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Identifying, communicating, and de-escalating risk in high-stakes settings: How conversation analysis research can underpin communication training

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ABSTRACT

Objective: Communicating risk in high-stakes settings can prevent avoidable deaths. Communicating, assessing and managing risk is a critical part of many healthcare and related professionals' roles. However, there is a dearth of empirical research on risk communication in practice. Training is seldom based on empirical evidence, meaning professionals communicating in some of the most urgent circumstances may have little formal knowledge of how to communicate about risk in practice. Focusing on high-stakes settings, we describe three projects involving work with diverse professionals to improve how they communicate to identify, mitigate, and manage risk. We integrate insights for others considering similar projects.

Methods: We present three projects where communication training about current or future threat to life in high-stakes settings was developed based on conversation analysis (CA) and its findings. Projects focused on (1) communicating the risks of emergency medical evacuation during infectious disease outbreaks (2) risk communication about suicidality and self-harm (3) crisis negotiation in the context of suicide threats

Results: In each project, researchers collaborated with practitioners to understand communication about risk moment-by-moment. They used CA to identify key challenges and develop empirical evidence of (in)effective communication practices. The evidence was used to develop resources for practitioner training. Integrated insights showed that: training is well received, core risk communication practices were often absent from extant training; collaboration with partners is crucial; and resources/funding constraints limited formal evaluation.

Conclusion: Conversation analytic research can generate insights on how risk is assessed and managed moment-by-moment in practice. These insights can underpin training based on evidence from real communication.

Practice implications: Developing training from empirical CA can equip professionals working in urgent and high-stakes circumstances to meet and address challenges in practice. Future work is likely to include systematic evaluation of the impact on interactions and patient outcomes.

1. Introduction

Effective risk communication can be lifesaving and is a crucial tool in "high-stakes" [1] and emergency settings [2]. It is therefore critical to ensure professionals are well-informed and well-trained in risk communication in practice. Risk is "the probability that a hazard will give rise to harm" [3], and the purpose of risk communication is to "enable people at risk to make informed decisions to mitigate the effects of a threat (hazard) …and take protective and preventive measures" [4]. Risk communication can occur in a range of ways, including verbally or through public health campaigns. Unlike much of the clinical literature on risk communication, which focuses on discussing risks, benefits, and informed decision-making, here we focus on high-stakes risk communication in conversations between healthcare and related professionals and the people they are supporting. These cases differ from traditional risk discussions by emphasizing moment-by-moment interactional

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strategies for managing 'high stakes' situations, referring to "the matters being dealt with by interacting parties, which involve threat to life, to social order or, potentially, death." [1]

Considerable information and advice are available for professionals who must assess and communicate risk in conversation. This advice, however, largely comprises macro-level communicative actions (e.g., "Encourage individuals to prepare [5]" "Repeatedly draw patients' attention to the time interval over which a risk occurs [6]"; "Offer positive and negative outcomes [3]") without providing detail about how these can be achieved in practice or evidence that these generalized recommendations are effective. This is problematic because how advice and information are communicated in practice can have significant effects on outcomes. For example, in a 2007 study of risk communication identical benefits of a screening test were described to patients but verbally presented in different ways. This resulted in different levels of screening uptake [7].

Despite clear recognition of the importance of communicating risk, a 2012 review identified a lack of consensus about the most appropriate methods for doing this [8]. This review also included relatively few examples from research on how risk can best be communicated in interactions, and no empirical examples of risk communication in urgent or high-stakes contexts. Systematic reviews which do focus on high-stakes contexts, such as suicide risk management or preparedness for emergency patient evacuation similarly foreground evidence of macro-level communicative actions (e.g. 'collaborative care [9]' and 'non-judgemental communication [9]') or of 'healthcare staff-patient communication' in general [10], rather than actual communication practice.

This lack of research limits the empirical evidence-base to underpin high-stakes risk communication training. Therefore, professionals working in urgent and high-stakes settings will seldom be able to access training and advice based on evidence of the specific communication challenges they may actually face, and how to address or overcome these successfully. How can communication training adequately prepare professionals to effectively engage in high-stakes conversations when so little is known?

