UPDATE ON FIRE RESEARCH

Joy C MacDermid BScPT MSc PhD FCAHS FRSC



UPDATE TOPICS

What have we heard from firefighters about their experiences and priorities?

Our UNALARM Model

Development of a work limitations questionnaire

Comparison of different resiliency programs

What progress have we made on resilient minds?



Article

Canadian Career Firefighters' Mental Health Impacts and Priorities

Joy C. MacDermid 1,2,3,* , Margaret Lomotan 3 and Mostin A. Hu 4

- 33 men, 6 women)
- Lieutenant/Acting Captain/Captain (n = 11);
 Assistant Deputy Chief/Deputy Chief/Chief (n = 7).
- British Columbia (n = 2), Alberta (n = 1), Nunavut (n = 2), Quebec (n = 6), and Ontario (n = 28).

FIREWELL

Awareness and monitoring

RESEARCH PRIORITIES

- a. Trends in mental health;
 - b. Bi-annual exams and surveys for physical and mental health
- 2. Understanding mental health
 - a. Other mental health issues beyond PTSD
 - b. The cumulative effects of mental health exposures
 - c. Brain mechanisms that lead to mental health/PTSD issues
 - d. WAYS TO MEASURE EXPOSURES AND OUTCOMES
- 3. Better prevention and treatment
 - a. Research on early signs and symptoms
 - b. DESIGN AND EVALUATION OF PREVENTION AND TREATMENT PROGRAMS
- 4. Access to care
 - a. Geographic variations in programs/service

FIREWELL

FIREFIGHTER EXPERIENCE OF MENTAL HEALTH

FIREFIGHTER

- brain fog
- difficuly concentrating
- on high alert all the time
- intrusive, distressing flashbacks
- ·feelings of failure
- ·fear of next call
- second guessing performance

Impacts

Consequences

- compassion fatigue
- burnout
- increased risk of physical injury
- occupational stress injury

- use drinking to cover pain alcoholism
- taking things out on others

Maladaptive Behaviours

FAMILY IMPACT

FAMILY

- unable to be open and honest with family
- guarded about sharing information what job is like
- feelings of failure
- ·loss of pride in family role

Impacts

Consequences

- ·lost time from work
- increased risk of divorce
- ·unable to present with family
- lost family financial stability

- •taking things out on family
- unaccounted for sick days

Maladaptive Behaviours

WORK IMPACTS

WORK

- ·lack of civility
- increased interpersonal conflicts

Impacts

Consequences

- risk to crew
- not able to provide instrumental or social support to other firefighters

- not being able to be fully present (presenteeism)
- absenteeism
- avoiding certain tasks at work

Maladaptive Behaviours

Unified Neuromatrix Allostatic Load and Resiliency Positive homeostatis adaptation + resilency **Adaptation Model (UNALARM) Physical Body-Self Neuromatrix** Life: Exposures, Injury, Trauma, Events, Aging Mental Allostatic stress Cognition Loading... Psychology regulator program Social TIME **Mental Inputs** Pre-exposure Relationships Environment Health, Well-being, Role Cognitive sensory **MSK Functioning** Nervous Memories Revised Health, Well-being, Cognitive Attention Role Functioning Anxiety **Physical Exhaustion, Chronic** Endocrine **CVR Affective** Cutaneous Stress, Negative Mental **Immune** Visceral sensory Coping Cognition Psychology MSK Social **Physical** Emotion Limbic Relationships **Environment** Mental Cognition **Psychology** Social Pain, Sleep **Physical Inputs** Action Disturbance. programs Relationships Environment Symptoms, **Social Inputs**

DEVELOPMENT OF THE FIREFIGHTER WORK LIMITATIONS





Measurement Issues

Current self-report questionnaires of work limitations are not useful for assessing firefighter work limitations.

Journal of Occupational Rehabilitation https://doi.org/10.1007/s10926-018-9778-6



Work Functioning Among Firefighters: A Comparison Between Self-Reported Limitations and Functional Task Performance

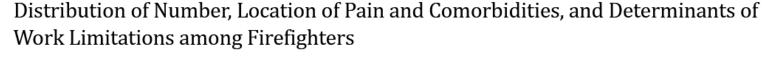
Joy C. MacDermid^{1,2} · Kenneth Tang³ · Kathryn E. Sinden⁴ ·

Rehabil Res Pract. 2020; 2020: 1942513.

