Applied Epidemiology Scientific Writing Trends, Needs, and Recommendations, 2014

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Learning Objectives

- After the webinar, participants will be able to:
  - Describe at least two aspects of the writing and publishing experience of epidemiologists for the general public, peer-reviewed publications, and CDC-specific publications (e.g., MMWR, PCD, and EID).
  - Identify at least one expectation of scientific writing by epidemiologists.
  - Identify at least one barrier and facilitator that epidemiologists experience relevant to scientific writing.

Questions for Participants

- How will you use this data?
- What have you done at your health department to improve scientific writing capacity?
- What models or lessons learned do you have that you would like to share?
- What do you envision for next steps?
  - Toolkit, trainings, etc.

Background

Who is on our team?

- CSTE Epidemiology Methods Subcommittee
  - CSTE Scientific Writing Workgroup
    - CSTE Members
    - CSTE National Office

Background

- CDC/CSTE Applied Epidemiology Competencies
  - Communication competency
- 2013 Epidemiology Capacity Assessment (ECA)
  - Publication capacity
- Informative focus groups

Focus Group Themes

- Publishing was not explicitly listed in their job description or duties, but it may be expected and can be influential in their evaluations.
- There is a lack of library and journal access for most health department employees.
- Junior epidemiologists want to publish but face multiple barriers.
- The culture of publishing and scientific writing culture is different between public health practitioners and academicians.
- “Public health practice” is not always well understood by peer reviewers.

Assessment Goals

- Describe the writing and publishing experience of epidemiologists for the general public, peer-reviewed publications, and CDC-specific publications (e.g., MMWR, PCD, and EID).
- Identify expectations of scientific writing by epidemiologists.
- Identify barriers and facilitators that epidemiologists experience relevant to scientific writing.

Methods

Methods

- Development
- Pilot
  - N=50
  - Identified wording clarifications
- Administration
  - SurveyMonkey weblink
    - All CSTE members
    - National Association of County and City Health Officials' (NACCHO) Epidemiology Workgroup
  - 18 questions
  - Quota Sampling (n=396)

Methods

- Statistical Analysis
  - De-identified data
  - SAS (version 9.4, SAS Institute Inc, Cary, NC) at a significance level of $\alpha=0.05$.
  - Univariate descriptive statistics -frequencies and percentages.
  - Bivariate analyses -chi-square and Fisher's exact tests

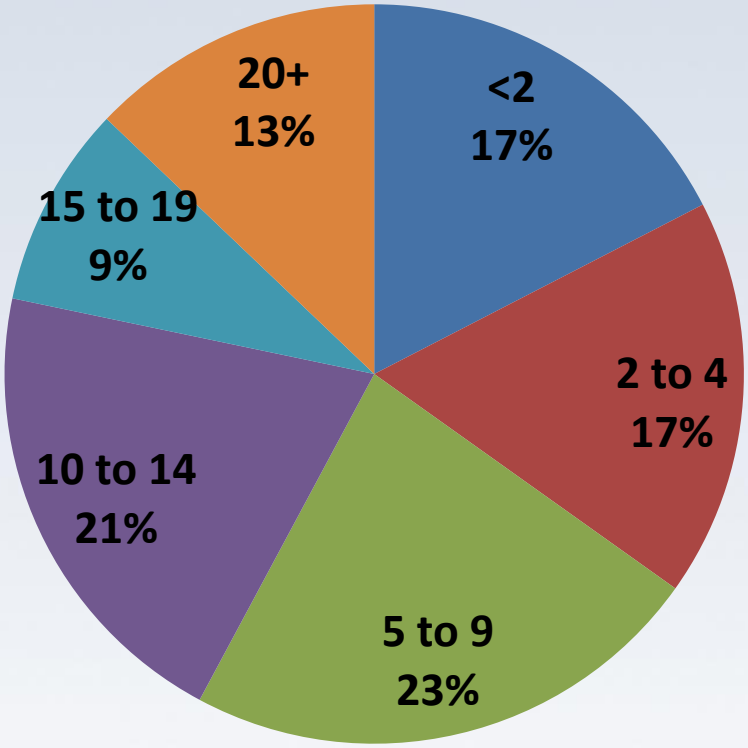
Definitions

- A **report** is defined as any document that is developed with the intention of relaying specific information and may include technical writing, such as fact sheets or instruction manuals.
- A **manuscript** is defined as a compilation of original scientific findings that is often submitted to a journal and may include abstracts.
- **Public use** refers to a report or manuscript published or distributed through any route that is not a peer-reviewed publication.
- **Peer-reviewed journals** are publications that require submitted content to be reviewed by experts in the field who are not a part of the editorial staff prior to publication. Some examples of peer-reviewed journals include *American Journal of Public Health*, *American Journal of Epidemiology*, and *Journal of Epidemiology and Community Health*.
- **CDC-specific publications** include the *Morbidity and Mortality Weekly Report* (MMWR), *Emerging Infectious Diseases* (EID), and *Preventing Chronic Disease* (PCD) that may or may not be peer-reviewed.

