



Tapping into the minds and hearts of the local public health workforce during the COVID-19 pandemic

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Abstract

Setting Ottawa Public Health (OPH) provides public health programming and services in the Ottawa region. At the onset of the COVID-19 pandemic in March 2020, the OPH COVID-19 Case and Contact Management Team was established to help manage the spread of COVID-19 and support individuals who test positive, and their close contacts.

Intervention In order to guide and support the COVID-19 Case and Contact Management Team, the COVID-19 Strategic Support Team implemented an anonymous internal communication tool called the COVID-19 Case Management Forum. Case and Contact Management employees were invited to submit their questions, concerns, and words of encouragement on the forum, and the COVID-19 Strategic Support Team routinely replied to forum submissions via team email.

Outcomes Qualitative analyses of employee forum submissions revealed 6 main themes and 31 unique sub-themes related to questions, concerns, and feelings that arose throughout this pandemic response. Recurrent themes emerged relating to process questions, communication challenges, solution generation, and feelings of frustration. Summative content analyses of the COVID-19 Strategic Support team's replies demonstrated 6 main answer types: explaining procedures, identifying resources, explaining rationales, human resource explanations, sharing employee feedback with relevant parties, and creating practice tools.

Implications The online forum tool was developed and implemented early in the pandemic response to provide key insights into OPH's public health workforce needs and well-being throughout the COVID-19 response. The forum encouraged open dialogue and provided opportunities to establish clarity in a time of rapid situational change.

Résumé

Contexte Santé publique Ottawa (SPO) offre des programmes et services de soins de santé publique dans la région d'Ottawa. Dès le début de la pandémie de COVID-19 en mars 2020, l'équipe chargée de la gestion des cas et des contacts de la COVID-19 de SPO a été créée pour faciliter la gestion de la propagation de la COVID-19 et soutenir les personnes qui ont obtenu un test positif.

Intervention Afin de guider et de soutenir l'équipe de gestion des cas et des contacts de la COVID-19, l'équipe de soutien stratégique en gestion de la COVID-19 a mis en place un forum de communication interne anonyme appelé Forum de gestion des cas de la COVID-19. Les employés de la gestion des cas et des contacts ont été invités à soumettre leurs questions, préoccupations et mots d'encouragement sur le forum, et l'équipe de soutien stratégique en gestion de la COVID-19 a régulièrement répondu aux commentaires du forum par courrier électronique.

Résultats Les analyses qualitatives des commentaires du forum envoyés par les employés ont révélé 6 thèmes principaux et 31 sous-thèmes liés aux questions, aux préoccupations et aux sentiments qui ont surgi tout au long de la lutte contre la pandémie. Les thèmes récurrents se rapportent aux questions de processus, aux défis liés à la communication, à la recherche de solutions et aux sentiments de frustration. Les analyses de contenu sommatives des réponses de l'équipe de soutien stratégique en gestion de la COVID-19 ont révélé 6 principaux types de réponses : expliquer les procédures, identifier les ressources, expliquer les justifications, expliquer les ressources humaines, partager les commentaires des employés avec les parties concernées et créer des outils pratiques.

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Implications L’outil de forum en ligne a été élaboré et mis en oeuvre au début de l’intervention face à la pandémie pour fournir des informations clés sur les besoins et le bien-être du personnel de SPO tout au long de la lutte contre la COVID-19. Le forum encourageait un dialogue ouvert et a permis d’apporter plusieurs précisions dans un milieu en évolution constante et rapide.

Keywords COVID-19 · Pandemic preparedness · Organizational behaviour · Public health workforce · Communication · Case management

Mots-clés COVID-19 · préparation à une pandémie · comportement organisationnel · personnel de santé publique · communication · gestion des cas

Background

In March 2020, the province of Ontario and City of Ottawa declared a state of emergency due to the COVID-19 pandemic (COVID-19: A timeline of Canada’s first-wave response | CMAJ News, [n.d.](#); Dept, [2020](#)). Following these orders, Ottawa Public Health (OPH) launched into emergency operations and underwent rapid organizational change to meet local health demands. Specifically, the COVID-19 Case and Contact Management Team at OPH has taken a leading role in the pandemic response by conducting contact tracing and supporting individuals who tested positive for COVID-19 throughout their isolation periods. The team’s responsibilities include investigating confirmed cases of COVID-19 by verifying lab results, collecting relevant data, identifying exposures, as well as monitoring and supporting contacts through their isolation periods. Unlike treatment-centric care in traditional hospital and clinic environments, the COVID-19 Case and Contact Management Team are focused on pandemic prevention and management and conduct all correspondence with clients via phone and email. The team is supported by the COVID-19 Strategic Support Team—a leadership team comprised of advanced practice nurses with extensive experience in public health nursing, infectious diseases, operational planning, and project management.