Conversation analysis (CA) offers a method both to address the current lack of research and evidence-based risk communication training in high-stakes settings. CA is an empirical approach to the study of real interactions [11]. It focusses on the linguistic (e.g. word choice, grammatical structures), paralinguistic (e.g., pitch, intonation, timing, pacing), embodied (e.g., gaze, gesture), and structural (e.g., turn-taking) components of social interaction and the organization of sequences of action that they build. Analysts track how interaction unfolds and identify (in)effective practices.

The field of 'applied conversation analysis [12]' refers to the application of CA to understand talk in an institutional context, and then suggesting improvements based on results. Results can be used with non-academic beneficiaries as sets of communication strategies which are best used or avoided. CA is, therefore, a highly practical tool for developing evidence-based communication training.

There are a range of methods conversation analysts use to translate results from CA into training, including the Conversation Analytic Role-play Method [13]; Conversation Analysis based simulation (CABS) [14]; RealTalk [15]; as well as less formalised pragmatic approaches. All methods involve grounding training in CA evidence of real communication in an organization, or institutional context. Training grounded in CA has been shown to produce increased knowledge and confidence communicating [14], improved interactional awareness [16], and is also associated with changes in communication practices following training [17,18] and improved relationships between patients and professionals [18].

A distinctive feature of CA research, and resulting training, is that the practices that comprise training are derived from the expertise of practitioners themselves. That is, they do not come from models or theories but from the empirical identification and description of what experienced practitioners actually do that works, but which are seldom if ever embedded in institutional or organizational training, guidance, or policy, in ways that can be shared.

Thus, in this paper we ask how do conversation analysts researching risk in high-stakes settings initiate their research and transform results into communication training? We present three projects in the context of communicating and de-escalating risk in high-stakes settings regarding current or near-future threat to life. We aim to articulate our experiences of research-to-impact pathways, and identify cross-cutting insights relevant for conversation analysts seeking to undertake similar work.

2. Materials and methods

We present three project pathways from empirical CA research to training delivery in the context of (1) communicating the risks of emergency medical evacuation, aimed at saving lives during outbreaks of infectious disease (2) risk communication about suicidality and self-harm, and (3) crisis negotiation in the context of suicide threats. We identify relevant insights from across these projects.

3. Results

United in their focus on risk communication in high-stakes settings, we start with a typical example of risk communication (clinicians communicating risk of serious illness, and associated mitigations), and progress to less typical (communication in situations of immediate risk with suicidal persons in crisis). Our projects also progress in risk proximity; from communicating distal risk to proximal acute risk. In all projects we: (1) Engaged with practitioners to understand context and contingencies and develop project plans; (2) Undertook CA to identify key challenges when communicating risk, surfacing empirical evidence of (in)effective communication practices; and (3) used this evidence to develop resources and deliver training for practitioners. Overview of projects, Table 1. We showcase key insights, how training was delivered, and highlight contrasting and cross-cutting elements.

3.1. Communicating the risks of becoming seriously unwell with COVID-19 and requiring aerial medical evacuation

Project one focusses on communicating the risks of becoming seriously unwell in future weeks or months, and requiring emergency medical evacuation. This context of distal risk is typical of much risk communication for clinical, and related, professions.

3.1.1. Context

The UK Foreign Commonwealth and Development Office (FCDO) has a contracted healthcare provider to manage and oversee the medical care of travelling and expatriate UK government staff, and their dependants, across 280 embassies and high commissions worldwide. During the COVID-19 pandemic it was the role of clinicians in this service to inform government staff and their dependants of the risks of becoming seriously unwell with COVID-19 and requiring aerial medical evacuation (evacuation in a specialised air ambulance) back to the UK. It was also the role of clinicians to communicate ways to mitigate this risk. These conversations were complex and high-stakes involving communicating: individual risk of serious illness; isolation procedures, aerial medical evacuation, and repatriation plans; and contingencies should aerial medical evacuation not be possible.