Results & Discussion

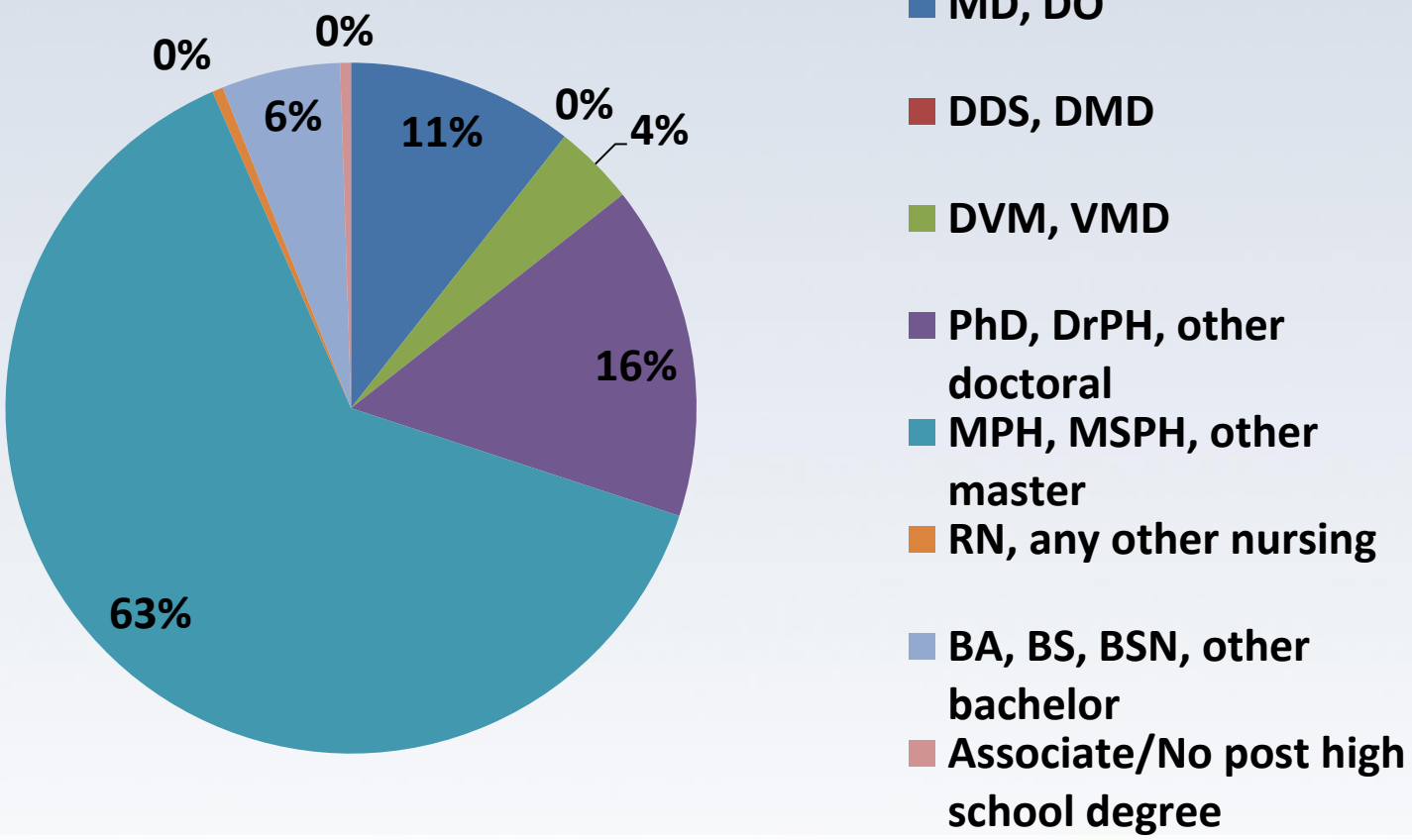
Demographics

- Years of Experience



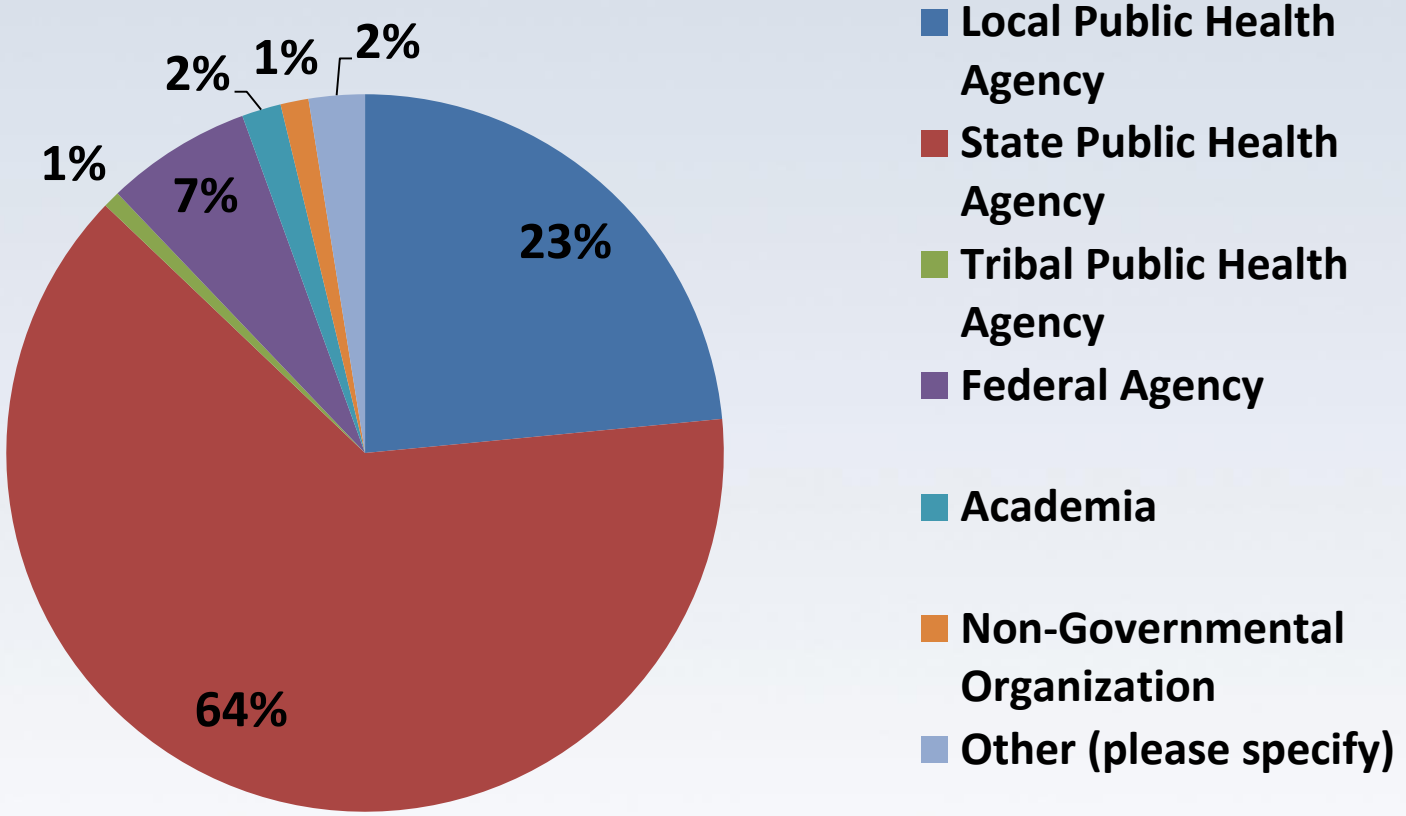
Demographics

- Highest Degree Obtained



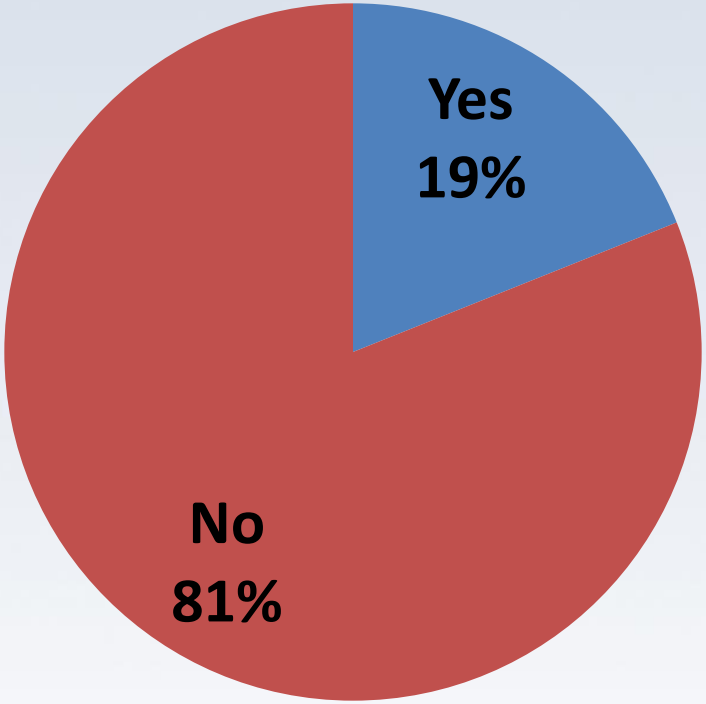