The COVID-19 Case and Contact Management Team fulfills a crucial function in local pandemic management, as contact tracing is known to be a critical step in containing the spread of the SARS-CoV-2 virus and is especially important given the virus’ ability to transmit in asymptomatic and pre-symptomatic individuals (Juneau et al., [2020](#)). The COVID-19 Case and Contact Management Team at OPH follows a “test, trace and isolate” approach where confirmed and probable cases are identified, monitored, and supported in their self-isolation (Ontario Ministry of Health, [n.d.](#)).

The OPH COVID-19 Case and Contact Management Team faced unprecedented challenges as the pandemic developed in Ottawa. The team adapted from managing 9 reported COVID-19 cases during the week of March 22, 2020, to a high of 2179 reported cases during the week of April 11, 2021 (Open Ottawa, [n.d.](#)). Driven by significant surges in COVID-19 cases, the OPH COVID-19 Case and Contact

Management Team underwent several operational practice changes in order to address substantial backlogs and maximize existing resources. Given the immediate need for surge support staffing, the COVID-19 Case and Contact Management Team is comprised of a diverse workforce with varying experience levels and backgrounds. Professionals from differing health care domains were recruited to join the team, including nurses, medical students, and allied health professionals. Additional challenges the team faced included shifting database systems and changing guidance in a time of evolving scientific evidence.

Intervention

In an effort to provide consistent and comprehensive support and communication with OPH’s COVID-19 Case and Contact Management employees throughout the pandemic response, the leadership-led COVID-19 Strategic Support Team implemented an anonymous online tool called the COVID-19 Case Management Forum where employees can share their questions, feedback, and concerns. The forum was created using existing organizational survey resources and employees are routinely encouraged to contribute to the forum using a secure link. The forum includes three prompts: (1) “please enter any questions or clarifications you need here”, (2) “please enter any concerns/ comments/ suggestions you have here”, (3) “if you would like to share some positive thoughts or words of encouragement with the COVID team, please enter here”. The COVID-19 Strategic Support Team routinely assesses the forum for new submissions and replies to specific questions raised via team email.

Literature review

In order to better inform this qualitative assessment, a systematic literature review was performed to appraise related research findings. A priori inclusion criteria were set in advance of the literature search and the SPIDER (Sample, Phenomenon of interest, Design, Evaluation, Research type) framework was used to guide search terminology (Cooke

et al., 2012). Moreover, the Critical Appraisal Skills Programme (CASP) approach was used to evaluate the quality of the literature (CASP Qualitative Research Checklist, n.d.; CASP Systematic Review Checklist, n.d.). A detailed description of the search methodology and review process is shown

in Fig. 1 (adapted from HealthEvidence and Peel Region Public Health) (Health Evidence, 2009).

Within the reviewed literature, front-line health care workers consistently expressed feelings of stress and uncertainty in pandemic or emergency situations (Kunzler et al., 2021). Key drivers of these stressors were unclear