Published online 2020 Nov 8. doi: 10.1155/2020/1942513

PMCID: PMC7669334

PMID: 33224531

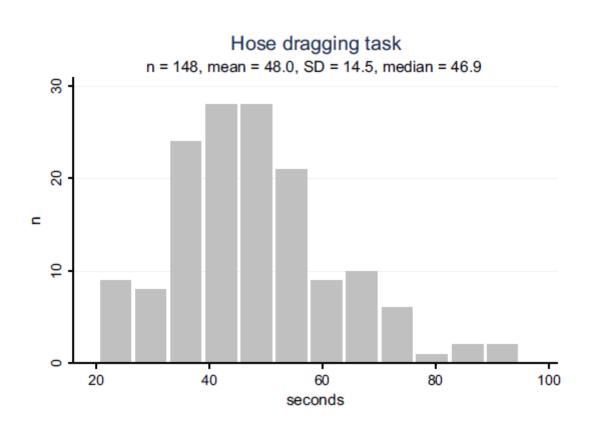


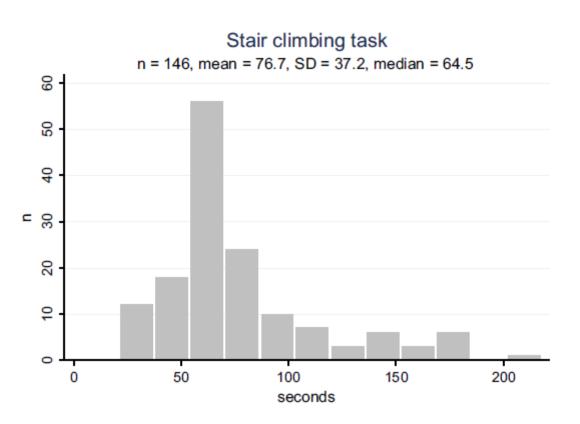
Goris Nazari, 1,2 Temitope A. Osifeso, and Joy C. MacDermid 1,2,3,4





TESTING OF HOSE DRAG AND STAIR CLIMB IN EQUIPMENT



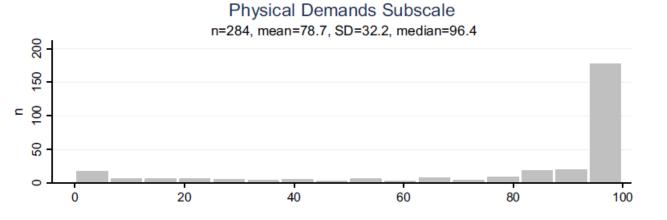


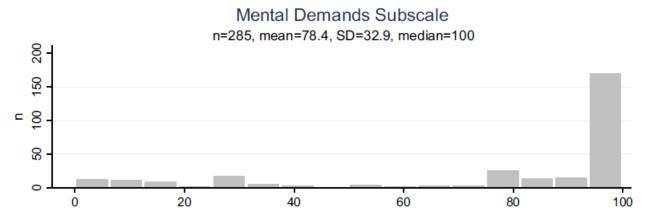
- Measuring work limitations can help with evaluating the impact of interventions
- Maybe helpful in the RTW process

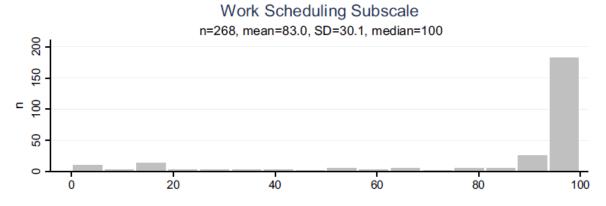
DIFFICULT	All of the Time (100%)	Most of the Time	Half of the Time (50%)	Some of the Time	None of the Time (0%)	Does Not Apply to My Job
a. Get to work on time	□1	□2	□3	□4	□5	□6
 Stick to a routine or schedule without having to rearrange your work tasks 	□1	□2	□3	□4	□5	□6
c. Work without taking frequent rests or breaks to avoid discomfort	□1	□2	□3	□4	□5	□6
d. Work the required number of hours	□1	□2	□3	□4	□5	□6
e. Handle very demanding or stressful work situations	□1	□2	□з	□4	□5	□6