The UK Foreign Commonwealth and Development Office (FCDO) in-house medical team was interested in supporting their contractor clinicians to carry out these conversations as efficiently and effectively as possible. Aware that CA was a highly relevant method, Patel, Chief Medical Officer for the UK FCDO, contacted Albury and commissioned her to partner with them to analyse these risk communication conversations and develop training from the results. Patel's team felt that CA would provide an evidenced and objective understanding of the

Table 1
Overview of projects.

	Project 1	Project 2	Project 3
Risk context	Communicating the risks of becoming seriously unwell with COVID−19 in the future and requiring emergency medical evacuation	Communicating about self-harm and suicidality in the context of suicide risk assessment in mental health care	Communicating in situations of immediate risk with suicidal persons in crisis.
Organisation	The UK Foreign Commonwealth and Development Office (FCDO)	UK NHS Hospital Emergency Department	The UK Hostage and Crisis Negotiation Unit (HCNU), Metropolitan Police Police Scotland
Research Aim	To identify how clinicians communicate the risks of becoming seriously unwell with COVID−19 and requiring aerial medical evacuation	To analyse how clinicians ask about suicidal ideation and/or self-harm in the Emergency Department and how patients respond	To identify the interactional foundations of safe outcomes in negotiations with suicidal persons in crisis
Data	20 recorded phone calls between UK-based contractor clinicians and British Government staff and dependants	153 questions and responses about suicidality and self-harm in the context of risk assessment	14 live audio-recorded negotiations, totalling 31 h, ranging between one and four hours in duration.
Data collection dates	September 2020 to July 2021	(1) June 2001-June 2002; March 2006-January 2008; September 2011-October 2012 [21] (2) 2014 and 2015 [46] (3) September 2018 and April 2019[47]	March 2014-May 2015
Ethical Approval References	The Central University Research Ethics Committee (CUREC), University of Oxford. CUREC Reference: R75138/RE001	(1) Lewisham research ethics committee; Plymouth and Cornwall NHS ethics committee (07/Q2103/96); East London and the City Health Authority REC (P/99/208) (P/02/254), Southampton and Southwest Hampshire Research Ethics Committee [Ref 05/Q1702/94], East London REC 1 [Ref 10/H0703/12] (2) Lewisham research ethics committee (3) London Central Research Ethics Committee (17/LO/1234)	Hostage and crisis negotiation unit research governance processes and Loughborough University Ethics Approval (Human Participants Sub-Committee) and Metropolitan Police Data Processing Agreement.

challenges during these difficult conversations and provide bespoke solutions, taking into account the unusual nature of the interactions.

3.1.2. Aim

To analyse phone calls conducted during the COVID-19 pandemic to identify how clinicians communicated the risks of becoming seriously unwell with COVID-19 and requiring aerial medical evacuation.

3.1.3. Research

The research and training development was grounded in a strong collaborative relationship between the FCDO medical team, the contractor clinicians, and Albury's research team. The contracted healthcare service comprised clinicians engaged in carrying out these calls; managers, and senior members of the clinical team, bringing a range of experience skills and perspectives. The research team regularly presented findings to the FCDO medical team, who provided feedback and experiential insights.

Results of close moment-by-moment analysis of real talk highlighted a range of common problems (and solutions) that were not part of current training. This included, for example how to explain the details of the 'patient isolations units' (which patients are placed in for travel) in ways that supported displays of understanding. Further details included in the results paper [19].

3.1.4. Training development and delivery

The FCDO medical team and contractor service reviewed all results and identified those they felt were most important to incorporate into training. Albury and her team took a pragmatic approach to training development and delivery, due to the immediate need to move results into practice. They presented key insights at a hybrid meeting at the FCDO, and delivered training remotely. These methods were selected due to FCDO staff working internationally, and across time-zones. Training included showing real examples from conversations and asking clinicians to roleplay examples. Training was recorded for asynchronous access, and key points were translated into an infographic for use during calls (appendix A).