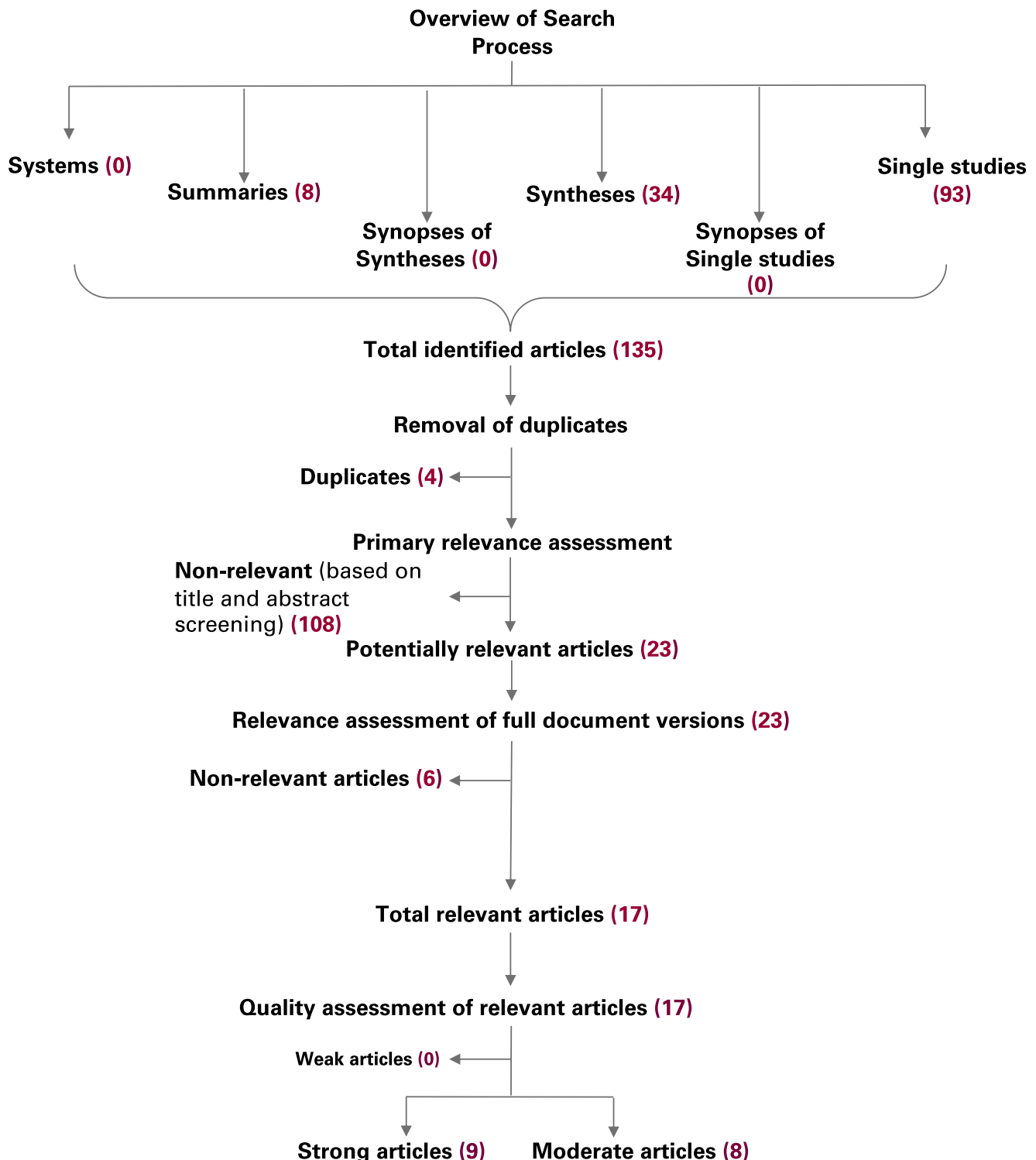


Fig. 1 Adapted HealthEvidence flowchart displaying the literature review search process (Health Evidence, 2009)

communication, high workloads, suboptimal work conditions, and poor leadership (Barello et al., 2020). Effective interventions aimed at reducing burnout in public health workers often involved improved training and access to information, psychological coping strategies, clear communication, adequate staffing, employee recognition, and the opportunity to contribute feedback (Cabarkapa et al., 2020; Chew et al., 2020; Turner et al., 2021).

Literature review findings revealed a lack of research exploring employee needs and operational support tools throughout the COVID-19 pandemic response (Norton et al., 2021). Moreover, OPH's COVID-19 Case Management Forum appears to be a unique intervention among the literature.

Methods—qualitative analyses

An assessment of the COVID-19 Case Management Forum was conducted through a qualitative mixed methods approach. This approach included an inductive coding analysis of COVID-19 Case and Contact Management employee-generated forum responses and a summative content analysis of the COVID-19 Strategic Support Team's answers and practice changes based on the questions and concerns raised in the forum.