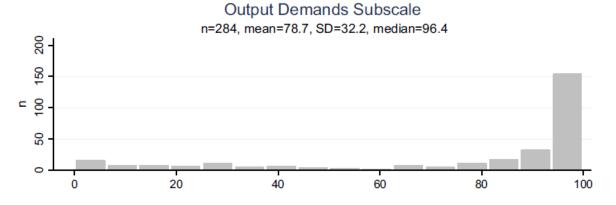
FIREWELL

WLQ SUBSCALES









PICK THE RIGHT TOOL FOR THE JOB

CS UNITEC™ EX1203-1850B FIREMAN AXE PICK HEAD 4LBS COPPER BERYLLIUM W/ NUPLA HANDLE

AA Item#: EX1203-1850B

CS Unitec Part#: EX1203-1850B

Manufacturer: CS United



CS Unitec™ EX1203-1850B Fireman axe Pick head 4lbs Copper Beryllium w/ Nupla Handle Non Sparking Non Magnetic Utility Tools Hatchets/ Axes

This item qualifies toward free freight | Free ground shipping on qualified web store order \$250.00 and over!

Image may not be exact product match.

\$617.65

Per 1 Piece Package \$617.65 Per Piece



Camping Axe, 15" Hatchet for Wood Splitting and Chopping, Gardening Small Axe Wooden Handle Tools with Sheath for Camping, Hiking (15inch)

Brand: Toolzeen

3.7 ★★★☆☆ ∨ 5 ratings

\$1680

Get Fast, Free Shipping with Amazon Prime FREE Returns ~

Instrument Design Item Generation (Qualitative)

- Interviews: 21 firefighters (15 males, 6 females).
 - Alberta, British Columbia, Nova Scotia, Ontario, Prince Edward Island, Quebec
- Nominal group exercises: 20 firefighters at a provincial firefighter conference.
- Items generated were categorized into the domains.





Item Selection (Quantitative)

- Survey: 53 firefighters evaluated the relevance of the items and the frequency with which the tasks were performed.
- Content analysis items were classified as:
 - strong potential,
 - questionable,
 - not appropriate.
- Item pool refined and clarified by a panel of expert measurement researchers and firefighters.

FIREWELL





Think about your recent performance of the firefighting tasks listed below. Rate how much you were limited in your ability to do your usual firefighting tasks.

Check "Does Not Apply" if the question asks about something that is not part of your job.

How much were you limited?	Not Limited at all (0%)	Limited some (25%)	Limited to half (50%)	Limited a lot (75%)	Unable to do (100% limited)	Does Not Apply
1. Put on and wear PPE			0			
2. Put on and wear SCBA						
3. Perform CPR						
4. Lift/carry heavy tools						
Enter/exit fire truck and load/unload equipment	0	-	0	0	0	
6. Fire suppression tasks						
7. Use axes, nozzles, ropes, door breaching equipment, extrication tools, chainsaws, and other firefighting equipment	П	0		0	0	0
Climb multiple floors wearing PPE and/or carrying heavy equipment		0	0	0	0	0
Work at heights and/or on ladders	0	0	0	0	0	
10. Forcible entry, demolition, or prescribed/controlled burning	_		0		0	
11. Victim extraction, carry, drag, or lift		0	_	0	0	
12. Enter/exit fire scene; or bailouts		_	_	0	_	

- 35 items
- 5 domains of work:
 - 1. physical,
 - 2. social/interpersonal,
 - 3. cognitive,
 - 4. emotional,
 - 5. routines/time management

