

A Virtual 'Community of Practice' Approach by Rural Stakeholders in Managing Pneumoconiosis in the U.S.

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Objective

Discuss evidence basis for a virtual
'community of practice' approach in
pneumoconiosis

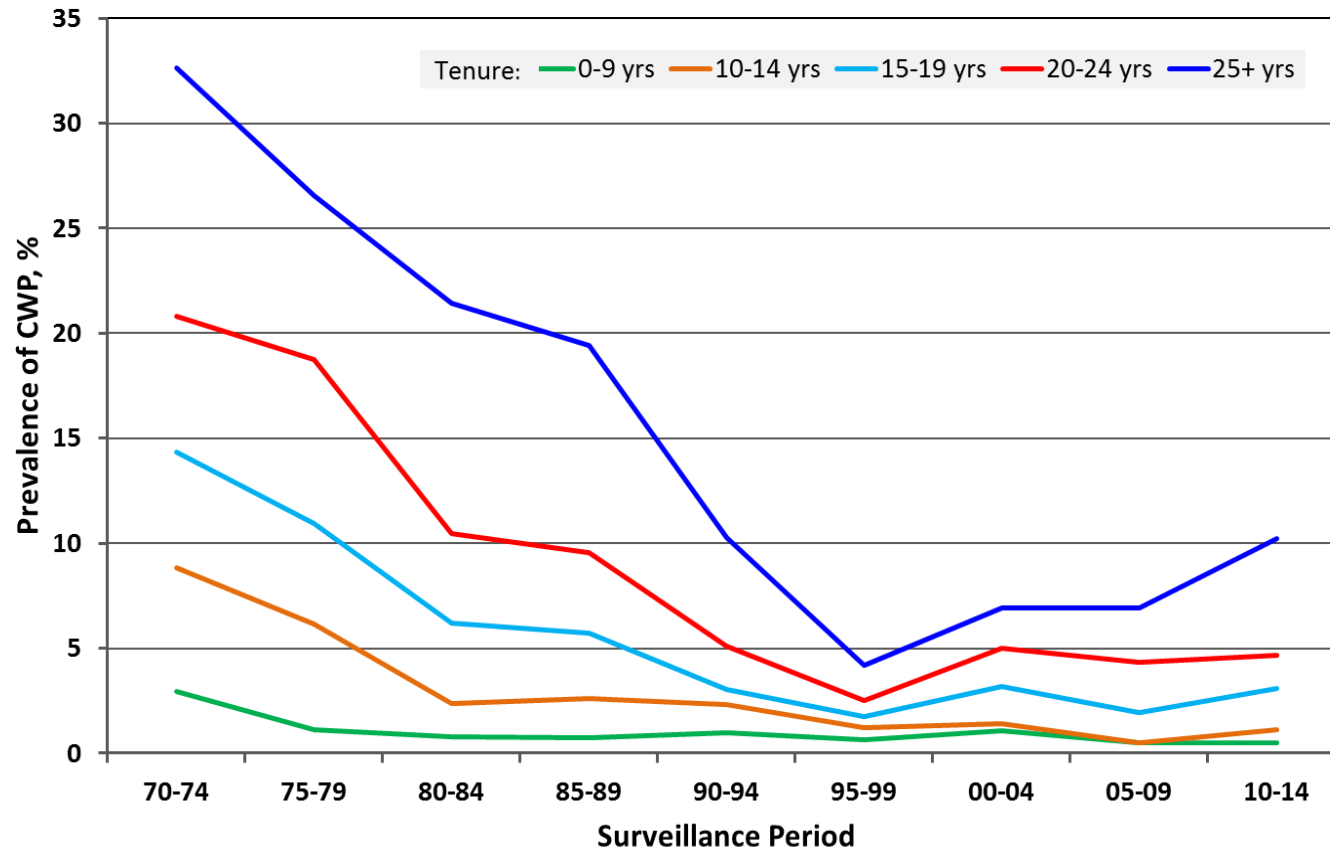


Increasing prevalence and severity of Black Lung (CMDLD)

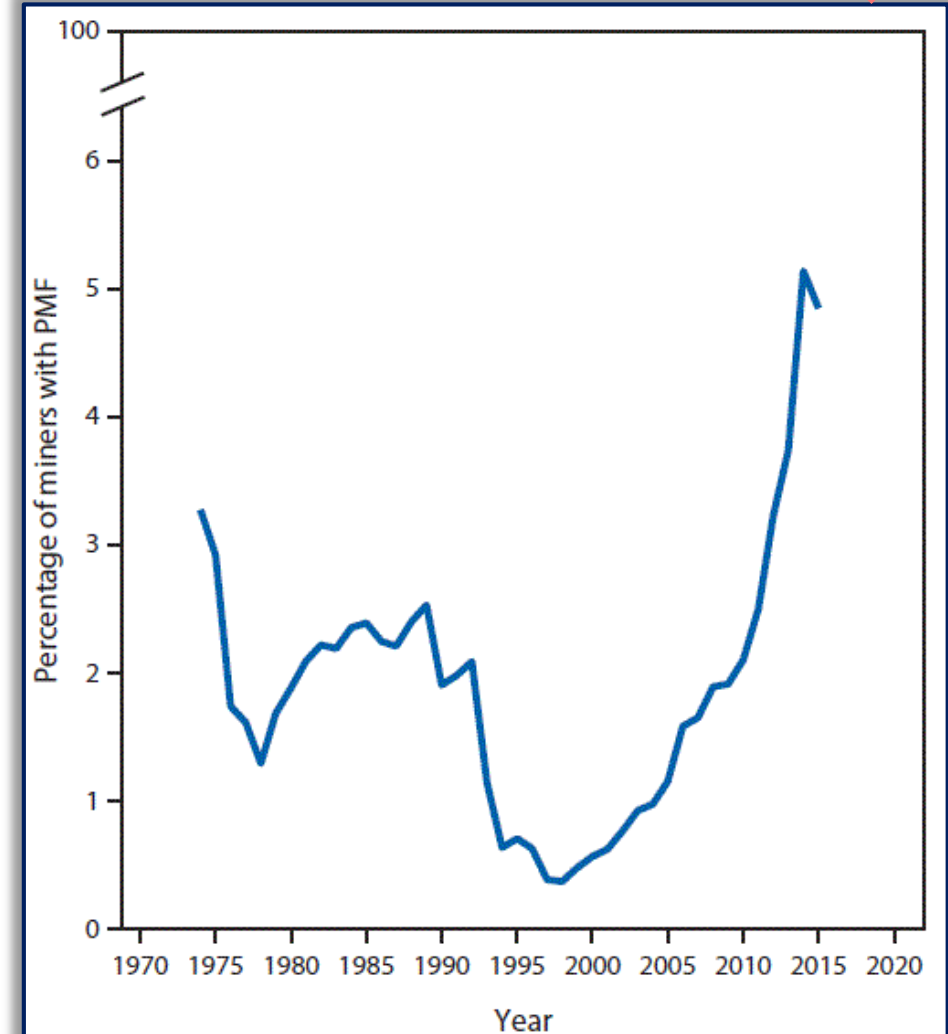


Percentage of examined miners with CWP Category 1 or greater by tenure in coal mining