Inductive coding is a flexible and open-ended approach which allows themes to emerge from collected data (Tolley, 2016). On the other hand, summative content analyses are better suited to answering specific research questions or objectives (Hsieh & Shannon, 2005). Thus, both these qualitative methodologies were chosen given differing aims. The objective of analyzing forum submissions by the COVID-19 Case and Contact Management Team was to generally explore themes that emerged in the text. The purpose of analyzing the COVID-19 Strategic Support Team's emails was to more specifically consider the guidance and follow-up actions that were generated from the COVID-19 Case Management Forum.

Forum responses

First, qualitative analyses of forum responses were performed using an open coding or inductive coding approach (Leedy & Ormrod, 2005). A total of 233 forum responses were collected between March 27, 2020 and May 5, 2021. These responses were first reviewed for representative themes, and later condensed into major themes and sub-themes. Analyses were first conducted by the primary reviewer who then discussed and presented preliminary findings with other research collaborators. Inductive coding analyses followed an iterative process where responses were re-categorized according to different terminology and the research group's collective interpretation of the concepts presented in the text.

Forum-generated actions and guidance

Next, a summative content analysis (Hsieh & Shannon, 2005) was completed to assess the types of answers and actions provided by the OPH COVID-19 Strategic Support Team in response to the forum submissions. This involved analyzing all team emails that were distributed by the OPH COVID-19 Strategic Support Team between March 27, 2020 and May 20, 2021. In total, 13 emails contained 68 unique answers responding to various questions that arose in the online forum. The summative content analysis involved classifying each answer into a category and considering the frequency and context in which these answers were provided. Much like the inductive coding analyses, the primary reviewer first identified preliminary categories in the summative content analysis and further refined these categories with the other research team members.

Outcomes

Inductive coding—forum submissions

In total, 233 submissions were analyzed. Almost half of the submissions (112) were responses to prompt 1, while 79 were related to prompt 2 and 42 were related to prompt 3. Qualitative analyses of forum responses resulted in 6 main themes and 31 unique sub-themes. Many sub-themes were shared between forum prompts 1 and 2, while prompt 3 produced entirely distinct themes.

Figure 2 offers a visual interpretation of these qualitative findings by colour and arranges each sub-theme within a coloured circle according to the forum prompt posed. Much like a Venn diagram, overlapping areas of the circles demonstrate where each prompt produced shared sub-themes, and non-overlapping areas demonstrate situations where unique themes emerged from the prompt posed. Sub-themes are arranged below the umbrella concept or major theme they belong to.

Prompt 1 (questions) elicited numerous inquiries, especially those related to internal processes and requests for rationales. For instance, questions were asked to clarify daily procedures and seek guidance on specific client situations. Examples of questions concerning requests for rationales include inquiries regarding why certain directives were given to clients or why particular screening questions were asked, and requests for the reasoning behind specific classification systems. Concerns expressed in prompt 1 were predominately related to inefficient processes and communication challenges. Employees identified areas needing improvements and often potential solutions were proposed alongside these concerns.

In general, fewer questions and more apprehensions were expressed in prompt 2 (concerns) than in prompt 1. Frequently

