

Healthcare improvement is incomplete until it is published: the cystic fibrosis initiative to support scholarly publication

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ABSTRACT

Objective Preparation of this supplement, *Ten years of improvement innovation in cystic fibrosis care*, tested a strategy to support writing and scholarly publication by cystic fibrosis (CF) healthcare improvement professionals.

Intervention Critical elements of the writing initiative included: a request for abstracts that was distributed to over 2000 professionals in the Cystic Fibrosis Foundation-supported improvement community to identify promising work; continuous peer review of manuscripts by co-authors and writing tutors; three webinars and a 2-day face-to-face writing retreat that addressed the challenges of successful scholarly healthcare improvement writing and publication; and finally, journal submission and formal external peer review. The SQUIRE Publication Guidelines provided content framework for manuscripts.

Results 47 abstracts were submitted from which reviewers selected nine for participation. The 28 co-authors of these abstracts took part in the writing initiative. Authors' self-assessment showed that half had previously published fewer than five papers, while 80% considered themselves insufficiently prepared to write for the scholarly improvement literature. Eventually all of the nine abstracts led to full manuscripts, which were submitted to the journal for formal peer review. Of these, seven were accepted for publication and are included in this supplement.

Conclusions A formal initiative to develop and support scholarly writing—while resource-intensive—offers opportunities for wider publication by healthcare improvement professionals.

OBJECTIVE

The work of healthcare improvement is incomplete until it is published. To this end, the healthcare improvement and

academic communities work together to find effective alignment to benefit patients by wider publication of healthcare improvement innovation.

Many who work in improvement day-to-day—doctors, nurses, pharmacists, quality managers, administrative leaders, and others—encounter challenges to scholarly writing that can easily lead them to abandon the goal of publication. Common practical challenges include finding the time to write effectively, identifying like-minded colleagues with whom to share ideas and draft manuscripts, and ultimately running the gauntlet of editorial standards and critical review. We report a formal 10-month initiative that was crafted to address these challenges among a group of self-identified cystic fibrosis (CF) improvement professionals. The aim was to develop a supportive writing community to advance individual writing skills and thereby provide the opportunity for CF care teams to publish their work in the scholarly healthcare improvement literature.

INTERVENTION

A formal writing initiative

An agreement between the Cystic Fibrosis Foundation (CFF) and editorial leadership of *BMJ Quality and Safety* to publish this supplement was predicated on the commitment by the supplement's organisers to provide a formal process to support manuscript preparation for CF improvement professionals.

Potential authors were recruited by a widely distributed invitation to the CF community to submit an abstract for a proposed paper. Co-authors of abstracts



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selected by a peer review process agreed to participate in a writing collaborative adapted to the IHI Breakthrough Series format.¹

A collaborative to facilitate scholarly writing

The writing collaborative consisted of three 90-min webinars and a 2-day face-to-face writing retreat over the course of a 5-month manuscript preparation period, followed by formal journal submission and a 5-month review and revision period. Writing tutors were recruited from faculty at The Dartmouth Institute for Health Policy and Clinical Practice (TDI), Lebanon, New Hampshire. They reviewed early manuscript drafts and provided formal didactic presentations to the writing retreat.

The collaborative systematically addressed elements of effective scholarly writing (box 1). For example, online sessions introduced specific strategies for when and where to write, effective writing tactics for co-authors, and guidance for taking advantage of continuous peer review throughout the writing and revising processes. A 2-day face-to-face retreat provided co-authors with a setting exclusively devoted to writing and the opportunity to escape routine clinical

and administrative obligations. A quick-paced agenda was devoted to specific sections of papers. Brief didactic presentations were interspersed among participants' writing and faculty reviews. Finally, the mechanics of manuscript submission were addressed—what to expect from journal reviewers, and how to respond and negotiate effectively the formal peer review process.

Application of SQUIRE Publication Guidelines

The Initiative employed the SQUIRE Publication Guidelines as a checklist for content and a systematic work plan for co-author teams.² Specific curriculum topics included: making a paper accessible to readers and critical reviewers; distinguishing between the improvement aim and associated study questions; internal validity of findings and the appropriate application of statistical process control methodology; effective communication of context; and making the most compelling use of the discussion and limitations sections of the paper.

Peer review

Systematic, consistent peer review was a strategic element of the initiative and had its impact in the selection of abstracts, the writing process itself and peer review after formal submission to the journal. All participants recognised that there was no assurance of acceptance after formal journal submission.