(NIOSH Coal Workers' Health Surveillance Program, 1970–2014)



NIOSH Coal Workers' Health Surveillance Program

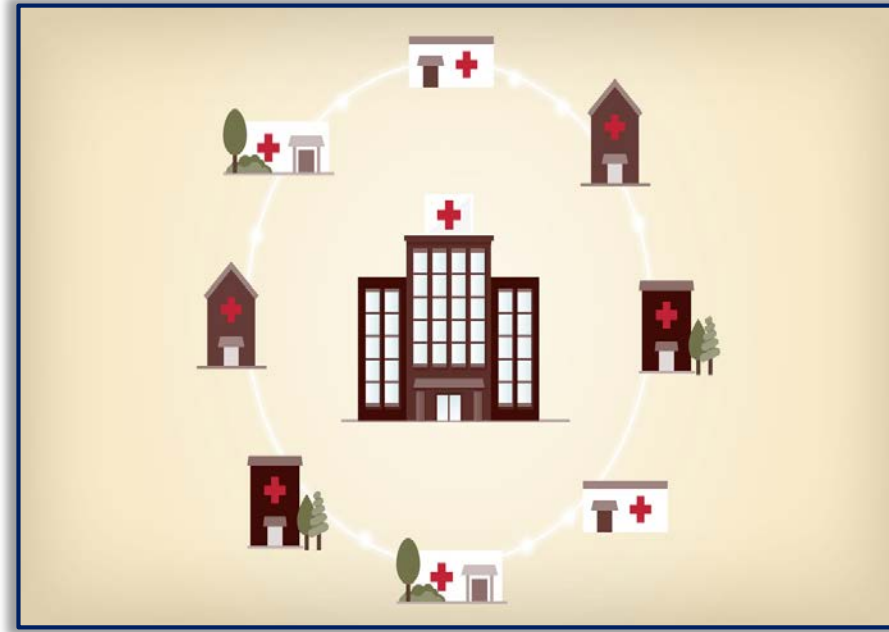


Blackley et al. MMWR 2016; 65(49): 1385-1389

Project ECHO:

a movement to
demonopolize knowledge
& amplify capacity to
provide best practice care
for underserved people

Move Knowledge Instead of Patients



Principles of the ECHO Model

A

Amplification – Use **technology** to leverage scarce resources

Share Best practices to reduce disparity

B

C

Case-based learning to master complexity

Web-based Database to Monitor Outcomes

D

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Miners' Wellness TeleECHO Program

Jointly held by the University & a community hospital in NM twice a month
Recognized by the American Thoracic Society as an innovation in fellowship education in 2019 & 2020
Rural COVID-19 innovation by HRSA Rural Health Information Hub



*About 25
attendees
per session*

Clinical providers
Respiratory therapists
Benefits counselors
Attorneys
Mine safety officers
Home health professionals

75-minute format

| | |
|--------|------------------------------|
| 10 min | Introduction & Announcements |
| 15 min | Didactic |
| 20 min | Didactic Q&A |
| 10 min | Case Presentation |
| 20 min | Case Discussion and Q&A |

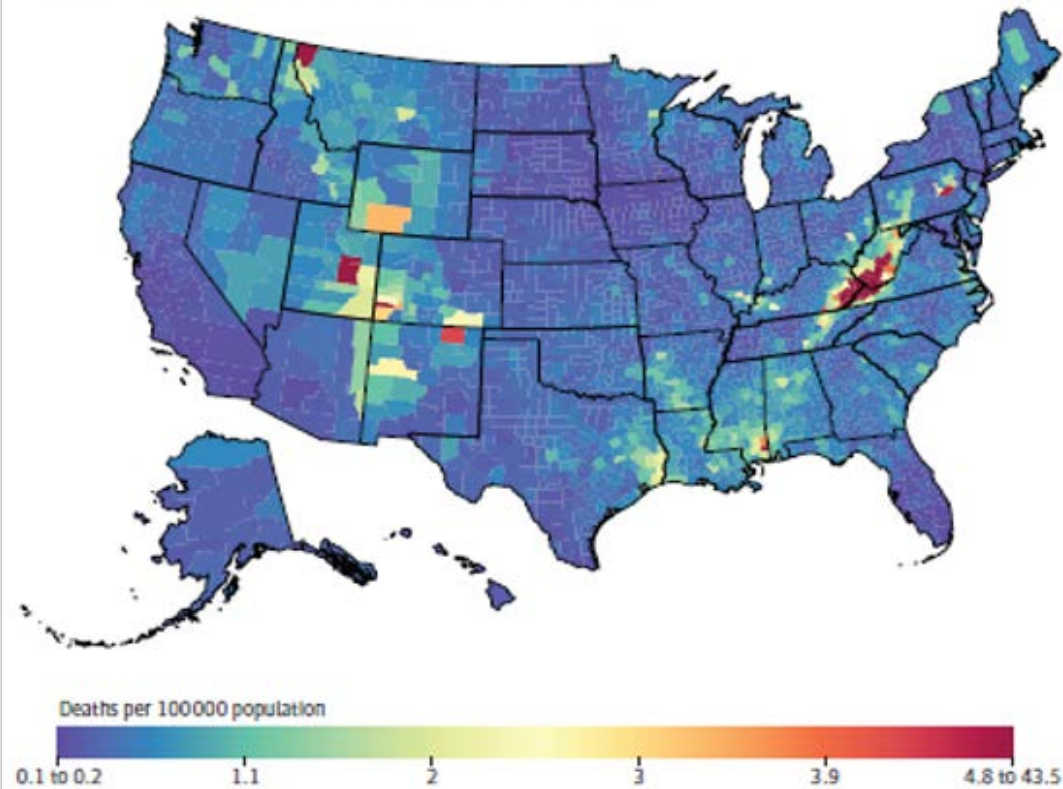
Pneumoconiosis hotspots are rural Appalachia & Mtn. West