Demographics

- Place of Work



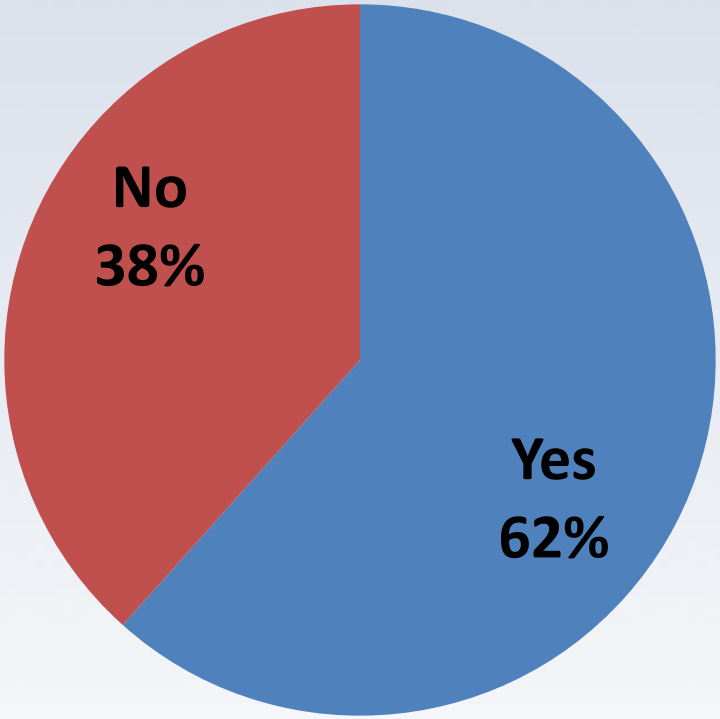
Demographics

- Appointment at university or academic center



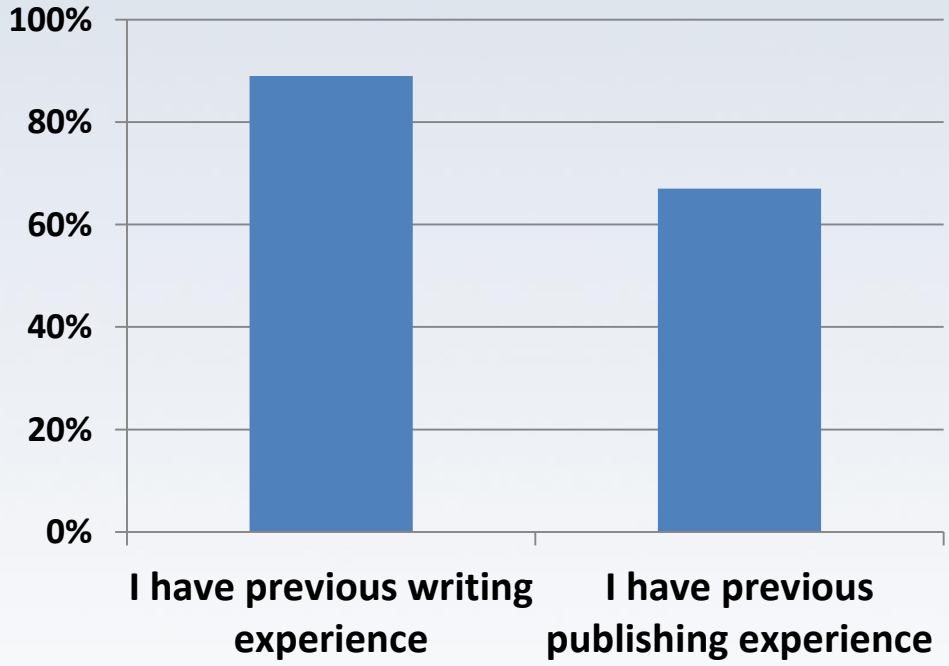
Demographics

- CSTE Membership

