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**Using Video-Reflexive Ethnography on an Acute Medical Unit**

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# Using Video-Reflexive Ethnography on an Acute Medical Unit: Methodological Challenges, Solutions and Opportunities within a Complex and Busy Clinical Setting

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## Abstract

Video-Reflexive Ethnography (VRE) is an innovative and participatory research and improvement methodology that involves videoing in-situ work practices and collaboratively analysing this footage with participants during reflexive sessions. This involves participants 'slowing down', engaging reflexively with their everyday working practices, and taking time out to discuss issues collectively. VRE has increasingly been used across a range of different healthcare settings. However, one setting that has received less attention is the Acute Medical Unit (AMU). AMUs are busy short-stay hospital departments with very high patient throughput and large multidisciplinary teams where patients receive initial assessment, diagnosis and treatment before being moved to other wards or settings. The aim of this study was to examine how VRE as a research and improvement methodology can be applied, in the busy and complex setting of an AMU. In this paper we outline some of the methodological challenges encountered in this setting and discuss how these were transformed into opportunities and solutions. Then, we evaluate our work by using the four guiding principles at the heart of VRE (care, collaboration, reflexivity and exnovation) to test if, and how, the methodology can be used in such a complex and busy setting without losing its methodological rigor and impact. We show how it is possible to initiate and achieve the core principles of VRE in the complex and busy AMU setting through careful planning, constant revision of data collection methods, remaining highly flexible and adaptable to the spatial and temporal rhythms of the ward and being sensitive to hierarchical inter- and intra-professional relationships and vulnerabilities. Finally, we share recommendations for using VRE in other busy and complex settings.

## Introduction

Video-reflexive ethnography (VRE) is a research and improvement methodology which has been used to examine patient safety. It promotes a focus on positive practice (rather than error and 'never events'), by understanding what contributes to practices that prevents harmful events, and to help clinical teams develop more effective ways of working that promote safety (Mesman et al., 2019). VRE is being increasingly used across complex healthcare settings such as infection-control (Gilbert et al., 2020; Wyer et al., 2015), Intensive Care Units (Carroll et al., 2008) and emergency departments (Noble et al., 2019). While these and other studies

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have shown that VRE is useful for research and practice optimization, it has, to our knowledge, not yet been used in the context of an Acute Medical Unit.

In this article we use data from a 12-month study using VRE in an Acute Medical Unit (AMU) to discuss some of the methodological challenges and potential solutions of using VRE in busy and complex clinical environments. As such this article should be understood as a methodological feasibility study: not of the impact of the application of VRE, but rather as an exploration of the most effective ways of applying this methodology. We begin by describing the AMU, and the methodology of video-reflexive ethnography. Then we consider a series of challenges encountered, and how these were reworked into opportunities and solutions. A key question for the discussion is how we maintain the integrity of VRE across its four key principles: collaboration; care; reflexivity and exnovation. We discuss how these solutions can be used effectively in other complex and busy healthcare settings and recommendations for future research.

## The Acute Medical Unit: Busyness and Complexity

Acute Medical Units (AMUs) were widely introduced to UK hospitals in the early 2000's, partly in response to increasing numbers of emergency and unplanned admissions (Dowdle, 2004). They are orientated towards consistent delivery (Reid et al., 2016) of rapid assessment (Bokhorst et al., 2018) and medical intervention (Chan et al., 2018). Patients present with a wide range of conditions via direct referral from the community or other hospital departments, or through emergency departments. Patients receive initial assessment, diagnosis and treatment in the AMU before being moved to other wards or other settings. This very high patient throughput makes the AMU one of the busiest wards in the hospital, with care delivered by large multidisciplinary teams.

The AMU chosen for this study is in a hospital in an urban area, and the ward has a throughput of approximately 15,000 patients/year, or approximately 40 patients/day. It contains 31 beds, with four six-bed bays along one side of the ward, and three single rooms and a four-bed room along the opposite side (1). At the top of the ward is an open area where the nurse's station, meeting room, administration space and doctor's room are all located. In the middle of the ward are bathrooms and disposal room. There are three records trolleys located near the bays and side rooms where the paper patient records are kept, and a number of computer stations to access the electronic medical record. The whiteboard is located on the wall opposite the nurse's station and is the location of many handovers and meetings.

Care on the AMU is provided by a large multidisciplinary team comprised of 10 permanent consultants, 90 registered nursing staff (RNs), and 50 healthcare assistants (HCAs). There are also groups of about 12 junior doctors rotating

through on AMU placement and 40 consultants, based on other wards, but also on rotation. In addition, there is a large ancillary team of ward clerks, receptionists, porters, and cleaning staff. Other healthcare professionals providing care, but who are not based on the ward, include physiotherapists, occupational therapists, dietitians, social and support workers, ambulance staff, specialty nurses, consultants from specialty wards, and a frailty team. At any one time there could be as few as 17-20 HCPs on the ward at quiet times and up to 65 at busy times.