Participants originate from these hotspots



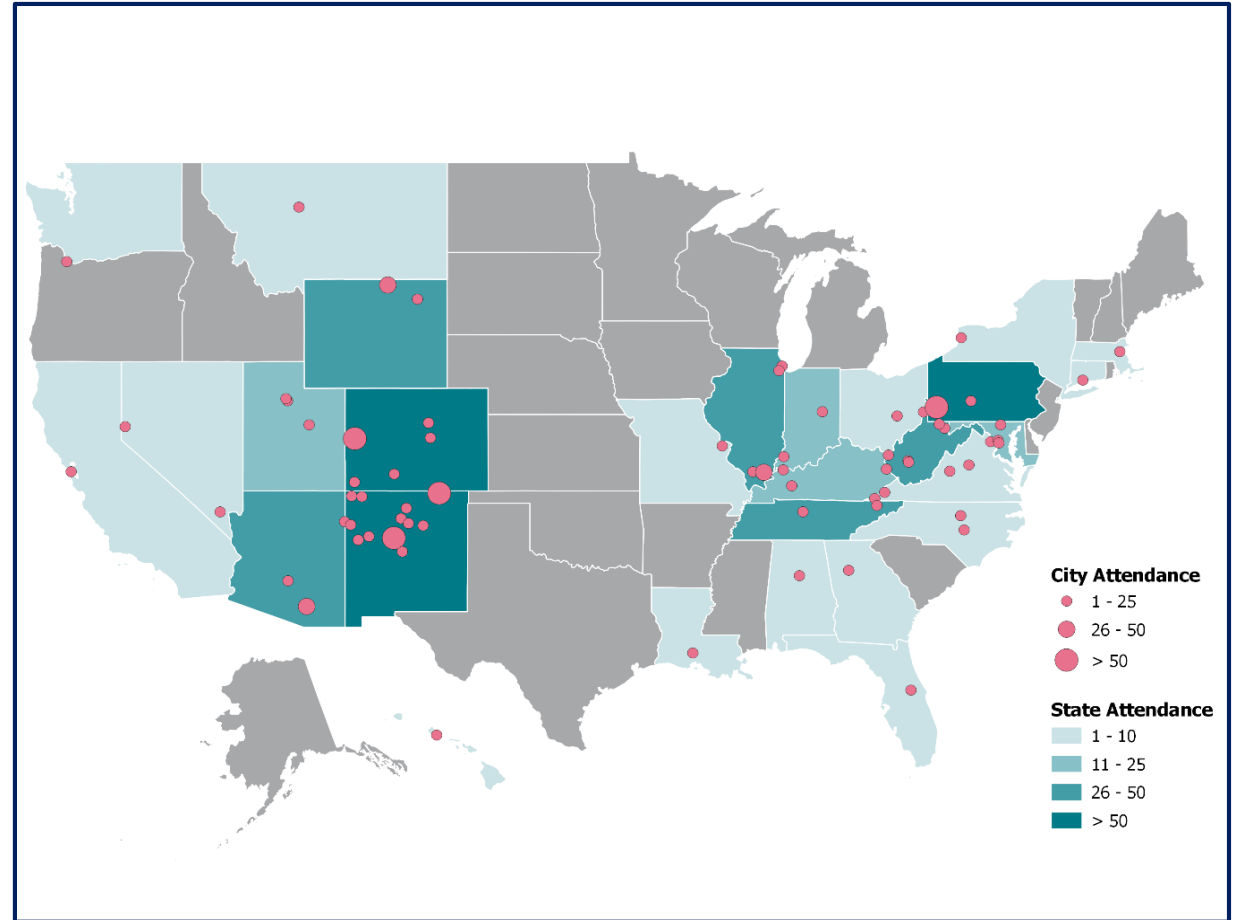
Figure 4. County-Level Mortality From Pneumoconiosis

A Age-standardized mortality rate from pneumoconiosis, both sexes, 2014



Mortality hotspot counties for other pneumoconiosis in the United States

Dwyer-Lindgren JAMA. 2017;318(12):1136-1149.



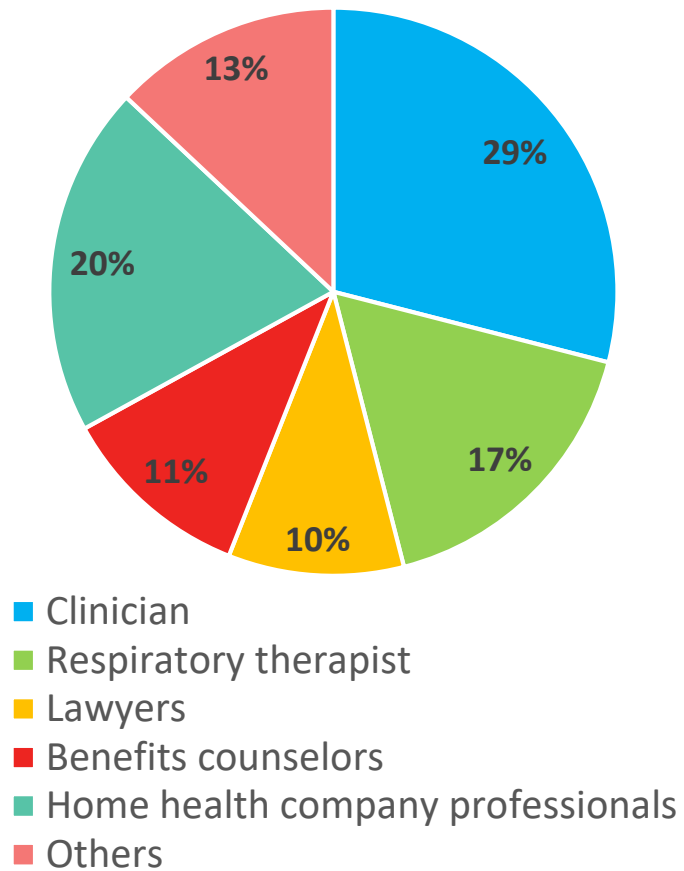
Geographical mapping indicates that participants in the 'community of practice' are located in pneumoconiosis mortality hotspots in the US, 2018-2019.

Characteristics of Surveyed Participants (n=70)