RESULTS

A call for abstracts was distributed in February 2013 to over 2000 members of the North American CF community. Forty-seven abstracts were submitted and were reviewed using explicit selection criteria (box 2). Following review, 28 co-authors of nine abstracts were invited to participate in the writing initiative. There were many promising abstracts among the 38 abstracts that were not selected. Principal reasons for rejection were incomplete studies, inappropriate application of

Box 1 Topic content of didactic presentations in three webinars and a 2-day writing retreat for the CF writing collaborative

1. Review and feedback of authors' self-assessments and goals for the initiative
 2. Proposed performance standards for co-authors and peer-reviewers
 3. Strategies to get started and keep going with one's writing
 4. Introduction to SQUIRE Publication Guidelines and their use
 5. Titles and abstracts
 6. Improvement aims and study questions
 7. Context
 8. Validity of findings/statistical process control
 9. Discussion and limitations
 10. Making scholarly writing accessible to intended readers
 11. How to broadcast a message for someone who is unfamiliar with the CF field or healthcare improvement
 12. How to use specific findings to generate new approaches for other healthcare fields
 13. Importing aspects of this writing initiative to a local institution
 14. Navigating the formal journal submission process
 15. Strategic use of the journal review and revision process
- CF, cystic fibrosis.

Box 2 Reviewers' criteria for abstract selection for inclusion in the CFF writing initiative

1. A clear hypothesis
 2. Describes the intervention in sufficient detail that others might reproduce it in different settings
 3. Describes the study design (eg, observational, quasi-experimental, experimental) chosen for measuring the impact of the intervention on outcomes
 4. Reports results that appear valid as well as meaningful to a broad readership
 5. Highlights the implications of the work for patients and/or systems of care
- CFF, Cystic Fibrosis Foundation.

methods and insufficiently validated outcomes. Ultimately, all nine selected abstracts resulted in completed papers, which were submitted to the journal for formal review and revision, and from which seven were accepted for publication.

A second cohort of papers was constituted by seven additional teams of co-authors—generally leaders of CFF-supported national improvement strategies—who were commissioned to review the broader improvement strategies of the CFF-supported improvement community. Many of the latter group participated in the writing collaborative and contributed their expertise as more seasoned writers.

Authors' self-assessment

The survey

Writing experience

Participants completed a self-assessment survey to describe their prior publication experience and to identify personal improvement aims. Half of the participants had previously published fewer than five scholarly papers of which the majority was in the biomedical literature. Eighty per cent of participants considered themselves unprepared to write scholarly improvement reports.

Authors' improvement aims

Over half described learning to write for the scholarly improvement literature as the principal aim of their participation—the understanding of what is different about improvement writing as compared to reporting health services research, or other biomedical research fields. Most wanted to improve their overall writing competency, and many described a need for a more organised approach to scholarly writing. Insufficient time for writing was nearly universal, as was the challenge of initiating the writing process. Finally, sharing early drafts with colleagues for their review was considered daunting for most participants.

COMMENT

Preparation of this supplement, *Ten years of improvement innovation in cystic fibrosis care*, tested a strategy to support wider scholarly publication by healthcare improvement professionals who had not previously published extensively. Nine of 47 peer reviewed abstracts offered sufficient potential for inclusion in the writing collaborative. Of note, many of the 38 abstracts that were not accepted for inclusion offered considerable promise and reflect interest in scholarly publication among the CF improvement community. Nevertheless, writing for scholarly publication is a substantial challenge for busy healthcare improvement professionals and clinicians.

The proportion of submitted manuscripts that was ultimately accepted for publication—seven published papers out of the nine submitted—testifies to the potential for successful scholarly improvement writing

if strategic support is available. Elements of such support included explicit emphasis on improvement-specific editorial expectations—for example, the importance of clear description of context, and validity of outcomes; attention to relevant content described in the SQUIRE Publication Guidelines; the availability of accessible writing tutors; and resources for time and place to write, away from the demands of other professional obligations.

Resource-intensive support for scholarly writing: is it worth the investment?

This initiative demonstrates that support for scholarly publication by a group of self-selected professionals whose work is principally in healthcare improvement and patient care can be productive. However, it requires substantial resources—both personal and institutional. We propose this resource commitment is justified on several grounds. First, effective scholarly writing is an important skill that contributes to refinement of improvement processes—for example, critical measurement of outcomes, demonstration of validity of an improvement strategy and clear insights into context. Moreover, constrained healthcare resources make it imperative that reports of successful improvement innovations be widely disseminated so that others are able to implement successful strategies or, conversely, do not unknowingly duplicate unsuccessful strategies.

Our experience reflects the challenges to adding scholarly writing to the work of improvement professionals. All healthcare professionals find it difficult to make time for writing. A willingness to have one's thinking exposed to others for critical review requires a measure of confidence that is a challenge for every writer—novice and expert alike. And the willingness of colleagues to offer peer review at every stage of writing is an act of generosity that is hard won in an era of multitasking and scarce time.

CONCLUSIONS

A formal initiative to develop writing competence contributed to wider scholarly publication by healthcare improvement professionals. The formal writing process also offered opportunities for critical retrospective analyses of the various overlapping 10-year CF improvement strategies—strategic benchmarking, transparency associated with a patient registry, improvement collaboratives, and integration of patients and families into improvement initiatives. Writing with peers—co-authors and colleagues who strive to improve their own scholarly writing—is itself a powerful improvement tool and merits support.

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