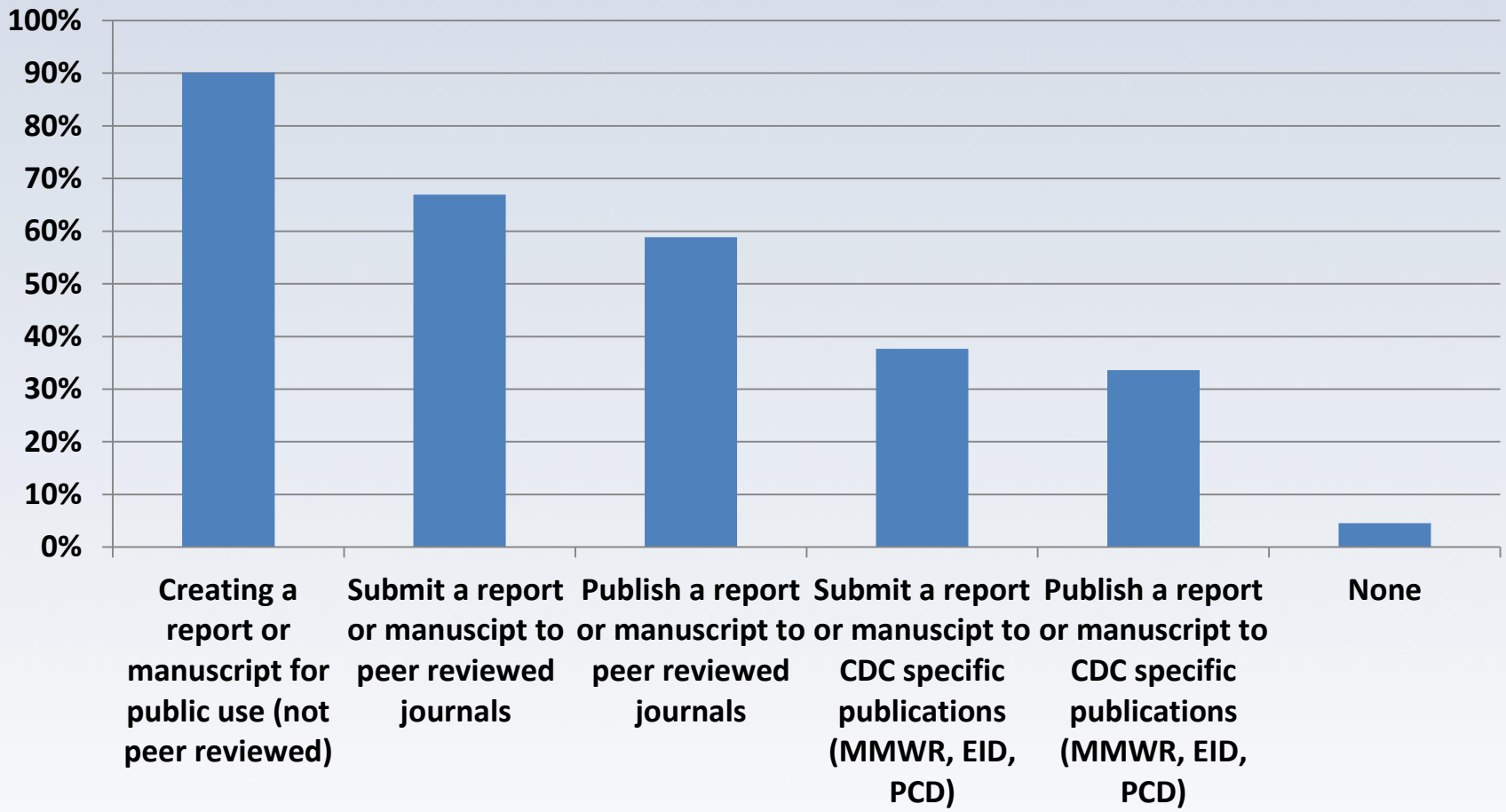


Scientific Writing & Publishing Experience

- General Experience
  - Almost everyone (89%) reported writing experience
  - Fewer (67%) reported publishing experience