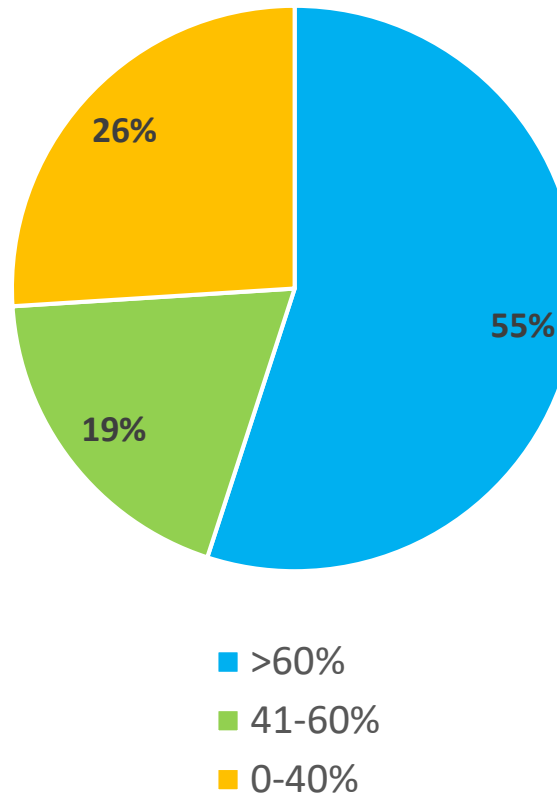
Sood et al. RRH 2020; 20: 5784



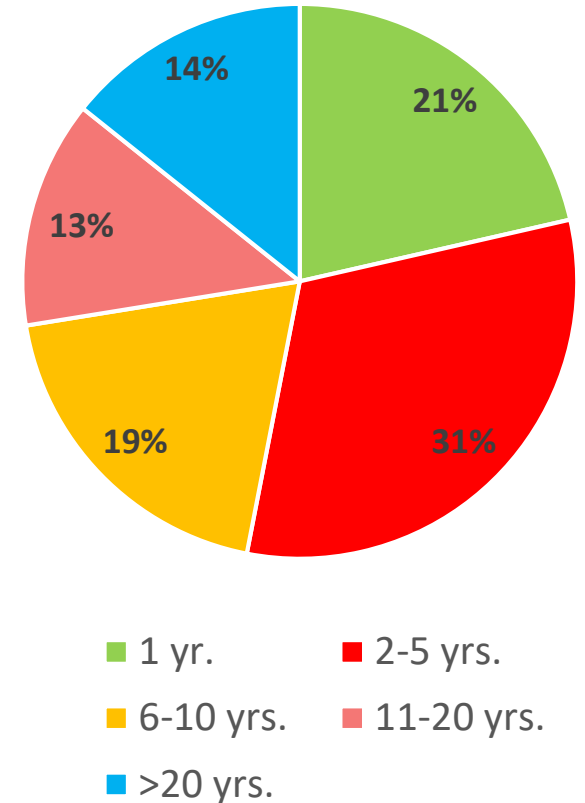
Stakeholder group



Proportion of rural miners served



Duration of miner care (in years)

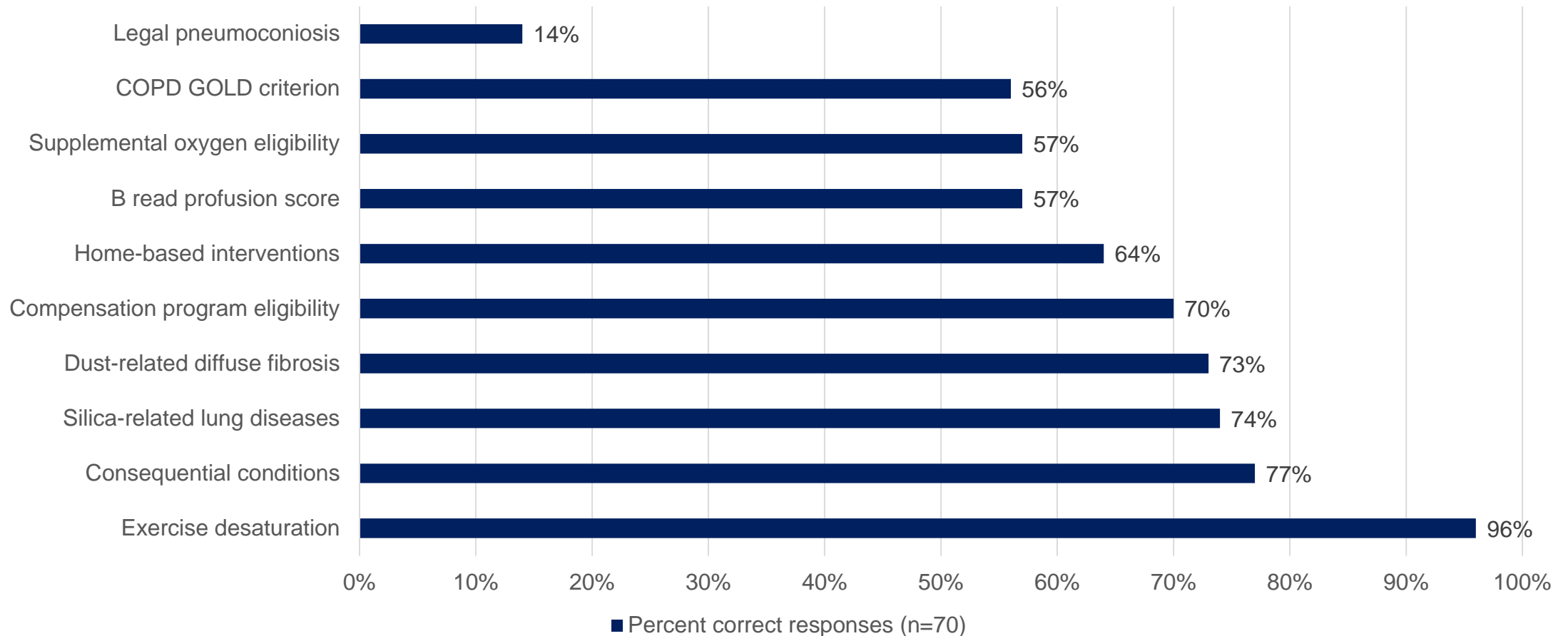


Self-reported Knowledge

Sood et al. RRH 2020; 20: 5784



% Participants Demonstrating Correct Responses to the Following Questions (n=70)