The nursing shifts are managed by nurse coordinators, who are experienced staff nurses. They oversee everything that happens on the ward: nurse handovers; staff rotation; nursing and auxiliary staff; admission and discharge of patients and managing their visitors. The start of the medical shifts are staggered with the nursing shifts to enable a smooth turnover of staff and information, through a series of nursing and medical handover meetings. These meetings take place in the meeting room and by the large whiteboard (see Figure 1) opposite the nurse's station. The board displays patient information including diagnosis, assigned clinical staff and complex tasks that need to be accomplished, including discharge.

The AMU can be a challenging work environment for staff and also for VRE researchers because the high-volume flow of staff and patients never stops (see Box 1, which includes fieldnotes from a typical 15-minute observation period in the ward).

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1PM: The coordinating nurse comes out of the meeting room, past the nurse's station, picking up a pen on her way to the white board.

12 junior doctors and a consultant come out of the meeting room, past the desk, to the white board, forming a semicircle. A couple of visitors arrive at the nursing station and are directed to bay 3.

[I join the group to start filming]

The ward pharmacist leaves and goes into the drugs room. The junior doctors are assigned their patients. Each bay nurse joins them for the discussion of their patients.

[A bed comes up the side corridor - the doctors can't see it yet - I move back behind the nurse's station]

The bed comes up the corridor and turns. Everyone moves aside so it can be wheeled through. The meeting starts again. The cleaner arrives, glances at the white board through the group of doctors and then goes off to collect her trolly, taking the long way round to avoid the patient's bed and the group.

The RN signs in the patient and they move off to position the bed in a bay. The RN returns to answer the phone just as a couple of visitors come into view. They push through the group of junior doctors to get to the nurse's station where the RN directs them to the patient.
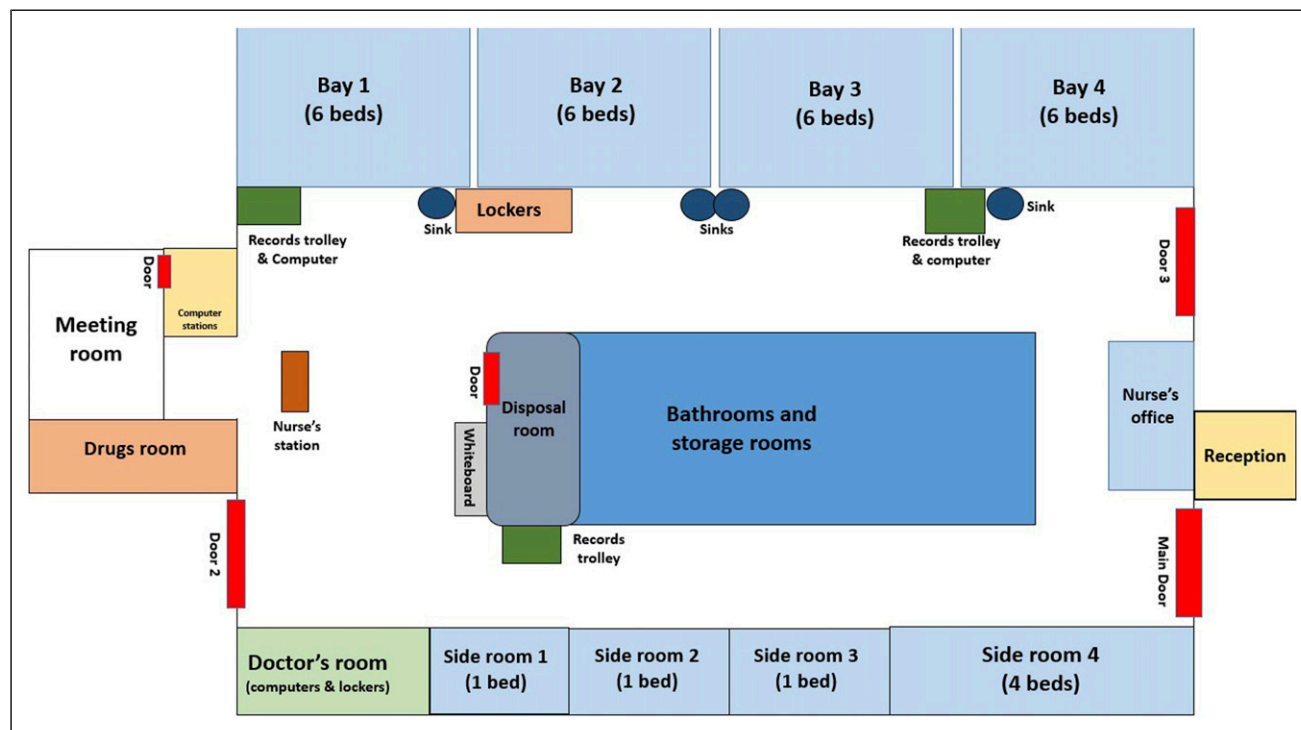
Figure 1. The AMU layout (not to scale).