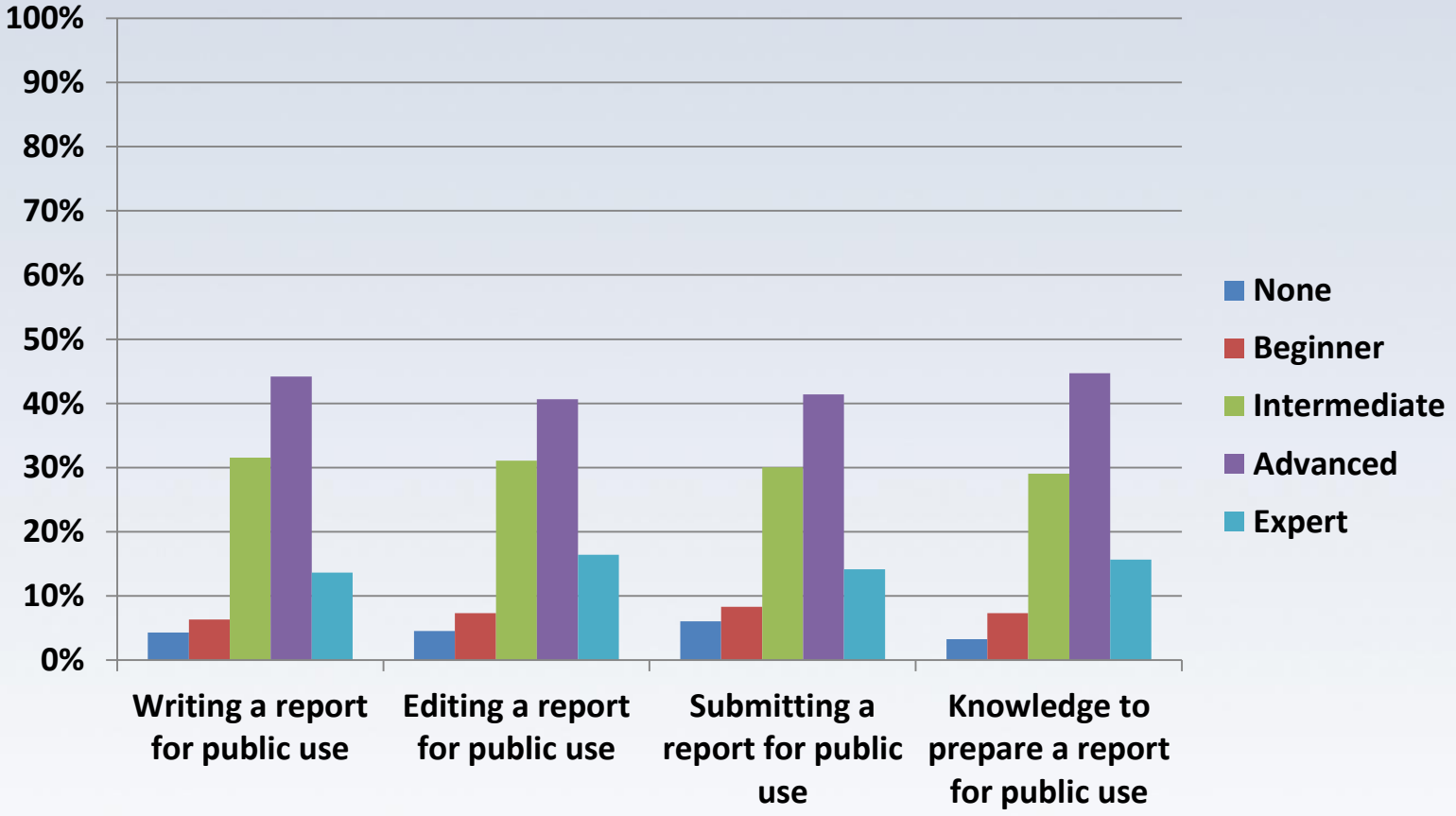


Scientific Writing & Publishing Experience



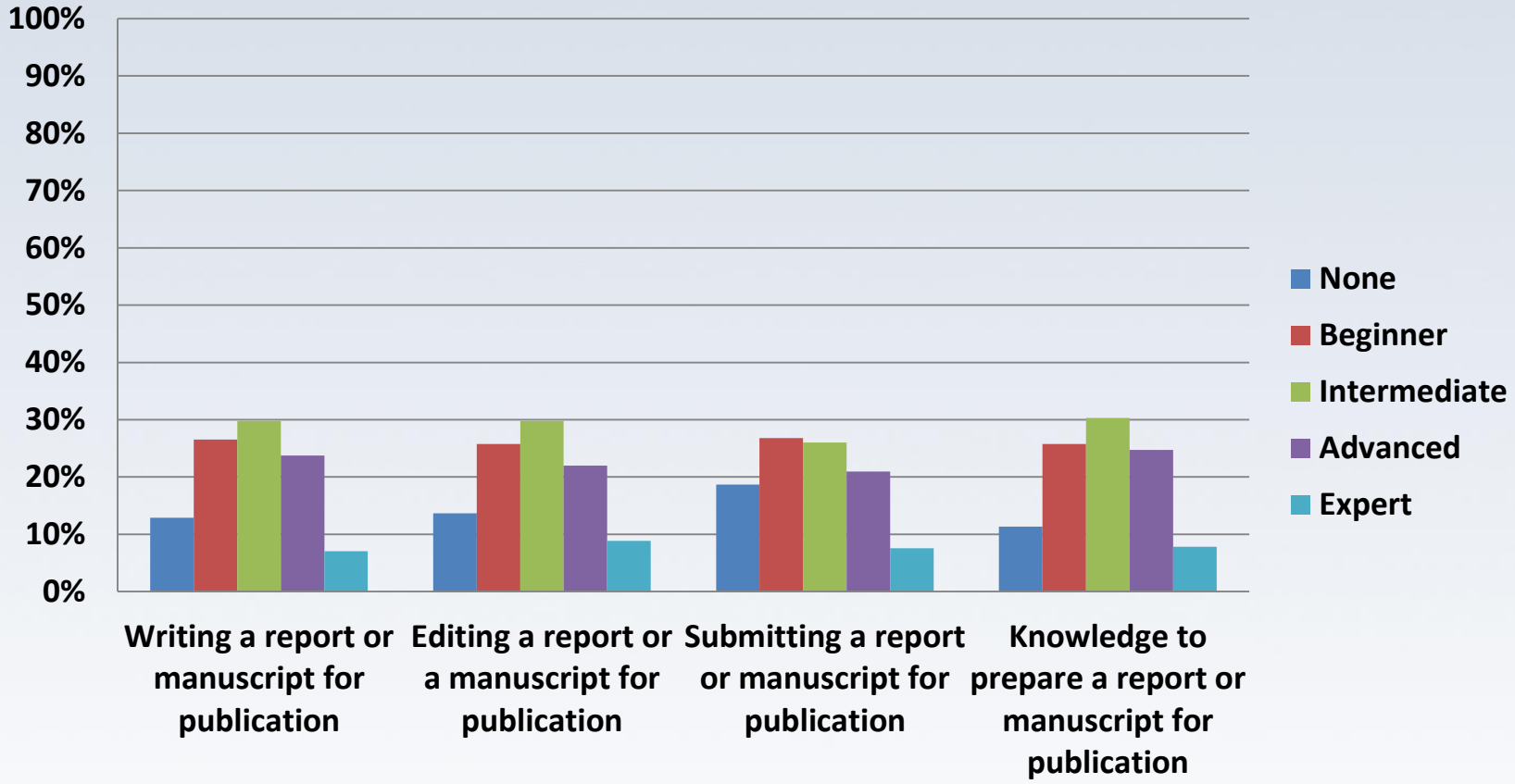