3.1.5. Training reception

From Patel's perspective as a commissioner there were three key benefits from the training: (1) increased confidence in staff, (2) providing a framework for these sometimes-complex calls, and (3) an evidenced understanding of the pitfalls in practice, and an opportunity to consider solutions that address practical rather than theoretical challenges. Patel emphasised the impact of these findings in providing real world evidence on the difficulties that can be experienced, adding options to the clinician's communication 'toolbox', and some process issues that could be easily remedied (such as the ability to reschedule a call if the patient had limited time or was not able to speak freely). The training was intended to be delivered once. However, due to the strength of the positive feedback the recording and infographic is available to all new members of FCDO clinical and welfare teams and contractor services.

A challenge recognised by the commissioner will be embedding the insights into day-to-day practice in a way that it becomes business as usual; a formal audit to evaluate if the training has been embedded will be a useful area for future consideration. While COVID-19 is now part of day-to-day practice, the commissioner identified that many insights are transferrable to risk communication and mitigation for other infectious disease outbreaks.

3.2. Communicating about self-harm and suicidality in the context of suicide risk assessment in mental health care

Whilst Project One focussed on distal risk, project two focusses on a less distal risk; Emergency Department assessment of suicide risk in the near-future to decide whether a person is safe to discharge home and can then receive aftercare (if available) to support them beyond the immediate crisis.

3.2.1. Context

Self-harm is defined as any act of self-injury or self-poisoning irrespective of the motivation behind the act. It includes cutting, burning, hitting (e.g. putting one's fist through a window/door), ligatures and overdoses. Self-harm is the biggest risk factor for suicide. This case study

focuses on suicidality (thoughts and plans to end one's life) and self-harm. This training came about after collecting recordings of professional-patient interactions in secondary mental health care involving people presenting with psychosis or depression. McCabe's applied research [20] focused on the quality of communication and developing and testing training based on CA findings.

3.2.2. Aim

To analyse how clinicians ask about suicidal ideation and/or self-harm in the Emergency Department and how patients respond.

3.2.3. Research

Health care professionals routinely ask people presenting with mental health difficulties across primary, secondary, tertiary and emergency care about past, current, and possible future self-harm, including suicide. Three separate studies were conducted involving audio/video recording routine U.K. professional-patient consultations. This included a study: primarily in secondary mental health care involving psychiatrist-patient appointments in outpatient mental health clinics; in primary care involving General Practitioners and people presenting with common mental health problems; and in the Emergency Department focusing on psychosocial assessments between mental health clinicians and people with suicidal ideation and/or self-harm.

The team was struck by questions about suicidality and self-harm and focused on them more closely. Across settings, CA showed that professionals used closed yes/no questions to ask patients about self-harm [21]. Closed yes/no questions communicate an expectation in favour of either 'yes' or 'no' responses through their grammatical structure and particular words that prefer 'yes' or 'no' responses [22]. For example, "Are you feeling low?" is framed positively, inviting agreement to "feeling low" [23]. Conversely, "Not feeling low?" is negatively framed inviting agreement to "not feeling low". `Words with positive or negative polarity further reinforce the expectation of a specific response in medical questions [24]. Words such as 'any,' 'ever,' 'at all' reinforce negative bias (e.g., "Any negative thoughts?") while words such as 'some' reinforce positive bias (e.g., "Do you have some pain here?") [24]. Across settings, the majority of questions tended to expect a no response, which biased patients' responses towards reporting no thoughts/plans of self-harm.

3.2.4. Training development and delivery

Training has mostly been occasioned by clinicians hearing about the work, sometimes through publications. The aim was to train clinicians in how subtle differences in asking about suicidal ideation and/or self-harm impacts on how patients respond about their current and future risk of self-harm/suicide. Training focused on improving how healthcare professionals elicit thoughts of self-harm. It was delivered face-to-face or online depending on participants' availability and flexibility to be released for in person training. Getting professionals off rota for training (particularly in the Emergency Department) can be difficult, particularly since COVID. Training included discussion of professionals' perspectives on conducting risk assessment in the Emergency Department, watching and discussing audio/video clips of risk assessment in practice, insights from CA about question design (and polarity in question design) and role play. It also included evidence on the validity of risk assessment in final contacts before death by suicide, namely findings from the National Confidential Inquiry that of the 17 people who die by suicide each day in the UK, four out of five are judged to be low/no suicide risk suicide [25]. Some training involved people with lived experience contributing their experiences on being asked these questions e.g., "You're not supposed to say yes to these questions".