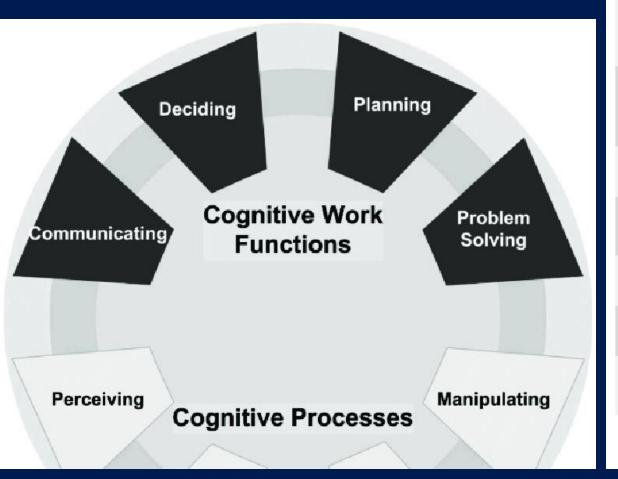


PHYSICAL TASKS



How much were you limited?	Not Limited at all (0%)	Limited some (25%)	Limited to half (50%)	Limited a lot (75%)	Unable to do (100% limited)
1. Put on and wear PPE					
2. Put on and wear SCBA					
3. Perform CPR					
4. Lift/carry heavy tools					
Enter/exit fire truck and load/unload equipment					
6. Fire suppression tasks					
7. Use axes, nozzles, ropes, door breaching equipment, extrication tools, chainsaws, and other firefighting equipment					
8. Climb multiple floors wearing PPE and/or carrying heavy equipment					
9 Work at heights and/or					

COGNITIVE WORK



30. Remember specific training (e.g., equipment), protocols, operating procedures			
31. Analyze personal risks on scene; situational awareness			
32. Make critical decisions			
33. Transition from one task to another quickly			
34. Prioritize actions			
35. Focus on tasks at hand			
36. Problem-solve in stressful situations	\boxtimes		

EMOTIONAL WORK

How much were you limited?	Not Limited at all (0%)	Limited some (25%)	Limited to half (50%)	Limited a lot (75%)	Unable to do (100% limited)	Does Not Apply
24. Manage my emotions during critical incidents						
25. Manage my emotions after a bad call						
26. Keep out distracting memories/emotions		\boxtimes				
27. Avoid compassion fatigue and burnout						
28. Manage emotions related to calls involving children						\boxtimes
29. Manage stress response from alarms/ emergency calls						



INTERPERSONAL

20. Work as a team in the field with other firefighters and public safety personnel			
21. Help with debriefing or support of fellow firefighters after stressful situations			
22. Maintain positive relationships with firefighter colleagues			
23. Maintain professional and compassionate interactions with the public			