Scientific Writing & Publishing Experience

- Public Use



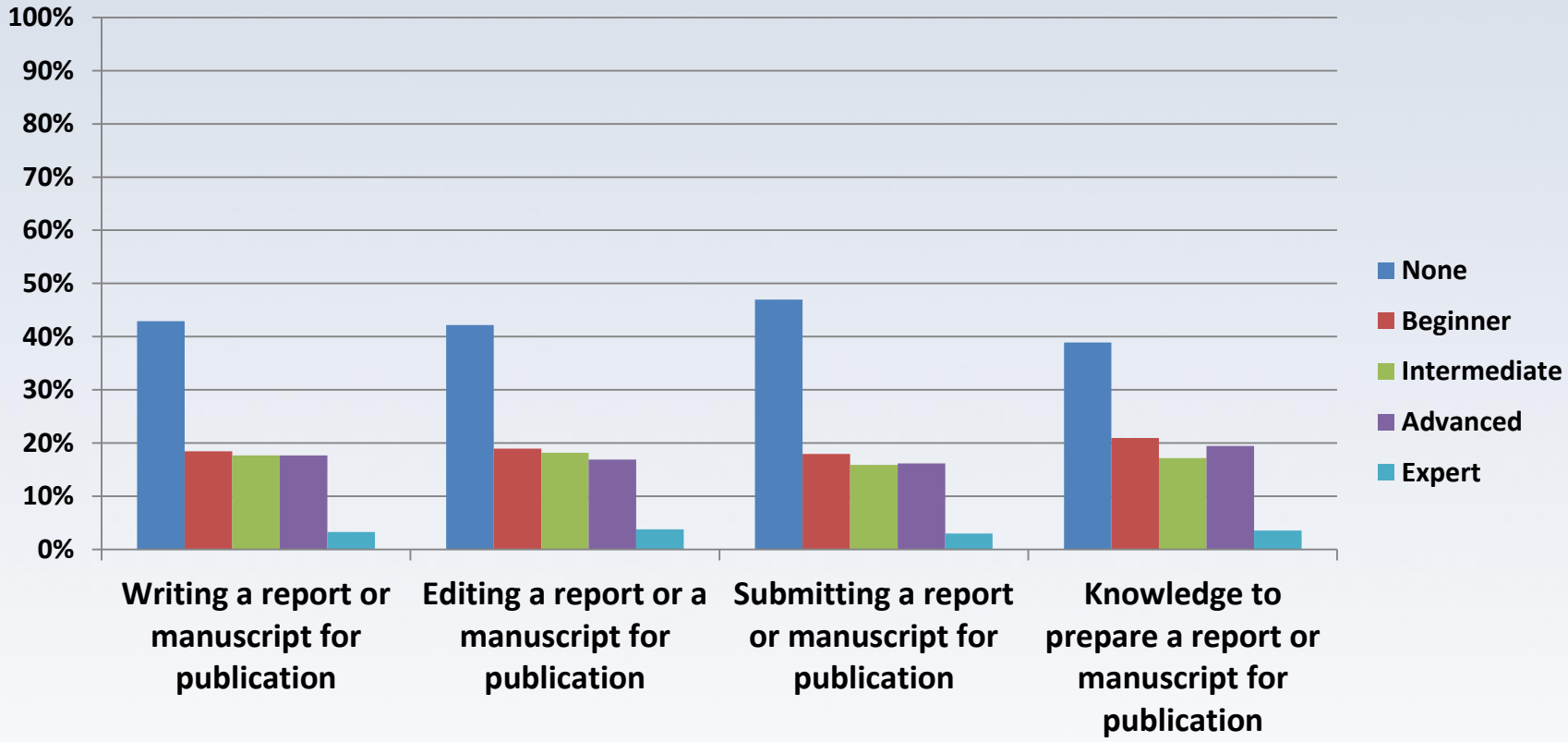
Scientific Writing & Publishing Experience

