COVID 19 and Teams in the Virtual Space

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Abstract

Covid 19 brought on multiple changes in practice, including in teams training and teams functional work. As such, over the last 2 years, much "overhaul" and changes have taken place in this arena. These have now become integrated into the new educational and training norms of many institutions and academic centers. As quickly as Covid 19 struck, so too was the time we had to adapt and implement many of the initiatives related to teams training and performance. The runway was very short.

Virtual teams (VT) in the context of this paper, refer to groups of healthcare professionals who meet remotely across temporal or geographical boundaries, with a diverse spectrum of knowledge and skills, who are focused to accomplish specific tasks.

VT is characterized by dimensional dispersions from traditional teams and is dependent on technology. The team members are decentralized but have a common virtual platform for their training, discussions and sharing of information. VT can today utilize a variety of platforms to connect and these have now become more readily available.

This paper discusses the following, pertaining to teams in the virtual space:

1. *Technology and hardware requirements*
2. *Issues related to communications*
3. *How power distance and uncertainty avoidance affect virtual teams' function and performance*
4. *The importance of situational awareness and challenges in execution in the virtual space, as well as*
5. *Psychological safety in virtual teams*

Keywords*: virtual teams, culture, power distance, communications, psychological safety*

Introduction

In the context of today's healthcare, the practice of medicine is rarely a solo endeavor. Team-based learning (TBL), team-based practice, interprofessional education (IPE) and interprofessional collaborative practice (IPCP) represent the norm in the current state of institution practice. Inter-professional teams, with clearly defined roles and responsibilities, execute state-of-the-art management for patients. Other examples of team activities include targeted teams training (eg. training Intensive Care Unit teams, Emergency Department teams), and high-performance teams training (eg. trauma and disaster response teams). **(**1-4**)**

COVID 19 brought on multiple changes in practice, including how teams can meet, learn and train. Reduction in face-to-face training, safe distancing measures, heightened infection control measures as well as keeping to very small team sizes have now become standards of practice. **(**1, 5, 6**)** These necessitated a change in approach and mindset when it comes to teams training and team function. An "overhaul' became critical. "Overhaul", as defined by the Cambridge Dictionary, refers to a comprehensive restoration of an asset to an acceptable condition/ or state, by rebuilding or reshaping internal components; the purpose of which is to yield optimal performance and ensure durability. It could also mean changing a system, in order to make it more efficient and effective. **(7)** This 'overhaul' of teams has become integrated as part of the new educational norm in many institutions. This had to

be adopted very quickly, making the running in a period very short. As options, in view that face-to-face training became limited, many had to 'buy in', in order to continue with the programs they were delivering. This was certainly not easy, especially when remote and virtual training, is viewed as not being able to deliver the same 'touch, feel and sight' as most of us understand it. **(**1,3, 8, 9**)**

Therefore, to ensure teams training is able to continue during this pandemic, a variety of new ideas, platforms, hardware as well as educational approaches are being implemented and tested. In particular, virtual teams were highly utilized in teams-based training such as simulation (ie. computer-based or virtual simulation) as well as in the provision of team-based interprofessional care delivery (utilizing the principles of interprofessional collaborative practice), amongst other uses. **(**4, 10-13**)** In the process of doing these, multiple needs and challenges have been realized.

Virtual Teams

A team refers to a group of 2 or more persons coming together, each with a specific task or skill that requires coordination of information and activities to achieve some common objectives. **(**3**)** Virtual teams (VT) in our context, refers to groups of healthcare professionals who meet remotely across temporal or geographical boundaries, with a diverse spectrum of knowledge and skills, who are focused to accomplish specific tasks. VT is characterized by dimensional dispersions from traditional teams and is dependent on technology. The team members are decentralized but have a common virtual platform for their training, discussions and sharing of information. VT can utilize a variety of platforms to connect. These include using telephonic communications, email, text messages, instant messaging, collaborative workspaces and video-conferencing. **(**1,5,6**)**

In the context of training during the pandemic, the team members may also be from the same institution. In view of the need to maintain safe distancing, hygiene measures and prevent crowding, VT has sprouted to serve a variety of goals. VT experienced exponential growth during COVID 19 as people found it hard to meet up, travel from place to place due to the lock-downs and restrictions imposed, but still had the need to share information and work together. **(**1,5, 14**)**