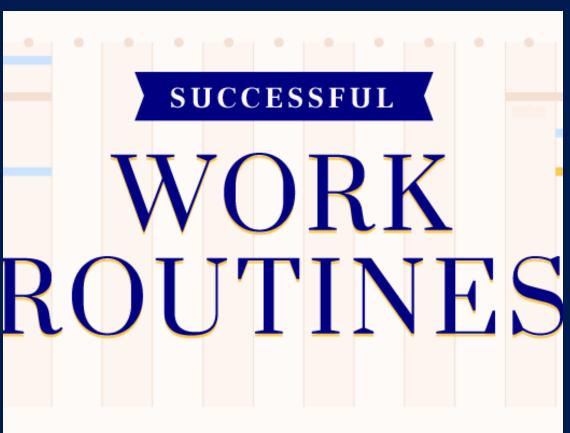


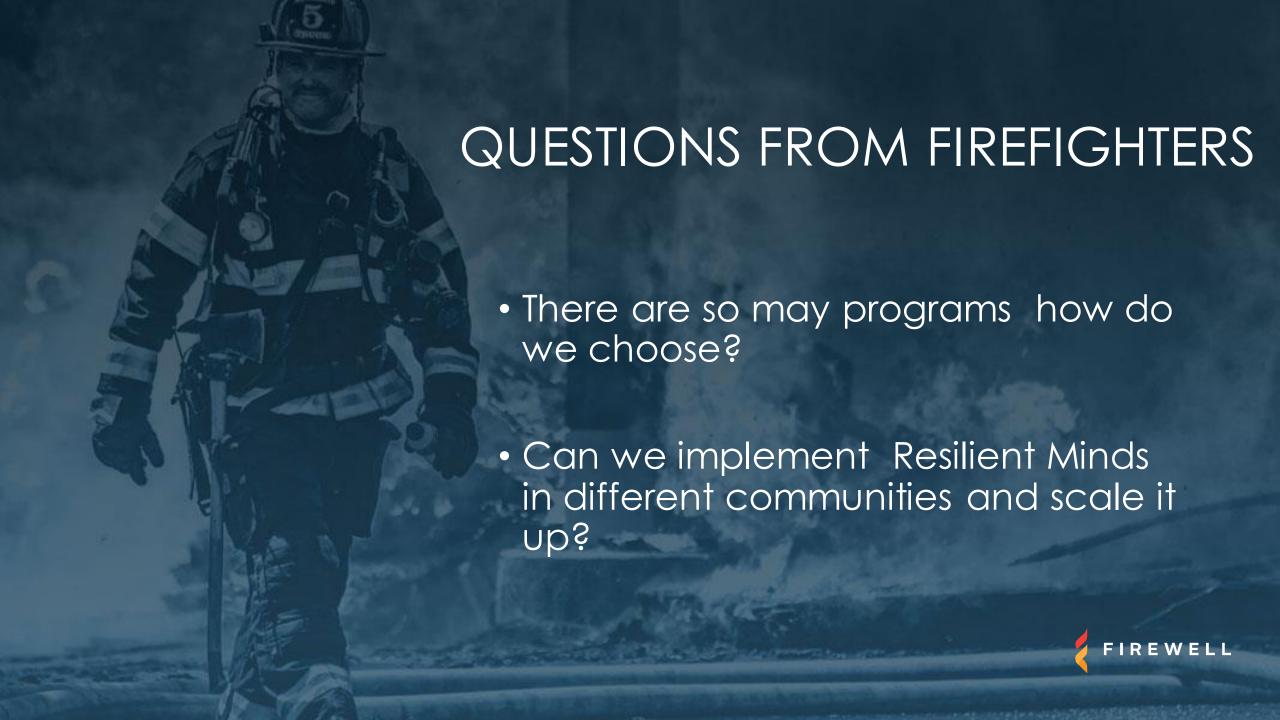
Version 8 (February 9, 2022)

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WORK ROUTINES

13.Able to manage full shift/call				
14. Complete all drills or training				SUCCESS
15. Maintain firehouse/ department routines (e.g., truck and equipment checks, general maintenance)				WO
16. Keep up the pace for urgent tasks				DOTITI
17. Maintain expected speed and proficiency				RUUI.
18. Complete tasks at the level needed to protect public safety				
19 Farn/maintain respect	-	-	-	







Comparison of Mental Health Programs and Update of Resilient MindsTM: A qualitative study of participants and trainers

Dr. Joy C. MacDermid, Sara M. Stretton, Margaret Lomotan, Shannon C. Killip, Steve Fraser

- 14 participants
 - 10 career firefighters
 - 3 volunteer firefighters
 - 2 firefighter staff
 - 8 women, 5 men
 - Age: mean= 47 (min=30, max=66)
 - Years of service: mean=18 (min=5, max=32)



Program combinations	Number of participants
RM and R2MR	8
RM and Working Mind	1
RM and BOS	1
R2MR and BOS	2
RM, R2MR , BOS, and another	1
RM, R2MR, BOS, and Working Minds	1

RM= Resilient Minds, R2MR= Road to Mental Readiness, BOS= Before Operational Stress

Theme 1: Program Similarities and Distinctive Features

Program Similarities

Use of various teaching methods: lecture style, group discussion, role-playing, group exercises

Similar program goals: promoting mental resiliency, mental health awareness, and destigmatization

Similar skills: recognition of mental health issues, how to get assistance, building resiliency, effective communication

Distinct Program Features

RM is largely group participation

R2MR is largely lecture style

BOS is largely lecture style

In-person, group interaction/role-playing, and fire-specific courses were the most effective and engaging delivery and teaching methods

It was really built for firefighters, all the examples, discussion, everything was about firefighting. You could speak our language. We didn't have to try to explain anything to somebody when we were talking about situations because we just all understood, because it was our similar language, experiences, [and] situations that we deal with.

[R2MR] seemed very vague... I couldn't connect to how it was going to apply to what I was doing... [R2MR] didn't have that same feeling of Resilient Minds, because the language and the different examples that [R2MR] were using were military specific, so it didn't have that same and citizens effect.