- Peer-Reviewed Journals



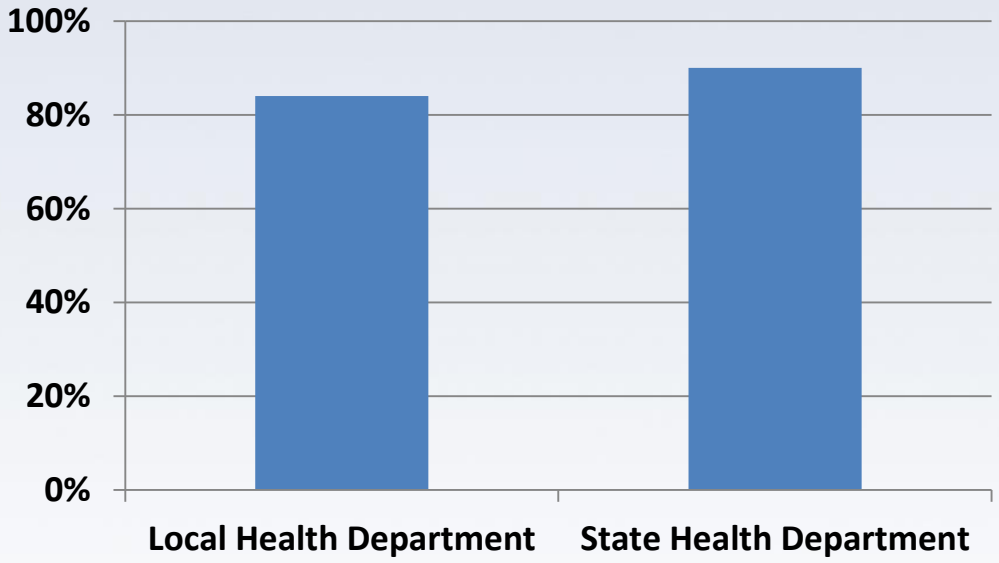
Scientific Writing & Publishing Experience

- CDC Specific-Publications



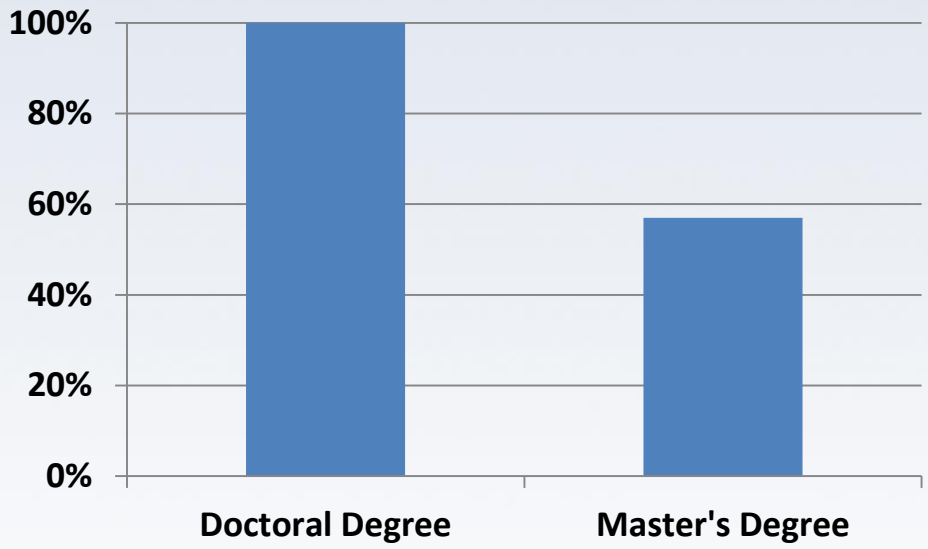
Scientific Writing & Publishing Experience

- Place of Work
  - Fewer respondents from local public health agencies (84%) had previous writing experience compared to state respondents (90%)



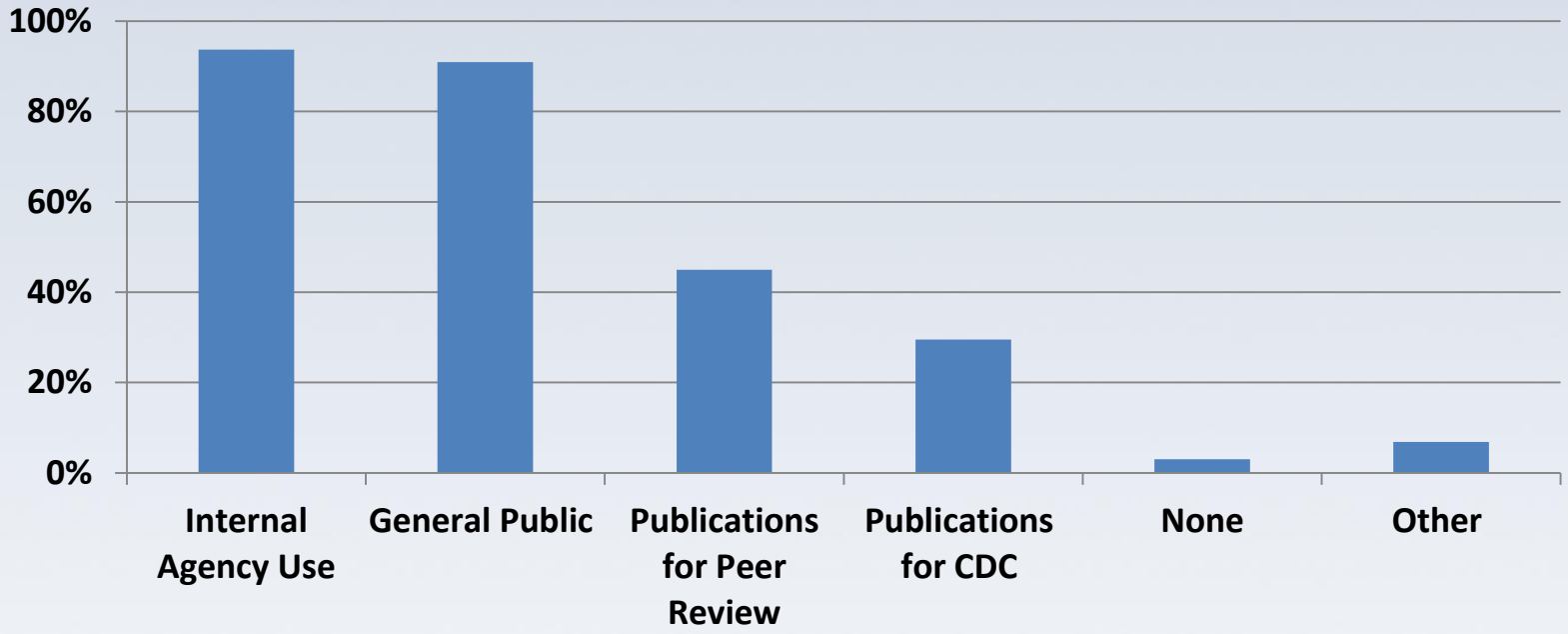
Scientific Writing & Publishing Experience