With face-to-face (F2F) teams, members are usually together in the same room or location, in close proximity to each other, can see and hear each other and practice interaction and communications in the way we have all been familiar with. With VT whereby members are separated physically, there are more complex dynamics at work. The frequency of interaction may not be as often, the breadth and depth of discussions and interaction too may not reach the same level as F2F work. Responses and feedback may not be as fast and there is a different level of visual and audio contact. Virtual communications too may pose issues such as distortions, miscommunications, misinterpretations, inability to listen to the full extent of conversations and instructions for a variety of reasons and many other challenges. As such the satisfaction levels of VT members may be reduced and their level of

cohesion or bonding may not be as high, as we can expect. It is also dependent on other factors such as, whether the VT is comprise of members who have worked with each other, or whether they are a fresh, new team coming together. (1,3,5, 15)

Some of the other challenges of VTs besides communications include the process of remote task management, diminished focus and accountability, reduced productivity with all the preparation time and delays in performance of certain activities, lower level of morale and psychological safety and even concerns about security and confidentiality. One important area pertaining to VT is that of virtual engagement. Many have found this challenging and not as easy to achieve as in F2F teaching, training and work. To enhance virtual engagements, tips such as keeping our videos on (especially when talking), closing other windows which are not relevant to ensure full concentration and active participation, allowing one person to talk at a time, respecting others' views, listening when others are sharing and being non-judgmental. Sometimes, disagreement can be an opportunity to learn and grow as it can stretch the minds and thinking process of members to think outside of the box and be more creative. Team members should be conscious about the energy they bring into the virtual room and how this can affect other members. Issues on privacy and confidentiality of the sharing should also be addressed. This is usually done in the pre-briefing session. This will help keep members at ease, as they understand the processes involved and can focus and be more engaged. (6,15, 16)

Technology and Hardware

Covid 19 has provided the impetus to grow technology and IT (information technology) as applied to Medicine. Many new courses and training related to this have been provided to healthcare staff to enhance and deepen their understanding as well as to get their buy-in and commitment to technology adoption. Today, much more healthcare staff are tech-savvy, utilize technology to execute their training and consultations on a daily basis and are even requesting more, in order to facilitate and streamline work processes and educational activities. Teams training and teams-related courses are now conducted virtually or via hybrid means (combination of a face-to-face small group session with e-learning, online session, or virtual courses). Computer-based simulation is one widely used platform for this. Another example would be the provision of inter-professional teams teleconsultation for patients who have more complex problems with high levels of needs. (8,9,16, 17) In planning technology adoption for a department or organization, investments in physical and non-physical infrastructure become important. (Table 1) This must come with adequate planning and foresight. With procurement, the cost will increase and must be projected in the budget. The cost includes start-up cost as well as subsequent maintenance and sustainability costs. Host departments and institutions will have to work closely with their appointed vendors for the medium to long term. Good quality hardware/ computers, stable internet or wifi (wireless fidelity: internet connection that is shared across multiple devices in a department via

wireless router) access and sufficiently large screens are some examples of the fundamental initial requirements. A good quality microphone for voice clarity is essential in order for instructions to be understood. Otherwise, misinterpretation, misunderstanding and even miscommunications can happen frequently. When using platforms such as Zoom or Webex, virtual backgrounds are often chosen as these may help maintain some level of privacy especially for those logging in from shared offices or from their own homes. **(**18, 19**)** From the pedagogical perspective, it will be very useful to include educational subject matter experts from the planning stages. Educational principles, especially for teaching institutions must be planned early. Factors such as levels of interactivity, training usage, feedback and rigorous evaluation, a load of online and e-learning are all important considerations. Some institutions have set up a working committee with lead champions and mentors to assist with the spread of awareness, knowledge and skills, which is crucial especially in the initial phases of adoption. (Table 1)

Physical Infrastructure	Non-Physical Infrastructure
Connectivity to internet/ Wi-Fi: Internet separation in some institution, cybersecurity concerns must be addressed	Administrative support
Repositories	Protected time for faculty
Delivery platforms	Champion/ leadership or lead persons
Server for hosting applications and systems	Coordination: by person or team
Physical space for hardware	Technical support
Sufficient accounts and licenses as well as their approval processes	Champions to conduct "Train the trainers:" programme