Several consultants arrive from another ward, staying only a few minutes.

[I move towards the whiteboard then return to the nurse's station]

Another patient and his wife push through the group of doctors to get to the nurse's station. The RN accompanies them to his bed.

[I move back to the whiteboard, camera on]

By the time the RN gets back to her station there are more visitors, and the phone is ringing. The first bay nurse has gone back to her patients and the second bay nurse has joined the group. Two or three junior doctors have left the meeting. The co-ordinating RN re-joins the doctors at the whiteboard.

[I return to the far side of the nurse's station]

The doctors part again to let another patient bed through. The RN moves back to the station to sign them in. The phone rings again.

[I move to the whiteboard]

Another junior doctor leaves the whiteboard meeting and start their rounds.

The consultant calls the coordinating nurse over to ask about a patient. The phone rings again, diverting her. An RN comes past with an IV bag containing morphine. This needs a collaborating signature.

The RN turns and tells me that that is all the new patients for the moment as the phone rings again.

There are only three junior doctors left at the board now and a cleaner comes round to mop the floor. A fifth set of visitors arrives. The consultant moves off to one of the bays and asks the RN to answer some questions and they consult the patient's notes. More telephone calls and requests for the RN at the nurse's station.

Box 1: Fieldnotes A 'routine' 15-minute period at 1pm

## Video-Reflexive Ethnography: Our Instrument and Object of Study

The VRE methodology encompasses three interrelated and iterative phases involving the use of different qualitative methods (Iedema et al., 2019). Like other ethnographic studies, it starts with contextualisation, fieldnote collection and collaboration. This helps determine what, where and when to film and select footage in the second stage. Finally, clips of selected footage are analyzed by researchers and practitioners in reflexive sessions. The outcomes of reflexive sessions act as input for further analysis by the researchers but also as a point of departure for practice improvement by the practitioners.

Fieldwork was conducted over a six-month period from January to June 2018, with 65 hours of observations and shadowing, 10 semi-structured interviews were conducted with nurse coordinators, RNs, a consultant, a social worker

and a nurse educator. 22 hours of in-situ filming of everyday working practices, and eight reflexive sessions using edited footage.

The field researcher, JD was joined by the team's co-investigator JM for two weeks at the start of the fieldwork and for two weeks at the end by the chief investigator SG. The observations and interviews provided details about how and why the ward operates the way it does, and the challenges staff perceive in their work. Two key gatekeepers, one consultant and one nurse educator, who initially helped set up and grant access to the ward, were interviewed at both the start of the project and at the end, the second interviews focusing on reflections and evaluations of the project.

The focus was on participants working collaboratively on the ward during meetings, handovers and safety briefs. Video footage was edited and used to facilitate discussion during reflexive sessions and enabled clinical, nursing, care and pharmacy participants to see and discuss what they do every day and potential improvements. Reflexive session participants ranged from between one and 18 people who discussed inter-professional collaboration, interruptions, and distractions (see Grant et al., forthcoming). Over the course of the project, reflexive sessions were interspersed with filming and editing and a return to ethnographic work and interviews, producing a looping and reflexive process for both participants and researchers. Ethics approval was received from The North West – Preston Research Ethics Service. All participants provided informed written consent prior to their study participation, and NVivo 10-12 software was used for analysis.

As a participatory methodology, VRE is grounded in four principles: collaboration; care; reflexivity and exnovation (Iedema et al., 2019). VRE is aimed at co-creation of knowledge for both academic research and practice optimization, therefore, close collaboration has to be established with practitioners at every stage of a project. Participants are encouraged to be co-researchers by taking part in data collection, analysis and in some cases co-author publications (Carroll et al., 2021). The next principle is care. Creating and maintaining safety for participants while being videoed, observed and offering suggestions in reflexive sessions requires a continuous awareness of the dynamics of the research process and positions researcher-reflexivity center-stage (Collier & Wyer, 2016). Enabling a sense of care also helps create a space for participants and researchers to be reflexive. Reflexivity is critical to the success of VRE and exnovation (Mesman et al., 2019). Reflexivity is more than reflection, which is an activity medical staff are familiar with. Reflection is about thinking through one's own practice and learning from this, while reflexivity is a competence referring to "our capacity to monitor and affect events, conducts and contexts in situ" (Iedema, 2011, p. 84). Reflexivity is not just a practice for reflexive sessions but needs to extend into all research work and everyday clinical practice. It therefore needs to be cultivated and encouraged for both researchers and participants.