- Academic Training
  - Publishing was reported more frequently among those with doctoral degrees (100%) compared to those with a master's degree (57%, $p<0.0001$).



Scientific Writing & Publishing Experience

- Place of Work Expectations



- No significant differences between state and local responses

Scientific Writing & Publishing Experience

- Funding Requirements
  - State-level participants more commonly reported ties between writing and/or publishing activities and funding requirements (27%) than local-level participants (15%)
  - Significant difference between state and local responses (p=0.0039)

Barriers to Scientific Writing

Major Barriers

- Time (68% indicated it as either moderate or major barrier)
- Lack of agency encouragement or support (33%)
- Agency clearance or approval process (32%)

Not Barriers

- Lack of previous writing experience (84% indicated not a barrier or minor)
- Knowledge on how to submit a peer reviewed publication (79%)
- Lack of previous publishing experience (73%)
- Cost (65%)

Available Resources

Currently Provided

- Access to peer review literature (56%)
- Dedicated time (28%)
- None (25%)
- Access to editors (21%)
- Training opportunities to improve scientific writing and publishing skills (19%)

Desired

- Dedicated time (65%)
- Training to improve writing and publishing skills (62%)
- Best practice models of supportive writing resources (60%)
- Best practice examples of supportive organizational culture to foster writing and publishing (55%)

Additional Desired Tools & Resources

- Templates for general publications (53%)
- Access to a mentoring network of experienced writers (53%)
- Access to editors (46%)
- Access to technical writers (44%)
- Journal club (40%)
- Access to peer-reviewed literature (37%)

Desired Training

- Identifying the most appropriate journal (62%)
- Technical writing (60%)
- Navigating various formats of peer-reviewed journals (57%)
- Grant writing (46%)
- How to respond to reviewers' comments (43%)
- Editing (40%)
  - Significant difference by agency type (local 29% and state 46%), (p=0.0036)

Desired Toolkit Contents

- Templates for different types of publications
- Reference or citation software
- Formatting guidelines for peer-reviewed journals
- Step-by-step guide to publishing
- List of suggested journals to publish in organized by subject

Facilitators to Scientific Writing

- Supportive organizational culture
- Technical support including access to writers, editors and communication specialists
- Access to peer-reviewed literature
- University partnerships
- Option for electronic publishing

Limitations

- Quota sampling
  - Excluded 151 additional responses
- Geographic information was not collected

Recommendations

Recommendations

- **Empowering Individuals**
  - Additional resources
  - Competency-based training
  - Reward and recognize

Recommendations

- **Organizational Culture**
  - Encourage and support scientific writing in the workplace
  - Explicitly include scientific writing activities in job descriptions
  - Establish peer networks
  - Train the workforce
  - Increase clarity in the internal review process

Recommendations

- **Community Partnerships**
  - Collaborate with local, state and national partners

Conclusion

Questions?

- How will you use this data?
- What have you done at your health department to improve scientific writing capacity?
- What models or lessons learned do you have that you would like to share?
- What do you envision for next steps?
  - Toolkit, trainings, etc.

Thank you

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Extra/Deleted Slides

Results: Scientific Writing & Publishing Experience

- Publishing among those with academic appointments (19% of the sample) was statistically more likely than among applied epidemiologists who did not have an academic appointment.
- One in three respondents had published work in a CDC publication (*Morbidity and Mortality Weekly Report* (MMWR), *Emerging Infectious Diseases* (EID), and *Preventing Chronic Disease* (PCD)).

Table 6. Types of Scientific Writing Expected as Part of Job Duties (N=396)		
	N	**%**
Internal agency use: reports, summaries, program documentation, grant writing	371	93.7
General public (external of agency): reports, summaries, media (websites), plain language documents for the general public	360	90.9
Publications for peer review	178	45.0
Publications for CDC (MMWR, Emerging Infectious Diseases, Preventing Chronic Disease)	117	29.6
None	12	3.0
Other	27	6.8

Scientific Writing & Publishing Experience

- Academic Appointments
  - There were significant differences in the type of writing experience between respondents with an academic appointment and those without