Professionals described being fearful of blame if someone takes their life and that while formulaic question-and-answer risk assessments help make staff feel safer, this is not a valid way of assessing risk [26]. They discussed defensive practice arising from fear of being called to the coroner's court if someone took their life and suicide risk had been identified in final contacts with professionals. Anonymised video or audio clips from the consultation recordings focused on brief excerpts illustrating different question designs (positive and negative polarity in particular) and how they impacted on patients' responses.

3.2.5. Training reception

Practitioners stated they received limited/no training on asking these sensitive questions and highly valued videos of actual practice (not currently used in training in this area) and discussions about how to change/improve communication and risk assessment within the constraints of routine practice: "On seeing the videos of how questions are asked in one training session, I have completely changed my practice", "I was not aware how the subtlety of the phrasing can massively impact the response (e.g. avoiding any, ever, at all) and disclosure by the patient", More recently, McCabe was invited to be on NHS England's national working group on 'Risk and Safety in Mental Health' to bring expertise on communication in the context of mental health risk assessment.

3.3. Police crisis negotiation in the context of suicide threats

Having explored training development for communicating distal risk in near and more distant futures, Project Three focuses on situations of proximal risk with suicidal persons in crisis.

3.3.1. Context

The UK Hostage and Crisis Negotiation Unit (HCNU) of the Metropolitan Police both supplies negotiators and delivers training (inter) nationally. While most negotiation research and training focuses on hostage-taking and terrorism - the highest profile but least common type of incident [27]- the project reported below focused on suicide threat.

In 2014, senior HCNU officers invited Stokoe to work with them. They had attended previous training that she had developed using the Conversation Analytic Role-play Method [13,28]. CARM takes conversation analytic insights about (in)effective communication to underpin research-based training. Since 2008, Stokoe developed and iterated CARM which, unlike conventional role-play [29], and by playing anonymized extracts of audio- or video-recorded data synchronously with a Jefferson (2004) transcript [30], enables participants to use live action to 'role-play' what they might say in any given sequence; evaluate what practitioners actually do, and thus identify what works. The first CARM project focused on enabling mediators to improve engagement in inquiry calls and increase their client base [31,32]. Having learned about this research-to-training pathway in a related conflict negotiation setting, the Head of UK National Training at the HCNU "took the rare step of releasing negotiation tapes" [33]. Stokoe worked with their training lead to co-produce the training.

Whilst this Project was conducted in collaboration with police professionals, suicide threat negotiations is a context in which some specialist healthcare professionals are regularly involved (e.g., in the UK, Advanced Mental Health Practitioners). It is reasonable to assume that similar communication challenges and practices are entailed for such healthcare professionals.

3.3.2. Aim

To identify the interactional foundations of safe outcomes in negotiations with suicidal persons in crisis.

3.3.3. Research

Analyses focussed on recorded negotiations occurring in many configurations (e.g., a person in crisis may be barricaded inside a building or on a roof; negotiations were conducted on the telephone or face-to-face, sometimes at physical distance). A detailed description of each of the 14 cases and their background, participants, and outcome, is reported elsewhere [34].

In early conversations with the police, Stokoe (with postdoctoral researcher Sikveland) learned that most negotiations end with a safe

outcome. An important objective for negotiators was to get the person in crisis to move to a (more) physically secure location (i.e., away from the edge of a roof) so that the negotiation can proceed (more) safely. The research therefore focused on identifying negotiator practices that secured productive engagement [35–40].

3.3.4. Training development and delivery

CA data can answer many different questions, so Stokoe and Sikveland discussed potential 'trainables' with HCNU to optimize the benefit of their training. In 2017, Stokoe and Sikveland trained every *Metropolitan Police* negotiator as well as visitors from regional police forces, the FBI, and other areas of policing. As conversation analysts, Stokoe and Sikveland sought not to 'recommend' communicative practices, but to describe, and share what experienced and expert negotiators were actually doing in live negotiations and ensure that such practices were written into institutional documentation and thus preserved for future training.