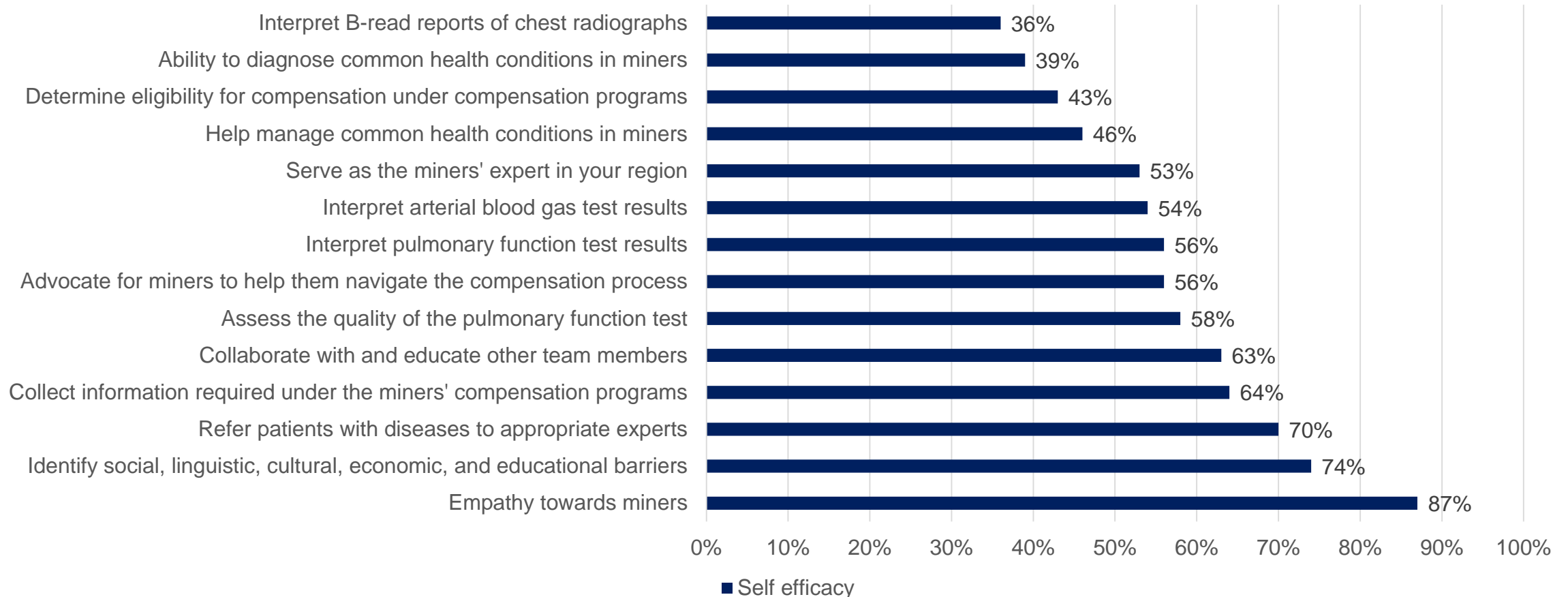


Self-efficacy

Sood et al. RRH 2020; 20: 5784



% Participants Rating Themselves as 'Competent', 'Very Competent' or 'Expert' on Self-efficacy Items, from a Convenience Sample of 70 Participants



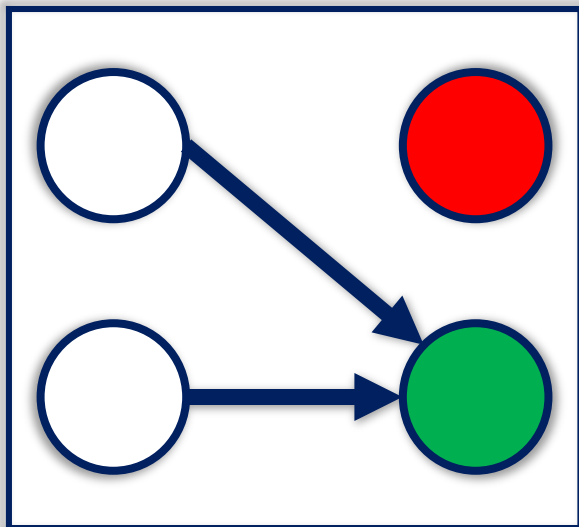
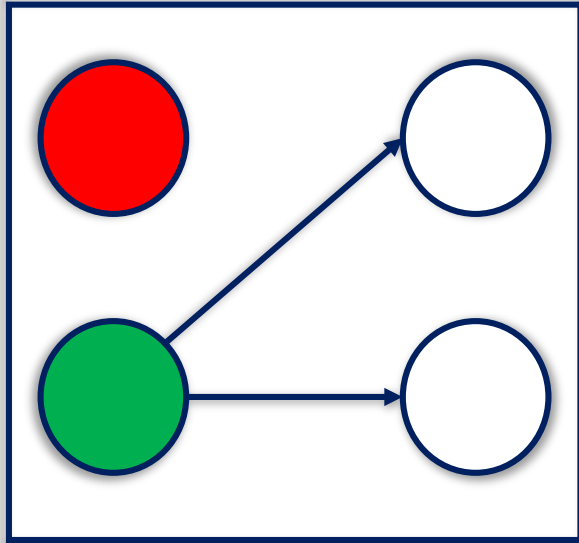
Participants Agreeing or Strongly Agreeing with Individual Collective Efficacy Items



| Collective efficacy item (n=70 participants) People in this learning community..... | % who rate the item as agree or strongly agree |
|--|---|
| ...are willing to help other members | 93% |
| ...build respect for each other's particular interests | 91% |
| ...help each other to improve patient care | 91% |
| ...find and share resources with each other | 89% |
| ...are a close-knit learning community | 87% |
| ...generally get along with each other | 87% |
| ...foster all members' ability to care for miners | 87% |
| ...can be trusted | 86% |
| ...able to manage conflicts of interests | 83% |
| ...figure out what choices to make when the clinic faces decisions | 77% |
| ...would intervene if a fellow member was arriving at a wrong conclusion | 73% |
| ...support each other in times of stress | 66% |

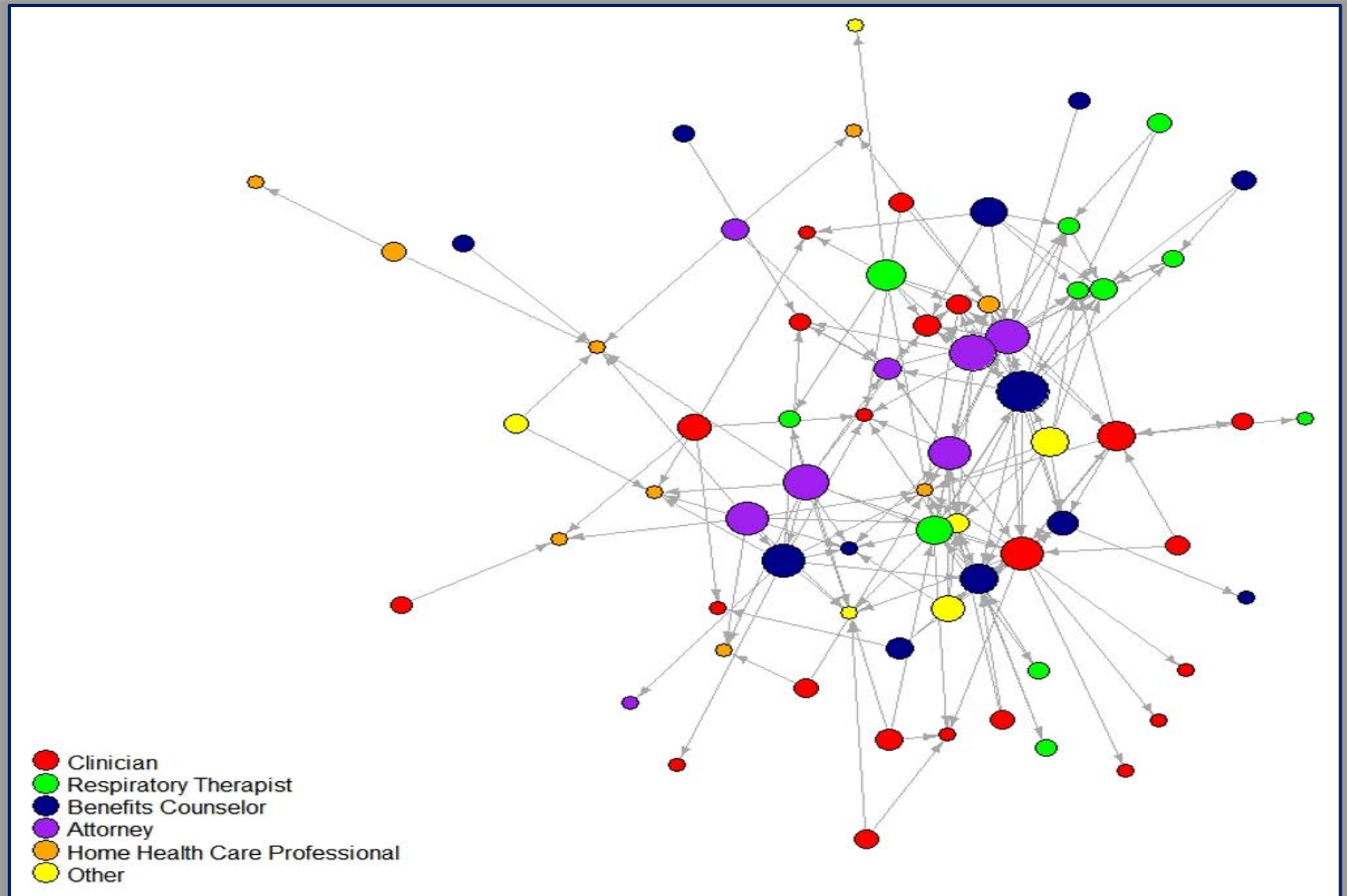
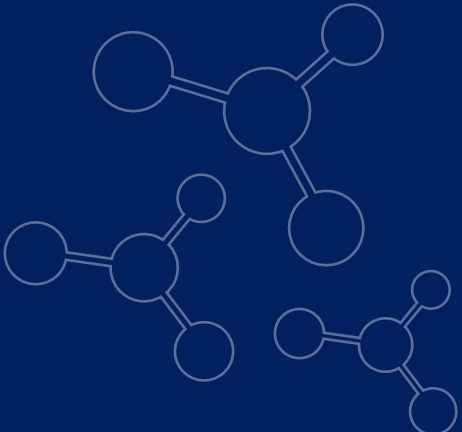
Transfer of knowledge