Table 1: Factors to consider in adopting technology

As healthcare-related information may be shared, participants must adhere to PDPA (Personal Data Protection Act which sets the baseline standards for personal protection of data in Singapore) or other similar guidelines of their institution or country. **(**20**)** At the same time, people using these virtual platforms must be familiar with functions such as "chat", "raise your hand", "share screen or video", "Question and Answer function" and audio adjustments. Understanding all these are essential to streamline teams' training and to ensure sessions are productive and achieve the desired outcomes. With such increased utilization of these services, there is an urgent need to understand the issue of cybersecurity. At the SingHealth cluster in Singapore, it is compulsory for all staff to go through a cybersecurity module in the form of e-learning, followed by an online quiz. A 100% pass score is needed

to obtain certification. There are also broader frameworks by the Ministry of Health to help guide users of telehealth services.

In a recent focused group discussion conducted with our facilitator/ faculty, some of the technical challenges they faced included: gaining more online team training confidence, enhancing familiarity with all the online tools that can be used and integrating them appropriately during the conduct of the training session, how to make efficient use of these tools, how to record and stream videos and also how to measure teams' learning and performance.

Communications

Communication is central to team performance and function. Communications in the virtual space require more effort to ensure clarity in the explicit exchange of information. Well-coordinated communications techniques and approaches will help teams accomplish their tasks more efficiently. Good and effective communications can impact the cohesion of VT. **(**5,14**)** When teams meet during F2F sessions, besides the tasks related and technical aspects of communications, they may have non-task-based conversations. They may spend some time with "social" conversations and catching up with colleagues. The natural opportunity to do this is reduced significantly with VT and computer-based meetings. **(**13, 16, 17**)** The dynamics of intra-team interaction (with its coordination, courtesy, respect and pacing to ensure clarity) can colour the experience of the VT as well as shape their learning process.

Showing presence and active participation during virtual teams training is just as crucial as when it is conducted in a face-to-face fashion. Participants have to speak up clearly and slowly, enunciate the words with clarity and be alert of changes. This may seem quite similar to what has been done before. However, virtually, these aspects of communications can be more challenging. If the virtual teams comprise of cross-cultural participants, it becomes even more important to speak and express oneself clearly, slowly and at the appropriate pace. Pronunciation of words and phrases with cross-cultural teams must also be emphasized. **(**15, 21-23**)** Using a common language and not having side conversations with colloquial terminology is important in order to ensure every team member feels included. In virtual settings, verbal communications tend to play a bigger role in view that nonverbal communications may not be so readily obvious or observed, in such circumstances.

During the training of VT, keeping the video "on" is also helpful as this is the only platform for members to "see" each other. Even as deciphering non-verbal communications cues can be limited in such situations, the ability to see the person one is communicating with becomes even more important. It is a way to show presence virtually. However, some may feel a sense of discomfort with the videos focused on them. They may become self-conscious and experience "video freeze", something similar to "stage fright", with performance anxiety and 'loss of words'. Others may become more 'guarded' in expression

and communications. For organizers of these teams' training, consent for video recording should be taken just as informed consent is taken in face-to-face simulation training. Facilitators and faculty conducting these sessions must be cognizant of the importance of nonverbal communications in virtual training. They need to be observant about the tone of voice, emotional nuances and depiction, eye contact and attention to camera focus and angle. Facial cues, hand signals and expressions are harder to discern. Also, it can be tiring to the eyes to have the direct camera focus throughout the whole session.

Communications for VT also take place through their keyboards, when they type in the 'chat' function. Those using this may have to coordinate the timing of their messages to align when certain points are being discussed. Those less savvy with typing may experience a delayed response to their comments. At times, a bigger number of responses may come in, the so-called "waterfall effect" which might make some feel overwhelmed. On-screen, proper appreciation or validation can be made more obvious by using a verbal comment or some may prefer to type constructive comments in the 'chat' function. As there will be a few activities ongoing, facilitators must be able to take charge, keep the session systematic and organized. Those who have more practice or conduct dry runs will get more experience and they will then be able to fine-tune their approaches accordingly. In virtual sessions, timers can be used in various forms such as the 'real time' computer time, virtual clock or audio alarms may be preset to serve as reminders. Overall, keeping the online actions streamlined and simple, is helpful. Simplification helps participants keep to the rules of order, reduce clutter and learn/ retain information better.