3.3.5. Training reception

CARM "challenged the training status quo" [33] and improved communication with people in suicidal crisis. Subsequently, negotiators reported better outcomes "as a direct result of the language used" and that the training "has had a specific impact on our negotiations from the opening gambit and throughout the dialogue … and help[ed] bring incidents to a swift conclusion."[33] In 2018, the Head of Border Policing Command at the Organised Crime and Counter Terrorism Unit invited Stokoe and Sikveland to roll-out the training to every Police Scotland negotiator. This also involved Sikveland observing their national negotiation course (Heidi Kevoe Feldman, who co-authored Sikveland et al. (2022) also is a certified Telecommunicator, Emergency Medical Dispatcher, and Crisis Negotiator). Afterwards, the heads of training and operations reported that "the research is fully embedded within negotiator training courses and materials."[33] The reach of the training was later extended to every new officer in *Police Scotland* via the hostage and crisis unit's input into tactical communication.

3.4. Integrated insights

Taken together our projects suggest some critical insights for those who plan on developing, implementing, or commissioning CA-grounded communication training about risk in high-stakes settings. Table 2 highlights specific cross-cutting insights.

4. Discussion

We aimed to demonstrate how CA has been used to design communication training in identifying, mitigating and managing risk where there is current or near-future threat to life, and to integrate joint insights for others considering similar work. Through three projects, we demonstrated how research to impact pathways were developed across different settings. We showed how training develops from research that identifies, describes, and shares specific communication practices used by practitioners, but which are not already written down or embedded in institutional training, policy, or related documentation. Crucially, the training based on CA does not comprise hypothetical, theoretical, or artificial practices. Instead, we showed participants what their own expertise looks like – and sometimes what they are doing that does not work which might be encoded in institutional processes [41]. Our integrated insights highlighted that this work is not solely an academic endeavour; developing and implementing CA-grounded training is a highly relational activity, occasioning collaboration, ongoing communication, knowledge sharing, and requires researchers to be responsive to the needs of the organisation. Integrated insights also identified potential challenges to assessing and evaluating changes to practice, including the 'low frequency but high stakes' [1] and sensitive nature of these interactions.

Table 2
Integrated Insights Across Projects.

Insight	Description	Audience
1 Advocacy from senior decision makers was essential	In all projects CA-grounded training clearly differed from 'standard' training. We found that advocacy from senior decision makers to be essential in the commissioning and undertaking of CA-grounded work. Due to the high-stakes nature of our contexts without this advocacy access to these settings and data would range from challenging (project 2), to impossible (projects 1 and 3). Developing good relationships with decision makers was crucial. As a consequence, changes in role or staff turn-over have potential to negatively impact research and resulting training delivery.	Commissioners Researchers Practitioners
2 It was important to understand factors that are not explicitly stated or readily apparent.	Our expectations about interactions, environments, and participants were not necessarily reflected in their empirical reality. We found that there are tacit contingencies (latent factors that are not explicitly stated, or readily apparent) that are important in how professionals communicate in these high-stakes contexts. We could uncover tacit contingencies through learning about wider institutional context, beyond our immediate data, and engaging with partners with expert contextual knowledge.	Researchers
3 Identified solutions were not part of current training	Despite practitioners doing things that work – that we identified, described, and reported back to them – such things were either not part of current training, models, role-plays, or assessments; or these practices were glossed in normative (e.g., 'build rapport', 'active listening') but not precise ways[35]. Across all our projects, our analyses identified specific practices with potential to improve communication (and practices that should be avoided) that were not inscribed in current training.	Commissioners Researchers Practitioners
4 Implementation presented some challenges	All our work resulted in similar 'ideal' recommendations: changing the wording of static text (e.g., leaflets, website wording); changes to communication training content; or the assessment of communication skills. However, there was variation in how readily organisations could implement these. E.g. In project 3 recommendations for change were fully implemented. However, for this to occur in project 2 would necessitate changes to how consultation skills are assesses in the NHS, which was not possible. Organisational context should	Commissioners Researchers