Sood et al. RRH 2020; 20: 5784



| Knowledge transfer | Mean (SE) |
|--|-------------|
| Number of knowledge sources (N=70) | 4.33 (0.36) |
| Proportion of knowledge sources outside of professional group (N=68) | 0.47 (0.04) |
| Proportion of knowledge sources outside of stakeholder group (n=60) | 0.51 (0.05) |

Non-clinicians
play a vital role
in transfer of
knowledge

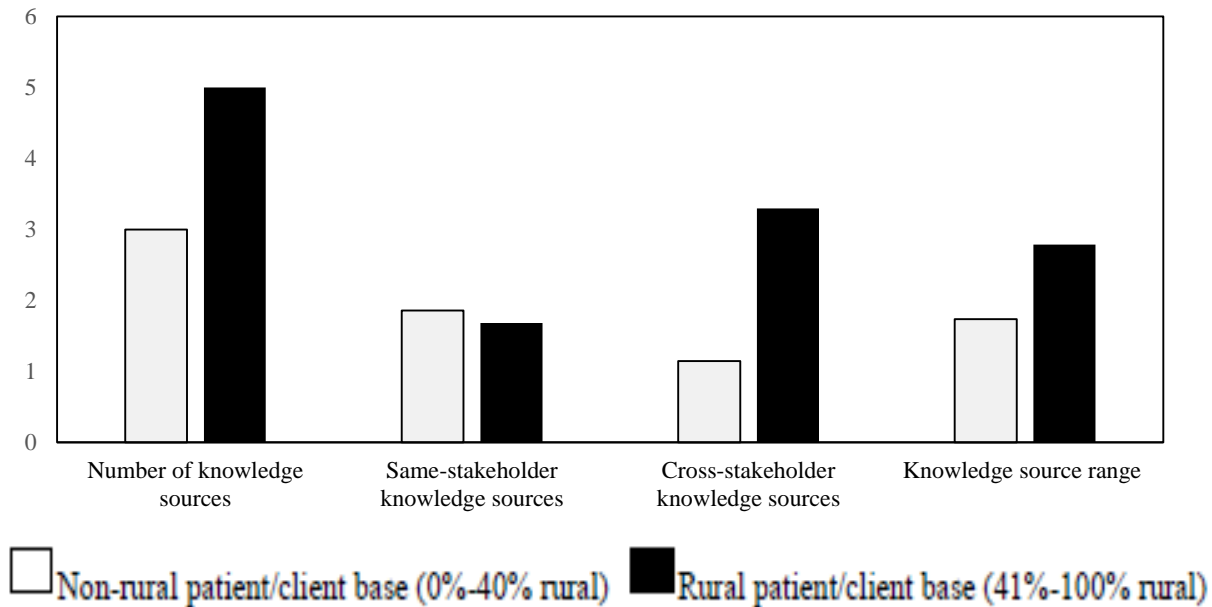