Addressing these multiple issues is important in the pre-brief to create awareness, understanding and alignment. Pre-briefing for virtual teams may thus take a longer time in order to ensure comprehensive coverage of all instructions. **(**10, 11-13**)** (Table 2) This is very crucial to set the stage especially if the participants are new to virtual training. The same goes for debriefing as well. As a result, in planning these sessions, time factor considerations must be given. Some facilitators may also prefer to use the micro-debriefing technique rather than the usual terminal debriefing with virtual teams. This enables the handling of more manageable bite-size inputs as the team proceeds with the whole scenario. **(**11, 24-27**)**

During our focused group discussion with faculty, one of the top challenges faced in training teams virtually is to attain optimal engagement of learners and team members. There is really no one best way of engagement. It is about the integration of all the positive factors, customized for individual teams. This remains an area that is still evolving, as we strive to connect better with learners online or virtually. **(**5, 23 28**)**

Pre-briefing Pointers by Faculty
1. Assumption that everyone has come to learn and enhance their knowledge and skills
2. Familiarization with team members and their background, especially new ones. This helps with assigning roles as well.
3. Pre-brief sharing and information can help VT in conceptualizing team identity
4. Emphasize the need to have open, respectful conversations
5. Set speaking guidelines. One person to speak at a time, whilst others listen.
6. To practice being non judgmental
7. Stress the importance of clarity in conversations, to speak slowly, with the appropriate choice of words
8. Encourage active participation
9. Explain use of video, video-recording and microphone for learning purposes
10. Encourage flexibility and respect at all times

Table 2: Points to Cover During Pre-briefing for Virtual Teams

Situational Awareness in VT

Situational awareness (SA), an important component of decision making, is a combination of cognition, communications and coordination capabilities. It is the awareness of all the on-goings in the situation or task the team is involved in. For the medical team, this involves not just the progress of the patient they are taking care of, but also the workings and wellness of the team members in the execution of their roles. It is important for leaders of teams to have this ability. The team SA is usually proportional to the level of experience of members. For VT, maintaining SA can be more challenging. [1, 28, 29] In the virtual space, it is often described as the "workspace awareness" capability. VT leaders and members will have to use the power of their observation skills to look for gaze directions, visual cues, auditory cues and other signs. Good SA comes with awareness, focus and attention, against the background of adequate training in one's discipline. [30]

Psychological Safety

Psychological safety (PS) in VT will ensure the members are comfortable in their 'work and training spaces'. This means that what they say and do will not be used against them, as long there is no malicious intent. Members will also not be embarrassed or ridiculed for their comments. In view that both verbal and non-verbal communications are more challenging in these settings, it requires faculty and facilitators to have heightened alert and astuteness in their observations. The different elements of PS comprise of inclusivity of all persons, ensuring learning takes place, the ability for every member to contribute and feel comfortable enough to pose any new ideas or challenges to the team. **(**31-33**)** Faculty should be quick to pick up emotional changes and manifestations, lack of participation or exclusion of any person. Their instructions and facilitation method can certainly help draw out contributions from those who are 'camera shy', less vocal, self-conscious, or have performance anxiety. Using techniques such as advocacy inquiry for questioning can be less domineering, more neutral and thus, generate more open sharing and reflection by participants. This is quite similar to face-to-face training but may need emphasizing in the virtual space. It can also be more challenging for faculty to demonstrate empathy virtually, but practice with the appropriate tone of voice, choice of words and appropriate gaze and facial expressions can certainly help. Using virtual breakout rooms can also be helpful for debriefing in smaller groups. Participants may be more comfortable in sharing with smaller groups. Interruptions can usually be managed better in these groups. However, there will not be any choice of seating positions in view everyone will just be "side by side, on the computer screen.