The fourth principle is exnovation, derived from combining 'excavation' and 'innovation', it can be considered as 'innovation-from-within' (Iedema et al., 2013). Exnovation stresses the idea that the 'ordinary' is an extraordinary accomplishment and contributes significantly to patient safety. It aims to explicate what is already present, but is often overlooked, because it is taken-for-granted in practice. Rendering the hidden explicit enables participants to learn and engage in ways of improving practice (Mesman, 2008). Exnovation requires an outsider perspective to see taken-for-granted practices but combines this with insider knowledge to define them. VRE allows the familiar and the unfamiliar to coincide in order to provide a 'situated distance' (Carroll & Mesman, 2018, p. 1152). The tension between the collaborative nature of VRE and the context of its application became central to the question of how this kind of research could be successfully carried out in such a busy and challenging environment. The following sections present some key challenges when conducting VRE in the AMU and the ways solutions were sought.

## Recruiting and Consenting Participants

Care for participants and collaboration through practices of recruitment and consent turned out to be one of the biggest challenges of the project due to the dynamic nature of the ward and the complex set-up of the informed-consent process.

First, the complexity and repetition of the local NHS research governance process proved to be a barrier to obtaining informed consent effectively. Despite multiple efforts, the local NHS research governance office insisted that all participants should be asked to consent separately to each of VRE's component methods: observations, interviewing, videoing, reflexive sessions. Four similar looking sets of documents each with an invitation letter, four-page participant information document and two informed consent forms had to be produced and carried. Since VRE work was carried out iteratively, carrying and managing multiple packs of 10-50 forms on every fieldwork visit as well as video equipment, was awkward and difficult. For the participants it was unnecessarily confusing and frustrating. They did not see why they should waste time filling out more than one consent form. Informed by previous VRE studies (e.g. Carroll et al., 2008; Mesman, 2011) and conversations with senior AMU staff, the assumption was that the project would involve approximately 30 participants. In reality, 127 staff members participated, many only participating in one or two activities and only two participated in all four. The large number of staff meant that there were many potential participants but there was always the problem of keeping track of who had been informed and consented (or not).

The notion of informed-consent means that each potential participant is given every opportunity to gain information about the research, ask questions and consider whether they wish to continue or not. The next challenge was to ensure that

this was the case for eveyone. All staff working on the ward were emailed full details of the research by the senior staff before fieldwork began and again, after it was underway. We put up posters on all external ward doors for the duration of each researcher visit for staff and visitor information. However, it quickly became clear that many staff had not read the emails, and some had no clear picture of what the project entailed. It was necessary to find additional time to fully explain the details of the project, and informing staff became an ongoing task. The few minutes as staff gathered for meetings proved one opportunity, but meetings could not be delayed by taking *too* much time. In addition, due to changing commitments, it was normal practice for staff to come and go during meetings. Explanations thus needed to be concise, precise, and well-directed, although there was still the risk that latecomers may miss the information and in that case be excluded from data gathering.

Lastly, in all verbal and written participant information we stressed the voluntary nature of participation and the option for this to be reversible. However, not all potential participants felt comfortable enough to openly decline. For example, a few RNs and healthcare assistants (HCAs) who did not want to participate avoided the scrutiny of institutional, peer and social pressure by displaying a range of techniques for subtly refusing their consent without drawing attention. At one of the first handovers, all RNs and HCAs took consent forms, read with pen poised but some returned the forms unsigned and without verbally stating lack of consent. The researcher quickly became aware of this strategy, and these staff were excluded from data gathering. The researchers also took the opportunity to speak to the staff individually about consent. While consenting staff in groups was more efficient, individual encounters were more effective but opportunities for this were scarce. Another strategy for refusal was used by a HCA who was consented for observations, was asked for an interview, and given an information sheet. When contacted again, she kept insisting that she did not know what the study was about and had it explained again. The researcher realised, however, that while the HCA was fully informed, she was unwilling to overtly decline and respected her decision because this was her strategy of refusal.

Consent is often talked about as an ongoing process and taken to mean that participant's consent is repeatedly checked over the lifetime of a project (Hor et al., 2014). This was important to the project, but another challenge was that the large number of staff rotating through the ward meant every period of data collection involved recruiting new participants. Clinical staff tended to comply when consultants, used to taking the lead, attempted to verbally consent everyone in the room. It sometimes surprised consultants when the researcher continued to pursue individual consent. Across the project, only three people overtly expressed refusal to participate: two temporary members of staff and one visiting clinician. This was one point where the large number of staff on the ward was an advantage as the researcher simply recruited others when staff refused. The constraints we experienced through dealing with high number and high turnover of participants, non-participants, combined with the limits of time meant that we learned to pick the right moment, such as using the information structure already in place, informing staff at the start of meetings, be succinct in our message, have a keen eye for unexpected opportunities and to recognise subtle refusal.