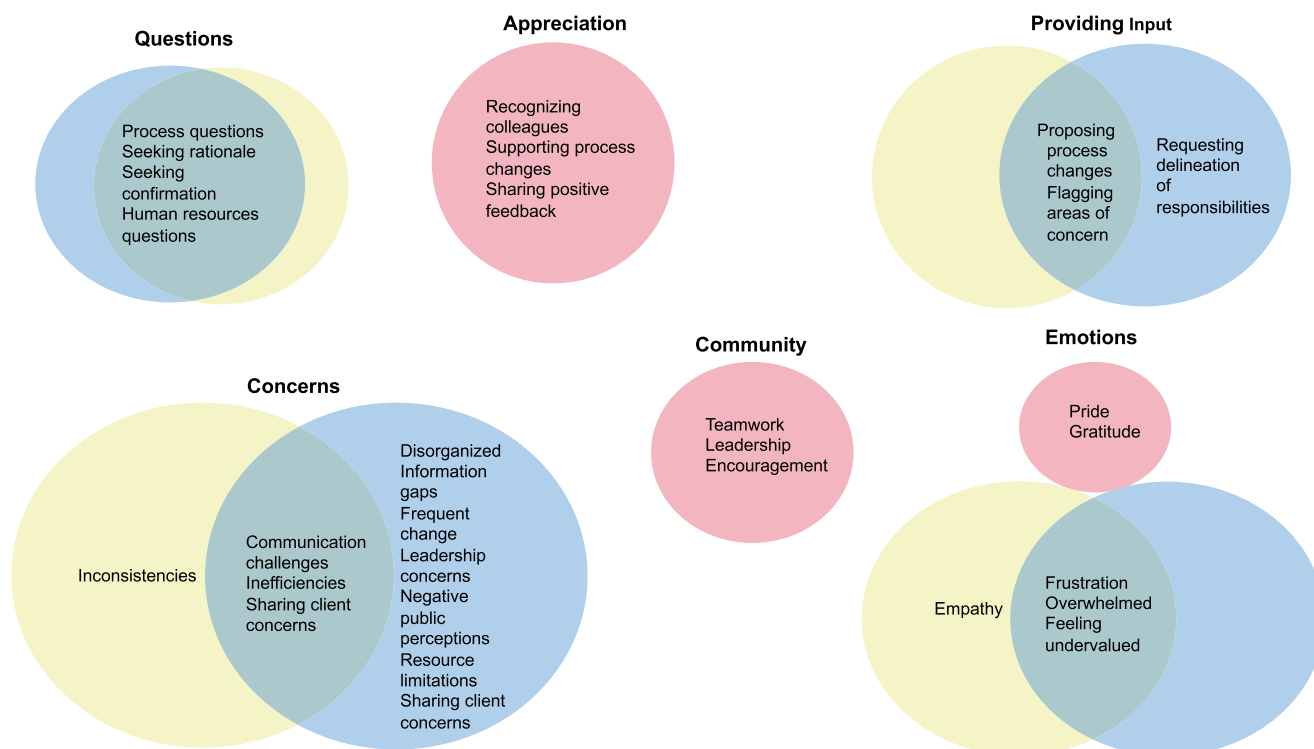


Fig. 2 Unique and overlapping themes and sub-themes generated from qualitative analyses. Colour coded by forum prompt: prompt 1 (yellow), prompt 2 (blue), and prompt 3 (red)

reported concerns were related to inconsistent directives and specific procedural issues, and client concerns were often shared. Prompt 2 generated an abundance of employee feedback related to process changes and document improvement, and several requests were made to better define employees' roles and responsibilities. Last, prompt 2 captured many stressful emotions that employees were grappling with, especially those related to feeling overwhelmed due to workload demands and feeling that one's contributions and perspectives were undervalued. Employees also shared that they felt burnt-out, isolated, and emotionally drained after dealing with many tragic and complicated cases.

Prompt 3 (positive thoughts) is markedly different from prompts 1 and 2, allowing employees to share words of encouragement and positivity with the team. Responses to this prompt exhibited themes of appreciation; employees were recognized for their hard work and contributions, and positive feedback was shared regarding process enhancements. Another major theme that was apparent in prompt 3 was a sense of community. Employees shared encouraging words, relayed a sense of teamwork and comradery, and recognized the leadership team for their guidance and support.

Summative content analysis—forum-generated answers and actions

Six main types of answers emerged from the summative content analysis: explaining procedures, identifying resources,

explaining rationales, human resource explanations, sharing employee feedback with relevant stakeholders, and creating practice tools. Figure 3 demonstrates the frequency of each of the 6 established answer categories among a total of 68 responses provided by the COVID-19 Strategic Support Team.

The most frequent replies included procedural explanations, directing employees to existing tools and resources, explaining the rationale for establishing specific processes, and human resources explanations. Of the procedural explanations, many were related to navigating database systems, client-follow up, COVID-19 isolation management, as well as testing and symptom guidance. For instance, as the pandemic evolved, many explanations were provided regarding recently changed isolation procedures and symptom identification criteria. Additionally, explanations were provided regarding data management processes and how best to store and access case-specific data. Many of the COVID-19 Strategic Support Team's answers involved connecting staff with existing resources such as webpages, references documents, practice tools, links from external partner organizations, and identifying internal colleagues who could assist with specific requests. Practice tools often consisted of how-to guides and example templates for internal procedures, while recommended webpages directed employees to more general guidance resources for COVID-19 case management. Insight was also provided into the reasoning behind existing procedures by sharing information about rapid onboarding challenges, database limitations, and compliance with provincial and federal