(*continued on next page*)

Table 2 (*continued*)

Insight	Description	Audience
	be considered when planning how and which changes can be implemented.	
5 Training was received positively	Across all our projects practitioners and commissioners shared highly positive responses to training. We experienced few challenges in communicating CA to practitioners, who reported valuing use of evidence to underpin training, and the focus on addressing 'real' problems. Practitioners also often reported changes to practice, or intent to change practice as a result. We relied on testimonials and feedback from trainees and practitioners to gauge success of the training, as these could be collected within the time and budgetary constraints of our work. However, we acknowledge the limitations of testimonials in providing evidence of changes to practice, or interaction outcomes.	Researchers Practitioners
6 Evaluating the impact on professional communication and patient outcomes requires additional resources/ funding	In general, we were unable to assess the extent to which changes occurred in practice as a result of training, with respect to (a) professional conduct in consultations/interactions or (b) consultation/interaction outcomes. We also identified disciplinary differences in evaluation methods with a convention for quantitative assessment within medicine. Whilst the impact of CA-grounded training can be formally quantified through a range of methods[18,43,45], time and funding constraints limited our ability to do this. In our contexts, the fast pace, high-stakes, nature of risk communication and, often, its relatively infrequent occurrence [1], presented specific challenges to quantifying (but not achieving) impact. Two projects (1 and 3) were directly commissioned. Therefore it was necessary for study design to align with the needs of the organisation – an immediate need for evidence-informed training- rather than focus on quantifying effectiveness. However, in the case of Project 3, change to practice and training was documented as part of a 4* REF Impact Case Study in 2021.	Commissioners Researchers
7 High-stakes contexts led to considerable researcher responsibility which could weigh heavily.	Our work in high-stakes contexts presented us with similar challenges to those reported by qualitative researchers exploring 'sensitive', 'difficult,' or 'challenging' topics [48]. Emotionally charged, or distressing aspects of recordings could 'rest heavy on a researcher's conscience or may linger in the mind [48]'. Our additional role in developing and delivering training from results that can be used in the most urgent of contexts (and the implications for interlocutors if our training was underpinned by anything but 'water-tight' analyses) added substantive responsibility across the lifecycle of a project, that could also weigh heavily.	Researchers
8 Training design was responsive to participants and setting	All training and resource development and delivery focussed on improving communication in practice, and drew on insights from CA to do this, rather than comprising hypothetical, theoretical, or artificial practices. However, there was no ideal 'universal' method for delivering training. Rather, each researcher designed training which was responsive to their participants and setting, and involved co-production with partners (see 9, below) in deciding training format. Methods included the CARM approach, role-play, video-based recourses, and infographics.	Researchers
9 It is important to involve relevant partners equitably	We all found strong value in involving and, in some cases, co-producing with partners with lived experience of a specific communication context (including commissioners, professionals, and patients) throughout the lifecycle of the projects. For example, communication practices of most interest to analysts may not necessarily align with the needs of the target trainees, and overly technical conversation analytic terminology may not be understood. Collaborating with and involving partners can guide the research and training development process, to ensure the content of resulting training meets the needs of potential beneficiaries.	Researchers

Most research on high-stakes risk communication is focussed on population level risk rather than on the situated interactional level [42]. Our projects illustrate pathways from empirical research to training and impact at this interactional level, identifying how professionals make complex judgements moment-by-moment. For instance, clinical professionals regularly work with epidemiological information on risk factors, which are typically included in assessment proformas. These factors are often static, e.g. sex (being male), alcohol/drug use, LGBTQ+ , socioeconomic adversity are risk factors for self-harm, including suicide. However, risk is dynamic and identified through talk, and CA can play a key role in understanding *how* risk is oriented to by professionals and patients and how risk identification is a product of professional-patient talk.

In both clinical practice and our projects, effective risk communication is vital to ensuring information is conveyed clearly to diverse audiences. In clinical interactions risk communication may often be understood as focusing on supporting the individual to make an

informed decisions on their healthcare choices. In our projects, however, the scope extends beyond informed decision making.