## Observation Work

Observation work is central to VRE and comes in many forms: non-participant observation of the dynamics of everyday work; framed observation through the lens of the camera while videoing and analytical observation during the reflexive meetings. The iterative character of VRE makes observation work of all kinds interrelated and interdependent. The key challenges to conducting observation work in the complex and busy AMU setting were getting to know large numbers of busy staff and building trust during observations.

### Observations

The large numbers of staff engaged in many activities and meetings meant that opportunities for observations were numerous, but also presented challenges. Getting to know who was eligible for approach and inclusion was difficult because of the large and temporary number of staff, as mentioned previously. There were also specialist consultants who visited briefly to review patients for transfer, junior doctors, rotating through and temporary bank/agency nurses or nurses temporarily seconded from other wards. While the aim was to extend eligibility for participation to everyone, it soon became clear that many visiting staff did not stay long enough to participate.

Staff were usually too busy to stop and explain ward routines or who the permanent staff were. Hence, the observation periods became integral for identifying participants. Several strategies were employed. First, the researcher stayed close to each shift's coordinating nurse and brief moments of calm were used to learn how the ward worked and ask questions about routine events such as phone calls. Regular routines became more apparent as time went on. Staying in one place, often at the nurse's station was an opportunity to link the staff rota which was visible there to the observable staff and see how staff with different roles interacted.

The sheer number of staff is one aspect of busyness, but there was also a regular (although not guaranteed) rhythm to the day. Observing work from the beginning of the day shift, including how nursing and clinical handover meetings structured the daily routines and shifts, provided clarity for how to fit the research to ward rhythm. Interviews, for example, were scheduled for early afternoons when two nursing shifts overlapped and after 9pm when drug rounds had been completed.

The second issue with a busy staff is building trust. Even if participants provide fully informed consent, they may still be uncomfortable being observed, despite researcher exhortations to do what they do normally. In the AMU, observations and note-taking in most areas was at risk of being misinterpreted as managerial assessment and therefore distrusted and disliked. There were two solutions used to resolve this misunderstanding and to build trust. First, observation periods included short breaks for writing fieldnotes in spaces where the process of writing went unremarked, like the meeting room or nurse's station.

The nurse's station became a key site for observations as it afforded a view to the whiteboard and down one corridor (Figure 1), while remaining out of the flow of staff, patients and visitors moving up and down the ward. As almost everyone passed by the nurse's station at some point during their working day and many used it to write notes, wait for patients or staff and while they did so, they would often chat, however briefly. These short encounters contributed to relationship building and trust which required careful balance between blending in and collecting data.

Shadowing individual staff members proved productive as it is routinely used to instruct trainees and induct new staff. This provided a comfortable context which participants had control over. When other staff saw the researcher shadowing a colleague, they relaxed. Staff enjoyed being shadowed, appreciated the interest taken and readily engaged in narrating their work, responding to questions, waiting patiently to enable notetaking and ensure understanding before moving on. Initial consent was easily taken and consent from others they interacted with was more easily gained during shadowing.

## Videoing Staff Routines

Video is an excellent medium for capturing the complexity of multiple events and proved extremely valuable in the context of the AMU. During videoing, the challenges included filming in highly technical and busy areas, whilst excluding unconsented staff and patients from videoing. Two strategies were therefore employed to address these challenges: changing locations and employing creative camera techniques.

At the beginning of the project, the researcher started by following one professional at a time (e.g., nurses) through their schedule. However, the ward was so busy that it was not possible to video while following a person or a team because unconsented staff and patients constantly come into view, and it was impossible to video and consent simultaneously. In addition, when trying to capture RN handovers at the end of bays by standing in the middle of the area or by a patient's bedside, there was a high risk of disturbing patients and the constant risk of getting in the way. To overcome these challenges, videoing in this area was abandoned quickly and replaced with filming in fixed locations (e.g., the meeting room, white board or side room corridor) and recording all successive meetings in these locations. Videoing in the meeting room or at the whiteboard with groups of already consented staff proved to be more successful as it provided staff with reassurance that they knew where and how filming was happening, making the research more predictable for them.

Second, our strategy of staying in one location made identifying successful camera angles which excluded unconsented staff and patients easier. Staying in one location made identifying successful camera angles which excluded unconsented staff and patients easier. While the meeting room location proved easy to film in, meetings at the whiteboard were held at busy times, and even though this area was large, it often became congested. While providing evidence for the kind of interruptions staff encountered e.g. moving aside for beds or stopping talking to ensure confidentiality (box 1), it also meant interruption to videoing. To complicate the situation even more, patients in bay 1 (Figure 1) could potentially be filmed, so a series of camera angles and strategies were employed: aligning with staff movement and pace, using their bodies to screen out unconsented people, zooming in and out, moving back and forward, using lower camera positions and angles and pointing the camera downwards to signal that no filming of unconsented people was occurring. In exceptional circumstances where patients were accidentally captured on video, footage was erased, their image edited out, or anonymised.