Knowledge Transfer among Rural-based Members

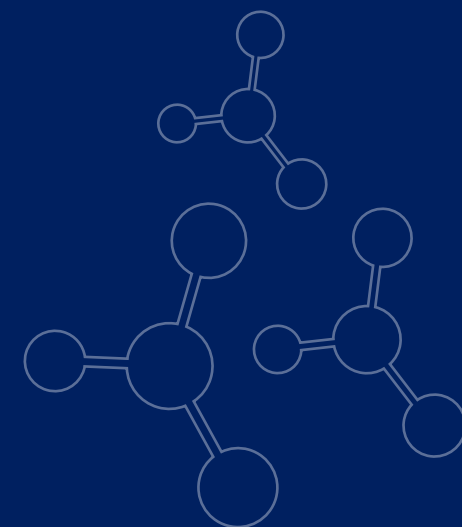
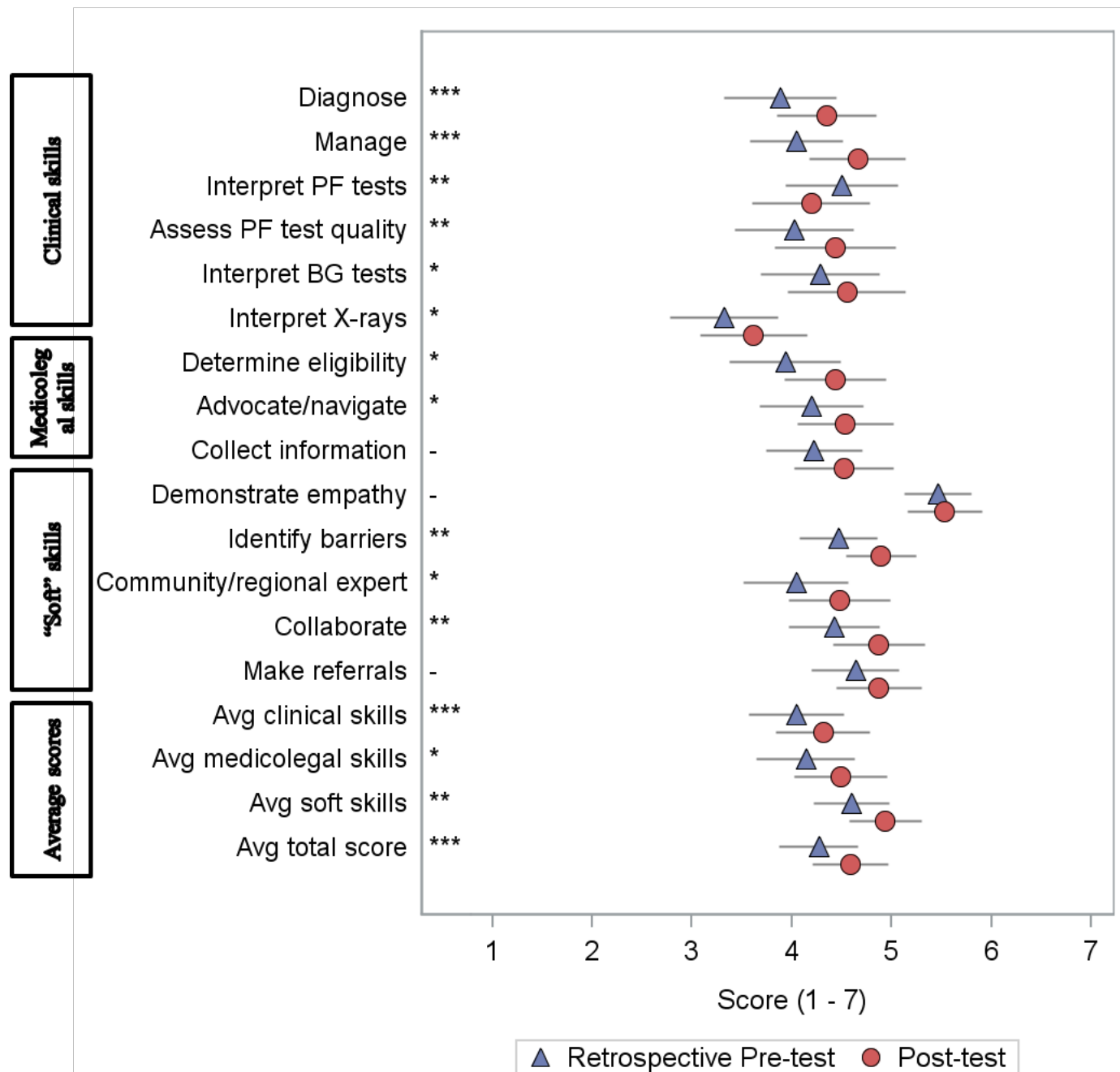


As rural patient base increases, participants report receiving knowledge from:

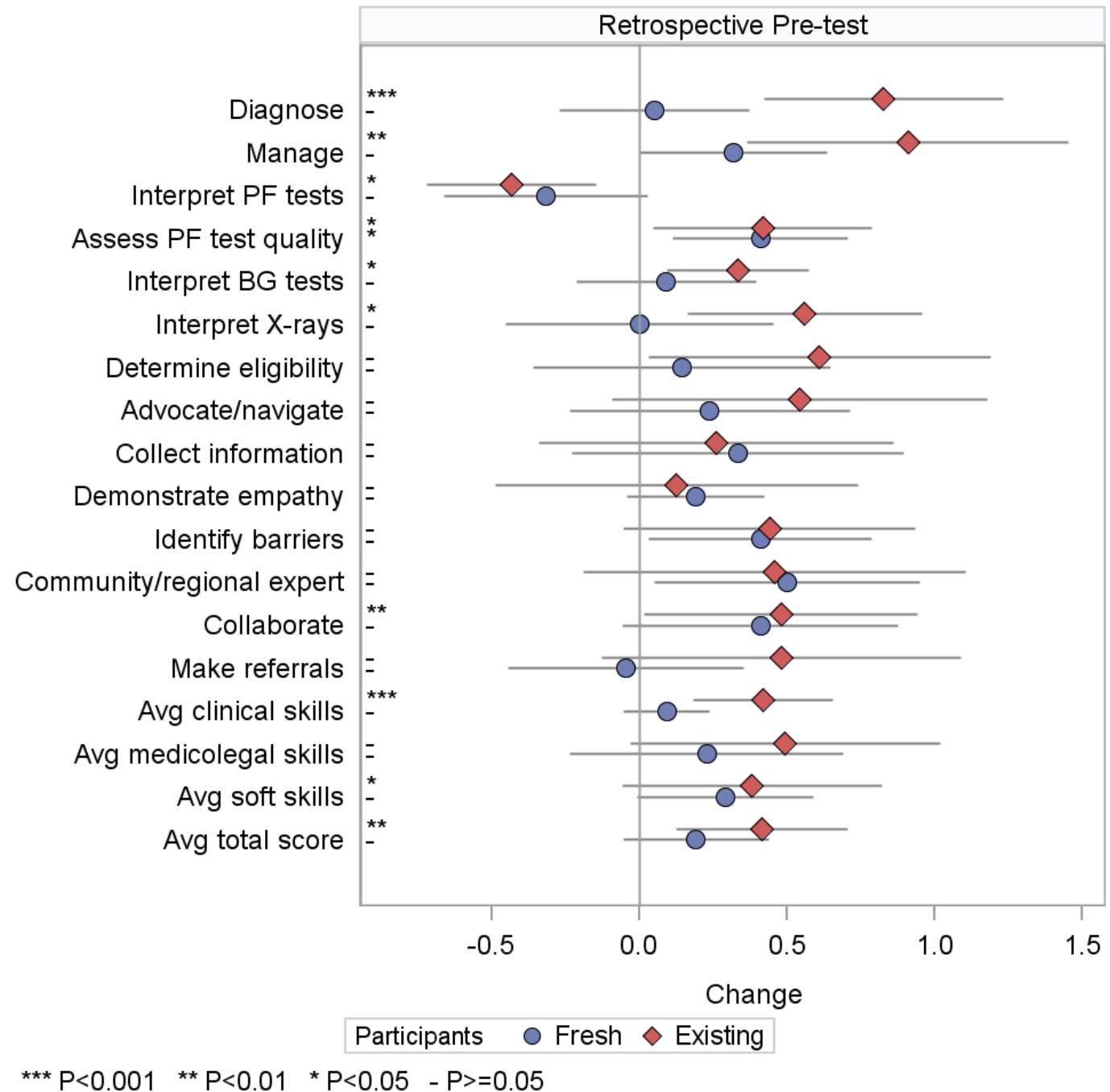
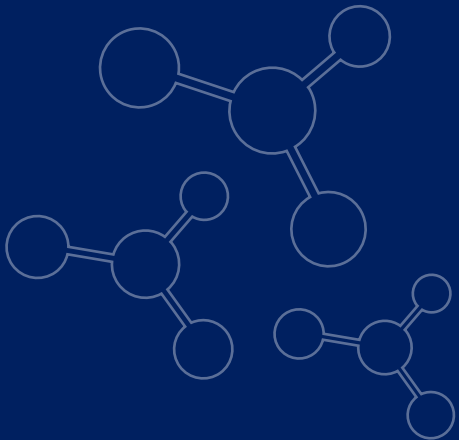
- Larger numbers of community members
- Greater variety of stakeholder groups
- Larger proportion of members outside their stakeholder group