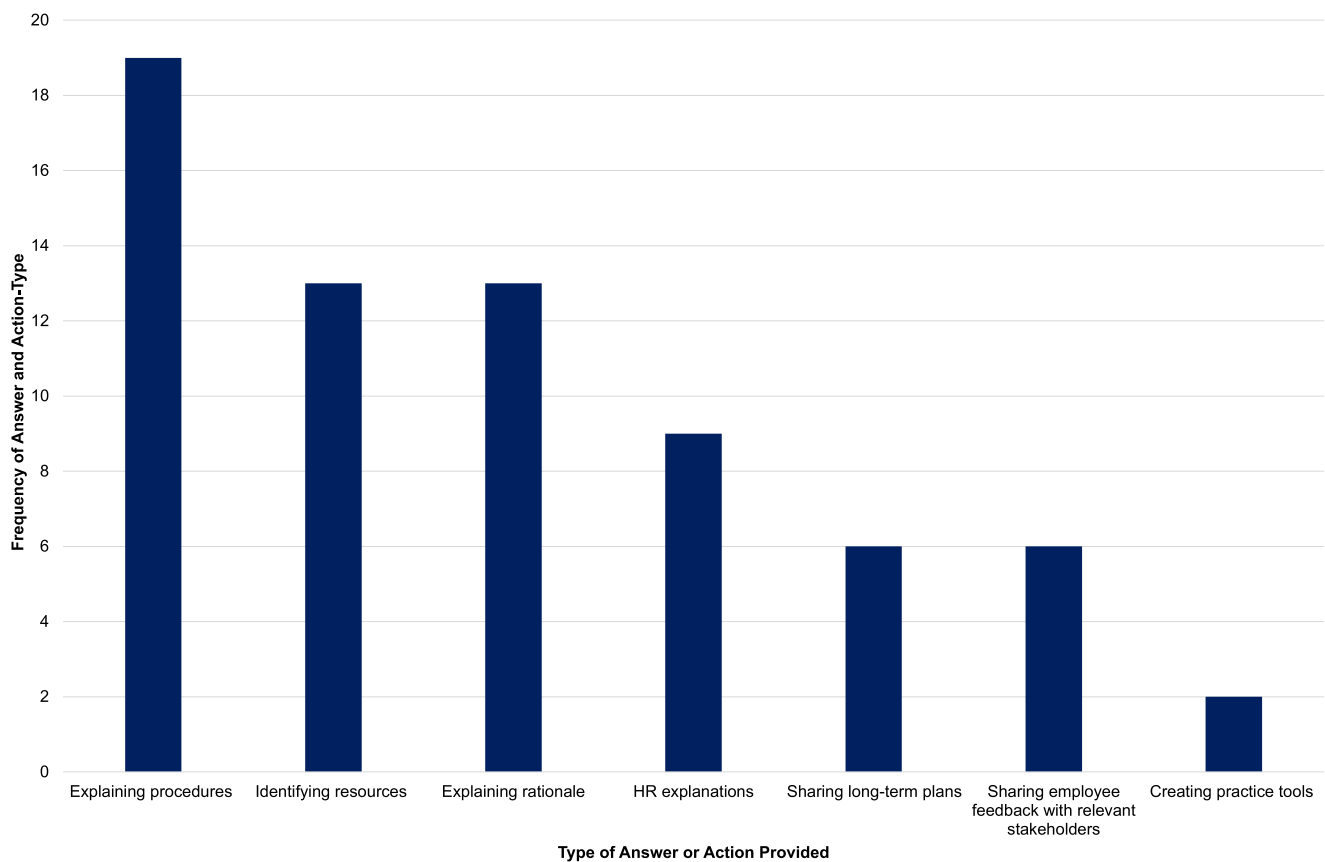


Fig. 3 Answers and actions generated by the COVID-19 Strategic Support Team in response to COVID-19 Case and Contact Management employees' online forum submissions

guidance among others. These explanations provided employees with additional context into various organizational concerns such as scheduling challenges, client confidentiality protocols, and the reasoning for establishing specific operating procedures. Human resources explanations focused on clarifying remuneration processes, explaining logistics requests, discussing scheduling procedures, providing insight into remote work complexities, and answering questions about job opportunities and advancements.