This ward was not just busy with people, it was also busy with equipment stored close-at-hand in the corridors and larger equipment found temporary storage in the whiteboard area. This added to the complexity of filming because they were easily stumbled over but also provided an opportunity as ready spaces for a researcher to tuck themselves away, out of the flow of the ward. Researchers need to avoid backing into expensive equipment and other people, so they need to watch the wider, moving context of the ward and its relationship with what was on the camera screen. Capturing the interactions (which constitute data) whilst avoiding inclusion of unconsented staff, required awareness of what was captured in the wider frame and background. This created a considerable challenge for the person videoing, as it needed development of a constant 360° awareness: the researcher's body placement and how and when to move in relation to the action behind and to the sides of the camera and what was likely to come into view.

There were brief periods when two researchers worked together, and footage was gathered from multiple viewpoints on the same event or from multiple handovers. Staff were generally more comfortable with the videoing process than observing. This may be because some rapport between staff and researcher had built up by then. Only two people declined to be videoed and did so

explicitly and reported that it was because they were temporary staff.

## Reflexive Sessions

The last form of observation work occurs in reflexive sessions where groups of clinicians, nursing staff, pharmacy and healthcare workers came together to view and discuss short clips of in-situ working. Challenges for holding reflexive sessions included finding time to hold them, the issue of continuity when many of the staff were rotating through the ward, and the ward hierarchy.

Initially, reflexive sessions involving single professions were conducted during the shift overlap times of the nurses and HCAs, and during the weekly junior doctor's educational meetings. However, the final reflexive session held at the request of the consultants took three months to find a timeslot that allowed sufficient junior doctors and consultants to attend. Persistence and patience turned out to be key. Scheduling interdisciplinary reflexive sessions was even more difficult on the AMU as the clinicians and nursing staff kept different shift patterns. Yet, an interdisciplinary doctor/RN/HCA/pharmacist meeting became possible because the nursing staff agreed to stay on after their shift ended.

In addition to the challenge of time, the high staff turnover and shift working meant that staff that were videoed only had a limited opportunity to see how this footage was used in the reflexive sessions. Again, a series of strategies were employed. For example, we tried a quick turnround of the same day film-edit-reflexive session, where staff videoed at the start of their shift were then able to reflect on this work at the end of the same shift. This was effective for the practice of reflexivity, building trust and motivation. Later reflexive sessions were conducted within a week of videoing, which provided more time for selection, preparation and reflection but reflexive sessions, but seldom involved the participants who were in the edited video footage. Fortunately, this is not necessary for VRE as the focus is on the ward's practices and not on individuals. Since the focus during reflexive sessions in this project was on 'how do *we* do things on this ward?' The VRE sessions did not require the attendance of practitioners who were featured in the video clips. Yet, much as participants had to learn to be research participants, they often needed to *learn* to view footage collectively and in a reflexive way, seeing their own practice *as if from outside* their own embodied experience. An example of that is detailed in a video handover led by an RN seconded from the Intensive Care Unit (ICU) provided a contrasting style of handover to the practice in the AMU (Box 3: Reflexive Session: Contrasting styles).

RN2: So, I need less information because I've got six patients to hear about. That's too much information for me. So, I need to know what they're in with, what we're

doing for them, what the plan is, how do they move, and what their pressure is like. That's it.

…

RN3: … If you're telling me who they live with at home, I don't really need to know that first thing in the morning. I can find out that information in the notes when we're thinking about discharging them.

…

RN7: If they've got a package of care three times a day, that's not pertinent at three o'clock in the morning. What's pertinent is making sure the patients are getting the treatment and the care that they require…

RN2: Yes, that's why I realised he was ICU just from that handover because he's used to having only two patients or one patient. He can give that detailed account.

Box 3: Reflexive Session: Contrasting styles

While the video footage was initially chosen to show an interruption, the discussion was re-framed based by the RNs who wanted to discuss their priorities for working effectively in the AMU context. By seeing a contrasting style, this helped participants reflexively see themselves. This process also took place when viewing footage of other members of the clinical team and helped staff to see and discuss alternative ways of doing their everyday work and in this way learn from each other as well as from themselves. VRE, in other words, provided an opportunity and platform for re-awareness and re-appreciation of the everyday work of others and themselves. Or as one of the consultant's said: "What stuck in my head, was actually seeing the other consultants … So actually, seeing how other consultants did things, not structurally, but the small behavior things, has been really helpful" (Consultant, Reflexive Session).