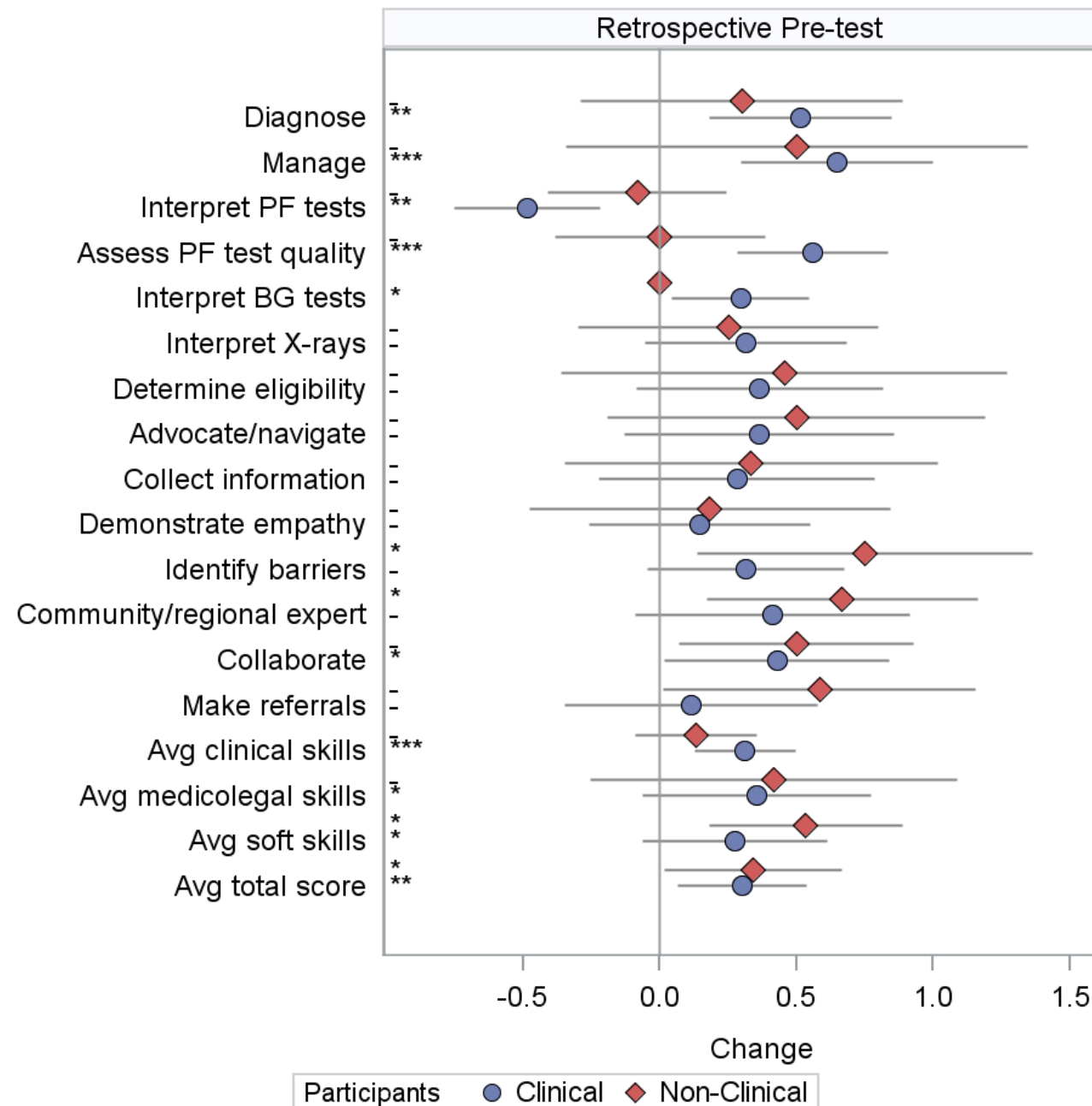
Change in self-efficacy



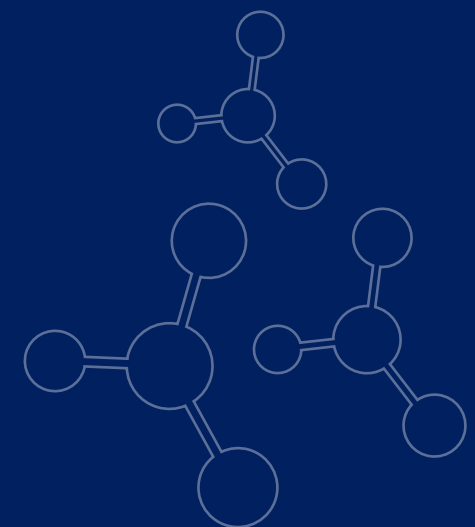
Change in self-efficacy between fresh & existing participants



Change in self-efficacy between clinicians & non-clinicians

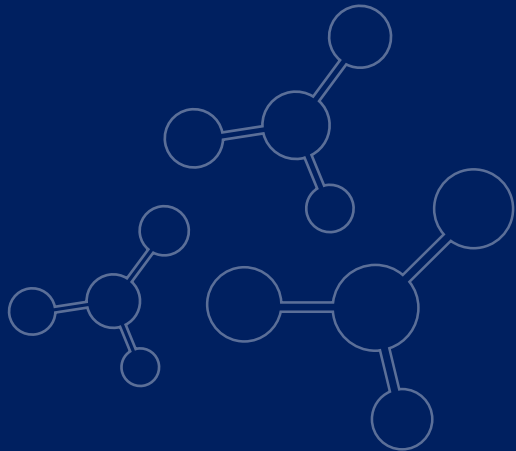


*** P<0.001 ** P<0.01 * P<0.05 - P>=0.05



Summary:

A virtual 'community of practice' in pneumoconiosis mortality hotspots



Multiple professions represented, including 29% clinicians



Lowest knowledge on 'legal' pneumoconiosis, among the questioned areas



Rated highly on trust, respect, willingness to help, and being closely knit



Knowledge transfer for most participants occurs from outside their stakeholder group



Rural participants more likely to seek information



Attorneys & benefits counselors play a disproportionate role in knowledge transfer

Summary



ECHO model can be successfully applied to professionals providing complex multidisciplinary care to miners.

Telementoring improves participants' self-efficacy with respect to clinical, medicolegal, and soft skills.

Are we ready for a virtual developmental network model for black lung rural professionals?



Acknowledgements



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Questions