Theme 2: Program Preference

- 78% of participants who took RM preferred RM
- No concerns about course content across all programs
- All programs were viewed as relevant
- 57% of participants believed taking multiple mental health courses is the best approach to mental health training

Program combination	Program preference
I never fold like taking already know this. I dor	6/8 preferred RM (context competency and h, practical skills) ay attention actually
felt like it work in the state of the state	needed live been internersency
the sometical to get of to	BUT BROTHEREYERS (AND OF HES AFE TELEVALLY TO AT BOOK OF THE BOOK OF THE STATE OF THE BOOK
stopkenthermonetil	practical skills)
learning the year and by	PHONE TO
resilient minds propertien	Olithighterend all programs are relievants of
IN IN CITTE RESPONDERS. All (1/1, no preference (all programs are relevant). of the knowledge is good, and [they
RM, R2MR, BOS, and Mhyking	ild/1010 preference (Allebrograms are relevant)



Theme 3: Barriers and Program Improvements

- 57% of participants expressed that the largest barrier to taking courses is the cost
- R2MR is free for public safety personnel that are currently employed

[Programs and learning resources] have limitations because they're only as current as the guide, and nobody has money to actually update these things and send them out to everybody who has them.



Choosing a Program: Course topics

Course topics	RM	R2MR	BOS
Attitude toward mental illness	Large focus	Covered	Briefly or indirectly covered
Stigma	Covered	Covered	Not covered/don't recall
Communication skills	Main focus	Main focus	Participants unable to reach consensus
Recognition of stress/mental health symptoms	Large focus	Main focus	Covered
Help seeking behaviors	Covered	Covered	Covered
Gender considerations	Not covered	Not covered	Not covered
Treatment Options	Covered	Covered	Participants unable to reach consensus

Choosing a Program: General Course Overview

	RM	R2MR	BOS
General course time commitment*	8-10 hours	24-26 hours over 4 days **	Online/education: 8 hours Intensive: 2-hours/week for 8 weeks
Delivery format*	Virtual and in-person	Virtual and in-person**	Online: virtual only Education: both available Intensive: in-person only
Main teaching method	Group participation/application	Lecture style	Lecture style
Target of learnt skills	Yourself, peers, civilians	Unable to reach consensus (3 participants said yourself, 3 participants said peers)	Yourself
Application into work/personal life	Effective communication with peers, civilians, and loved ones	Recognizing mental health issues and creating a common language to talk about it among peers	Mostly theoretical and lacks practical application. Understanding the brain has helped with destigmatization
Unique characteristics	Cultural competency: "created by firefighters for firefighters."	Use of the mental health continuum: created a common	Taught by mental health professionals
Note: Results are based on partiaken by our participants, see s	Focuses on self peers, and ticipant perceptions. * Obtained from program stallide 5 hote.	language among peers aff/websites, ** is based on the currently available vers	sion of R2MR from CIPSRT, this was NOT the version 30

Discussion: future programs/iterations

- Program descriptions should be comprehensive
 - Including: main teaching style, focus of the program, overall cost, topics and time spent on each
- Instructors should include a peer and mental health professional ⁶
- Interactive and scenario-based ⁶ learning
- Content specific to firefighters ⁶

- Mental health training should be spread out through one's career in a tiered approach ⁶
- Virtual programs should be interactive and delivered over multiple sessions ⁶
- Programs should be in person where possible ⁶
- Mental health education should be incorporated into salaries and working hours ⁶









Q

MENTAL HEALTH

Canadian Mental

Health Association

ADDICTIONS

POLICY

PROVINCIAL PROGRAMS

NEWS





ABOUT RESILIENT MINDS

TRAIN-THE-TRAINER WORKSHOP

RESILIENT MINDS COURSE

Resilient Minds

An effective, sustainable approach to psychological health training



Resilient MindsTM Overview

1 Self

Be Prepared and Proactive at all Stages of Stress and Trauma

2 Peers

Support Peers Using the 4R Action Toolkit™

3 Citizens Use a Trauma-Informed 4R Action Toolkit[™] with Citizens

4 Self

Manage Stress and Practice Personal Tools





Train-the-trainer

2 Instructor Trainers



3-days in-person





Up to 20
Peer Instructor
Candidates







DELIVERY

Current status in capacity (across Canada)	Resilient Minds - English	Resilient Minds - Indigenous First Responders	Resilient Minds – French		
Lead Instructors	2	2	2		
Instructor Trainers	43	13	3		
Peer Instructors	Canada = 561 Ontario = 209	8	2		
Frontline Firefighters	Canada = 4,443				

Ontario = 1.622

174

311

Contact: jmacderm@uwo.ca
Questions?

Tell us - What would like us to do next?

Other Comments

FIREWELI