Lastly, inter and intra-professional hierarchy significantly influenced the conduct of the reflexive sessions which were intended to be open and collaborative. Junior doctors, for example, usually spoke directly to the consultant in the room, not each other. In one session, where nursing staff and junior doctors viewed footage of the morning medical handovers, the researcher's question was 'How do different staff participate in these meetings? What is the nurse's role?' The doctors answered first and extensively that the nurse's role in the meetings is to give them information on patients, ward availability and patient's discharge. When the researcher asked what the nurses got out of the meeting, one junior doctor spoke *for* the nurses who were present in the room and indicated that they got information about a patient's condition in order to do their job and that the nurses gained immensely from being allowed to attend their clinical meetings. These meetings are intended to be interdisciplinary, with clinical and nursing staff working together. The nurses remained silent until asked the same question again, directly and

then they mirrored the doctor's answer and appeared resigned to being spoken for. The organizational power structure did not allow much space for collective engagement in which interdisciplinarity acts as a rich resource for knowledge and experience. To move towards more non-confrontational, cohesive group engagement, everyone was given post-it notes and pens and asked the question: "What do you want more of?" The anonymous notes were then put onto the wall and sorted into categories. Communication came out as a major issue, allowing participants to talk about it collaboratively with each other - not to the researcher. However, recognition of this kind of issue which can undermine genuine collaborative work was impossible to explore in so short a timeframe and with so mobile a group of participants.

## Discussion

Using VRE in the busy and complex AMU context was challenging, yet these challenges also presented a range of opportunities to adapt to work within the context. Here we evaluate VRE as a methodology through its implementation in the AMU setting and ask how it can be implemented in other complex and busy healthcare settings without losing its rigor and impact. To accomplish this, we structure our discussion of the key challenges, opportunities and solutions identified in this project around the core principles of VRE: collaboration; care; reflexivity and exnovation (Iedema, 2011).

### Collaboration

In research projects, collaboration starts with the consent process and needs to be formalized before being acted upon. In this context, the consent forms are an example of 'bureaucracies of virtue' (Jacob & Riles, 2007). While Stark & Hedgecoe (2010) state that non-written consent is explicitly allowed in the UK, this approach was not permitted by the NHS ethics review process for this project, and neither was the proposal to offer just one set of participation information and consent forms to cover all areas of the study.

During data collection, this highly bureaucratic formal consenting procedure was often at odds with the collaborative principle of VRE and presupposed issues of trust which required institutional protection of the participant (Shannon, 2007). This presented a number of challenges to collaboration as it transformed the researchers into institutional representatives and the participants into passive research subjects who have no control over the prewritten guidelines of the research encounter (Shannon, 2007, 238). Requests for multiple types of consent also hampered staff workflow.

The fact that some participants had to imply their lack of consent and others had to be protected from line managers agreeing for them meant that consent forms *were* necessary in this project. However, given the challenges presented here, it became clear that they also required further adaption to make

them suitable for the way that VRE fieldwork is conducted in practice. An ideal alternative format for future VRE studies carried out in busy and complex clinical environment is a symmetrical, situated approach which would allow for a more collaboratively designed agreement between researcher and participants. This consent form could be made *after* a dialogue between the researcher and participants and submitted to research ethics committees for review. In this way, the ethical terms of engagement can become a meaningful conversation again between researchers and participants, instead of a formal process of 'signature chasing'. We suggest that such shared ownership would provide a more solid base for a truly equal collaborative relationship.

Long-term ethnographic relationships were hard to form in this challenging fieldsite due to its inherently busy nature. However, two solutions developed by the research team turned out to be successful. First, the ongoing adaptation to the AMU ward's temporal and spatial rhythms provided repeated opportunities for the researchers to build respectful relationships with the AMU staff. Second, engaging with the hierarchical ecology of the AMU environment through active involvement of senior staff in the ward (i.e., two senior RNs and a consultant) meant that most other staff were at ease with the project and VRE methodology being used.

### Care

VRE collaboration requires care for all involved, including researchers, during all phases of the project. It starts with forming relationships, building 'trustful entanglements' with professionals in the field site and trust is a foundational ingredient in all phases (Carroll et al., 2008, p. 89). Iedema et al., (2013) argue that for VRE to be effective, a level of vulnerability or in situ uncertainty needs to be present and contributes to in situ learning as an ongoing exploration of one's owns ways of doing and being. Considering the active position of vulnerability in VRE, Carroll and Mesman (2018) refer to it as a competence and this requires a safe environment, so managing vulnerability is key.

It would be simplistic to consider collaboration an expression of a safe environment. In the case of visual data collection and analysis, VRE researchers need to be sensitive to participants' potential discomfort, respect this and take time to remind them individually and collectively that VRE focuses on positive examples of shared practice. However, as we have shown, a key challenge to the VRE concept of care was that it was often expressed by participants by working against the hierarchical ecology of the ward (e.g., leaving consent forms unsigned). Such 'ambivalence-in-action' required the researcher to be quick to recognize these cues in order to respect and align with the participant (Benjamin, 2016, p. 971). Being persistent and disrupting the established hierarchy when line managers automatically assumed consent for others or recognising strategies of passive or 'informed refusal' (ibid) in response to managing hierarchical pressure required the

researchers in this project to move carefully, creating and defending a safe space that allowed VRE to become effective. The researchers also needed to know and be prepared to change the conditions under which research was undertaken, swapping observations for shadowing or asking a senior colleagues or manager to leave or leaving oneself if that is required. Being a flexible methodology, VRE allows for such adaptation to produce conditions free of 'unjustifiable vulnerability' (Collier & Wyer, 2016). We suggest that this flexible approach is necessary in busy and complex healthcare settings to ensure that the principle of care is adhered to for all research participants.