Implications

The COVID-19 pandemic led to immense operational challenges at OPH, but also highlighted opportunities to strengthen the existing support structures within the organization. The COVID-19 Case Management Forum was an innovation developed to collect employee insights, enhance employee supports, and promote opportunities for dialogue. The implications of the forum were multi-fold: specific professional development opportunities and job aids were created as a direct result of employee-generated forum submissions. The forum additionally resulted in more general organizational-level benefits such as promoting digital technologies and fostering an inclusive community of practice among the workforce.

The forum allowed the COVID-19 Strategic Support Team to identify employee needs and respond with targeted job aids and professional development opportunities. For instance, subject matter experts from within Ottawa Public Health were invited to present on specific topics such as risk assessments, variants of concern, cluster and outbreak management protocols, handling personal health information, COVID-19 school support procedures, and lab result interpretation. Moreover, e-learning trainings were made available to the COVID-19 Case and Contact Management Team to bolster employees' understanding of infection prevention and control and crisis intervention procedures. Job aids were developed to clarify processes related to documentation, database navigation, referral processes, and the transition to a new database system. Additionally, the COVID-19 Case and Contact Management Team manual, which captures all key operating procedures, was routinely updated based on questions and process gaps that arose in the forum.

Digital solutions such as an online forum are flexible, are affordable, and can be rapidly implemented during public health emergency responses. The COVID-19 Case Management Forum was developed early in the pandemic response to provide key opportunities for communication with a remote and rapidly upscaled public health workforce. The forum facilitated the collection of questions and concerns

related to ongoing processes, and sparked discussions related to employee-driven topics. Pandemics call for immediate implementation of tools that can support employee success and well-being (Cabarkapa et al., 2020). Meanwhile, the public health sector is increasingly recognizing the important role that digital technology plays in pandemic preparedness and planning (Budd et al., 2020). Online tools can assist in supporting employees and organizations through rapid change and provide needed clarity and guidance throughout intense pandemic response periods (Cariaso-Sugay et al., 2021).

Moreover, the online forum tool helped to support employees and build community in a time when OPH colleagues were largely unable to work together in person. The COVID-19 Case Management Forum aligns itself with an increasingly popularized social learning theory in the health care sector called “Community of Practice” (CoP) (Li et al., 2009). CoP refers to a type of information exchange forum where novices and experts share knowledge, encourage learning, and foster a sense of belonging (Jadotte & Lane, 2021). Interventions that utilize concepts from CoP learning theory may improve group functioning by helping to build relationships among colleagues and promote knowledge exchange (Li et al., 2009).

The forum encouraged open communication channels within the Case and Contact Management Team by providing opportunities for employees to ask for supports and information. The forum also provided insight into the feelings and well-being of employees throughout the pandemic, allowing for honest sharing regarding pandemic-driven stressors and demands. A question-and-answer format permits leadership to build capacity around specific procedures and provides insight into the unique challenges and questions that employees are encountering. The forum also allows employees to engage in solution generation, often proposing helpful solutions that were later addressed or adopted in practice. Employee feedback collected in the COVID-19 Case Management Forum was used to inform performance management initiatives, modify existing procedures, and drive professional development activities. All of these features build on CoP principles and aim to encourage learning, open dialogue, and collaboration (Li et al., 2009).

Implications for policy and practice

What are the innovations in this policy or program?

- There remains a paucity of literature regarding training and supports for public health employees working in pandemic response contexts. This qualitative assessment details the implementation and findings associated with an online employee communication forum utilized at a local public health unit.

- The forum findings contribute to pandemic preparedness and planning considerations. The forum is easily implemented in remote-work emergency response situations and provides valuable learning opportunities and communication channels for employees and organizations alike.
- Given the organizational challenges associated with the COVID-19 pandemic, the forum was a novel and innovative solution to support and address the needs of the OPH public health workforce.

What are the burning research questions for this innovation?

- Can the forum model successfully support employees working in other public health emergency responses or at other local public health units?
- What factors facilitated employee utilization of the forum and what factors prevented employees from contributing to the forum?
- Would comprehensive outcome evaluations confirm initial findings that the forum model supported public health practice and employee engagement?

Code availability Not applicable.

Data availability Not applicable.

Declarations

Ethics approval Not applicable.

Consent to participate Not applicable.

Consent for publication Not applicable.

Conflict of interest The authors declare no competing interests.

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