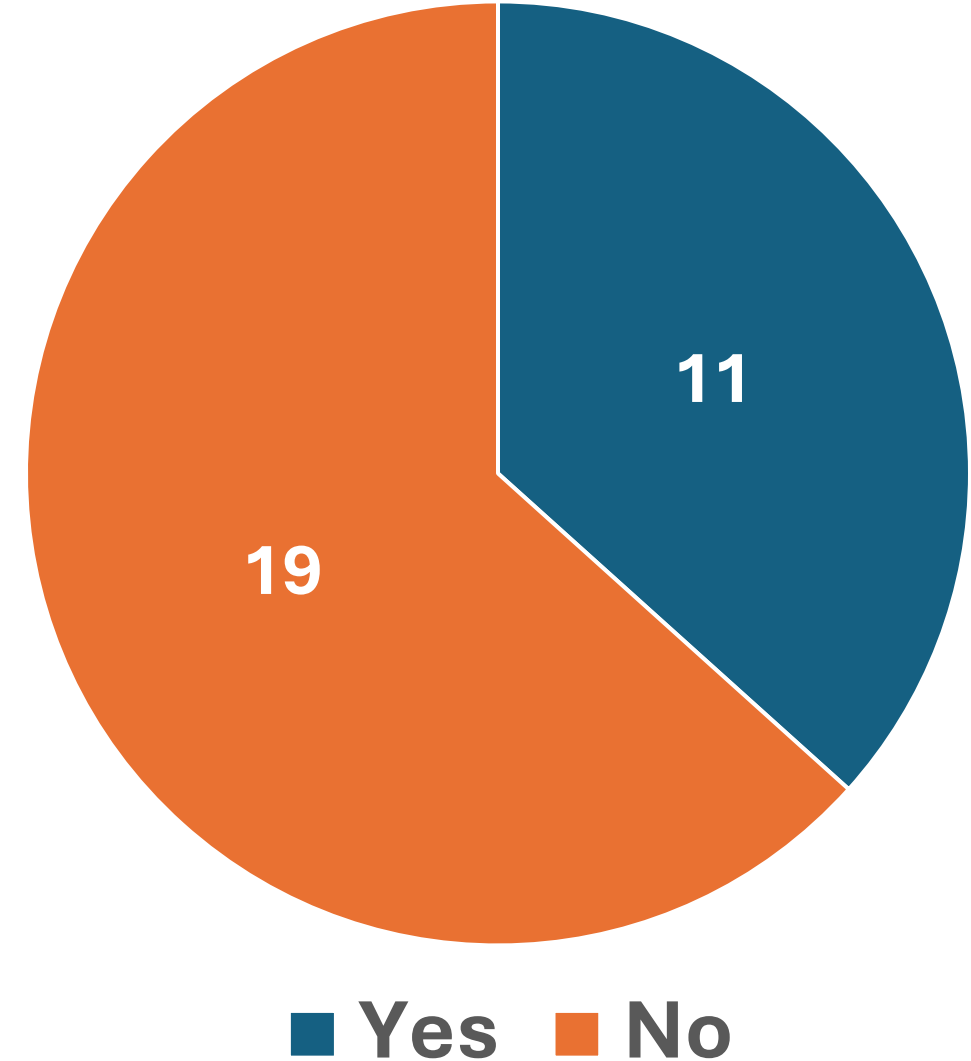


How might we increase our impact on injury and illness rates in construction – particularly for small businesses? (N=30)



Are there any occupational safety and health groups or organizations not currently represented on the NORA Construction Sector Council that should be invited to join or collaborate with us?

Are you interested in providing a presentation to the council or either work group to describe how your company is implementing relevant safety and health solutions and/or share any resources that might be useful to other members? (N=30)





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Thank You!

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