A positive focus on what already worked well in this AMU setting contributed to a safe environment in this project. Focusing on examples of good practice and on shared practices instead of individual performance was therefore an important aspect of providing care in reflexive sessions. To prevent uneasiness, a solution-focused approach in facilitating reflexive discussions supports an atmosphere that allowed an open, blame-free discussion (Mesman et al., 2019). This required a 'slowing down', taking time out to discuss issues, in contrast to the urgency and rapidity of AMU practice. Building trust and creating an atmosphere of care was difficult but possible in the AMU context and is something that should be a key aspect of VRE research in other complex and busy healthcare settings too.

## Reflexivity

Reflexivity must be present in researchers to facilitate the principles of collaboration and care. Being reflexive is the ability to monitor and correct situations while they happen. It is actively practiced in the present and as such has an immediate effect. As an ability, reflexivity is a practice directed at ongoing, everyday habits and is concerned with the group's collective reflexive competence. Such a competence exceeds the sum of individuals' abilities. Staff need to learn to internalize such a monitoring and corrective ability, to become reflexive. VRE sessions are opportunities to learn and practice collectively and reflexivity to become a 'reflexive practitioner.'

A key challenge to the implementation of VRE in the AMU setting was enabling staff to set time aside, to slow down, to collaborate, which stands in contrast to the busy dynamics of the AMU.

Learning the skill of collective reflexive competence was partly mitigated by the use of video clips in the video reflexive sessions, which aimed to expose the taken-for-granted, making it seem unfamiliar and learn from it. While the video footage was of specific AMU team members undertaking specific kinds of work at particular times, it could be viewed by any team member as a way of improving their working practices. This is because video is considered to be 'hologrammatic' (Iedema et al., 2019), enabling participants to contextualize what is presented in time and space so that they can 'see' outside and beyond the frame of the clip. This combination of alienation, familiarity and the multi-layered effect of the hologrammatic nature of video therefore afforded the AMU staff a variety of collectively developed reflexive views on their daily practice. Based on our research, reflexivity was found to be a VRE principle that we believe can be effectively applied in other complex and busy healthcare settings with high staffing levels and limited time.

## Exnovation

In VRE, exnovation refers to changing existing work practices based on what is already known by staff within a setting. This 'bottom-up' approach to practice improvement, based on the outcomes of the reflexive sessions, involves the "unchoreographed shifting of power between clinicians, the researcher, the video camera and video footage… found to be at the heart of the success of the video-reflexivity methodology" (Carroll, 2009, p. 247). Developing an exnovative perspective requires practice over time, so the limited timespan combined by the rapid staff turnover complicated this development of the individual and collective competencies. Solutions involved aligning with already scheduled meetings and engaging senior change-makers. Even scheduled meetings were vulnerable to external distractions (doctors being paged, staff leaving or entering the room). However, once in the room, stationary attentiveness was achieved by staff through 'collective 'intelligence' (Iedema et al., 2013) and the process of working towards exnovation could be initiated. Researchers also prioritised the empowering of AMU staff to take a more active role in suggesting changes after the project had ended.

## Conclusion

Here, we have shown that it is possible to initiate and, in many cases, achieve the core VRE principles of care, collaboration, reflexivity and exnovation within the complex and busy setting of the AMU. This study has shown that through careful planning, constant revision of data collection methods, remaining highly flexible and adaptable to the spatial and temporal rhythms of the ward, and being sensitive to hierarchical relationships and vulnerabilities, the collaborative relationships based on trust and care can be achieved and the collective competencies of reflexivity and exnovation initiated. However, it was not possible to fully explore the opportunities and solutions that were presented in this 12-month study. It would therefore be beneficial for future studies to be carried out over a longer time period to fully explore the implementation of VRE in the AMU setting in relation to the four core VRE principles. It is important to examine the relationship between consent, collaboration, care and trust in more detail, and how reflexivity and

exnovation are achieved within large, multidisciplinary settings. It would also be useful to compare the application of VRE across different AMU setting to develop a better understanding of the parameters of business and complexity in this setting, and to also consider its application across other complex and busy settings within and beyond healthcare. Finally, given the vulnerability of patients within the AMU settings, future studies should also consider the application of VRE for improving the quality and safety of patient care, and the practical and ethical considerations necessary to achieve this.

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