Our projects make original contributions to the field of applied 'interventionist' CA [12], identifying insights for both researchers and institutional partners, when considering similar work. These projects also highlight a novel development for CA-grounded training. In 2011 Antaki stated that CA "has not reached the point where calls come in from outside agencies wanting CA help"[12]. However, we show that organizations, including those seeking to improve training for high-stakes risk communication, now *can* and *do* seek out conversation analysts specifically for the highly translatable insights they can provide to develop training to address everyday communication challenges. For us, this shift became possible through efforts to communicate the value and methods of CA to diverse audiences, including through focussed public engagement; policy engagement; and practitioner involvement.

We have focused on our routes into and experiences of CA based communication training. Our training was well received and participants reported benefits and changes to practice through qualitative evaluation. These cases did not quantify the effectiveness of training, although other CA-based training has been evaluated quantitatively. For example, pre-post studies from O'Brien et al.[43], and Jenkins and Reuber [44] demonstrated changes in professional communication practices following CA-grounded training. Stokoe's CARM approach has been evaluated in a feasibility randomized controlled trial as a method for improving participants 'interactional awareness' [16]. Two clinical trials have also evaluated professional and patient outcomes, demonstrating relationships between CA-grounded training and reduced antibiotic prescribing in a stepped wedge trial in primary care [45], and improved communication and psychiatrist-patient relationships in a cluster randomized controlled trial in mental health care [18].

4.1. Strengths and limitations

A strength was our ability to draw together insights, generating novel insights for both researchers and institutional partners. However, our experiences may not generalise to other interventionist applied CA work. We assessed training in different ways appropriate to the setting and projects, and training was well received by practitioners. Future work should systematically evaluate its impact on practice and outcomes. We recognize that assessment criteria vary across discipline, but also that time and resource constraints placed limitations on the extent of qualitative and quantitative assessment of the impact of training. Exploring possibilities for assessment/evaluation processes at early stages could support researchers to integrate evaluation in future. Aspects of our integrated insights could be transferrable to CA-grounded training development and delivery in other contexts.

5. Conclusion

Research in conversation analysis can identify, moment-by-moment, the risk communication practices professionals use in high-stakes contexts. These insights can enhance current training, and professionals particularly valued examples of real communication. Collaborative relationships with expert practitioners supported understanding of wider contexts and training needs. Implementing research-to-impact pathways grounded in conversation analysis could be applicable to other high-stakes areas where there is limited research and a dearth of evidence-informed training.

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Ethics statement

Ethical aprovals for project 1 were obtained from The Central University Research Ethics Committee (CUREC), University of Oxford. CUREC Reference: R75138/RE001. Ethical aprovals for project 2 were obtained from Lewisham research ethics committee; Plymouth and Cornwall NHS ethics committee (07/Q2103/96); East London and the City Health Authority REC (P/99/208) (P/02/254), Southampton and Southwest Hampshire Research Ethics Committee [Ref 05/Q1702/94], East London REC 1 [Ref 10/H0703/12]; and London Central Research Ethics Committee (17/LO/1234). Ethical aprovals for project 3 were obtained through Hostage and crisis negotiation unit research governance processes and Loughborough University Ethics Approval (Human Participants Sub-Committee) and Metropolitan Police Data Processing Agreement.

CRediT authorship contribution statement

Charlotte Albury: Funding acquisition, Writing – original draft, Conceptualization, Methodology, Investigation, Writing – review & editing. **Rose McCabe:** Methodology, Conceptualization, Writing – review & editing, Investigation, Writing – original draft, Funding acquisition. **Dipti Patel:** Writing – original draft, Investigation, Writing – review & editing. **Elizabeth Stokoe:** Investigation, Funding acquisition, Methodology, Writing – review & editing, Conceptualization, Writing – original draft.

Declaration of Competing Interest

Charlotte Albury has worked as an independent consultant for the Behavioural Insights team, Wildfowl Wetlands Trust, Adelphi Real World, Oxford Health BRC, and Linney Create for which she was paid personally. She was an academic advisor for NESTA, and did not receive personal payment.

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Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.pec.2025.109281.

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