Power Distance, Uncertainty Avoidance and Virtual Teams

Power is fundamental to all relationships and societies. Power Distance (PD) refers to the extent to which team/ organization members accept that power is unequally distributed. PD influences performance management, including the performance of VT. Societies have been described as having either low or high PD. (Table 3) **(**34, 35**)** It can affect the well-being of team members, their levels of satisfaction, comfort level in speaking up or sharing as well as their attitude in team performance. PD affects both leadership as well as VT members. PD is closely interlinked with PS. PD is a consideration in F2F as well as VT teams and their work. Faculty and facilitators for VT training should address this if they feel a need to, in order to create awareness and help optimize members' contributions. However, these values and feelings can be deeply ingrained/ culturally driven such that they may not be so easily eradicated. Personally, I look for some innovative ways to help VT members from large PD societies share and contribute. An example would be to ask a directed question in a non-judgmental way to a member, whereby he would then have to share and answer. This must be done in a sensitive way in order not to offend the person or others. Thus, reading up a little and understanding the cultural background of your learners, especially with cross-cultural VT is helpful. **(**36**)**

Small Power Distance	Large Power Distance
More learner or member-centred education	More teacher or leader-centred education
Relatively flat in terms of organization	Hierarchy is prominent and practiced with accepted inequality in VT
VT members expect to be consulted and discussed with in a collaborative fashion	VT members expect to be told what and how to do certain tasks
More decentralization of roles and duties	Centralization of the decision making process
Status not an important consideration	Very strong command structure exist and is understood by VT
Participation, sharing and contributions are encouraged. More free flow of ideas	VT members awareness of structure and hierarchy may prevent spontaneous and open sharing
Leadership of VT easily accessible and approachable	In view of greater power inequality which is pronounced, there is less individualism

Table 3: Differences between Small and Large Power Distance Societies

When working with teams from different backgrounds and cultural norms, Uncertainty Avoidance (UA) is also another consideration. This refers to the VT's tolerance for ambiguity. It is about how members feel in unstructured situations or when things differ from the routine. These can also be seen as the unique and novel situations or the 'curve-ball" which the VT can encounter. It has been noted that VT practicing more eastern-type cultures, as well as those from some European countries, tend to have strong UA practices. These teams would demonstrate more emotions and a greater amount of nervous energy. Weak UA means VT is more accepting of these novel and unique situations. These teams tend to be able to accept or tolerate more changes and diversities. Societies or groups with weak UA tend to accept uncertainties in life and at work, have lower levels of stress and better self-control. They tend to be curious and accepting of ambiguity and chaos. For those from strong UA cultures, they tend to face a higher level of stress and anxiety. They are more intolerant of deviants and deviations from routines and norms and they usually want to have structure and clarity in approaching issues and situations. **(**37**)**

Just like PD, UA is also useful to understand in managing VT as well as F2F teams. With VT, there are definitely new elements some may not be used to such as videotaping performance, audio-recording conversations and speaking at a slower pace. These may create some anxieties amongst team members, thus making it essential to address these in the pre-brief.

Conclusion

Teams Training in the New Norm

Before the pandemic, onsite and face-to-face teams training flourished in the way we had understood it before. With the pandemic, these sessions had to be reduced, meet numbers and ratio guidelines to avoid overcrowding and maintain safe distancing, be conducted with the appropriate PPE (personal protective equipment) as well as practice the essential wipe-down and cleaning after every session. **(**38**)**

Virtual training came about due to the necessity to have some platforms to continue with training and education. It came upon us quickly, requiring almost immediate adoption and buy-in. It has also progressed and evolved over the two years of the pandemic. People continue to build upon their experiences and are getting more familiar with virtual training. VT must be aware that we are all "situated learners", ie. what we believe we know is dependent on our training, social position and experiences. Thus, what we feel and perceive will be different from others. A broad mindset will affect our approach to training and in real life as well. We must all avoid just taking on a "singular story", as there may be more than meets the eye. Multiple truths and facts may have to be uncovered and thus, managed. Whether in F2F or virtual spaces, cultural humility is important and this goes beyond just cultural competence. It is about always learning, asking to understand, reflecting and listening. **(**38, 39**)**

VT are getting more nimble, integrating various online platforms to ensure the best possible experience for learners and teams. This has become the new norm. (Fig 1) It is the result of the 'overhaul', review and refinement of teams training as we had understood it before, and now modifying, customizing and tailoring the principles to meet our current day demands and needs. It has also required mindset change, commitment, and the desire for alignment. With all this, it is everyone's wish to attain high-performance VT, just as we have high-performance F2F teams. Essentially the high-performance teams comprise experienced and stable team members, with a high level of initiative, motivation to leverage their knowledge and skills to deliver results. VT must have the right mindset as well as adaptive behavior, accountability and shared mental working models. High impact VT pays attention to details, has razor-sharp focus and can deliver with the provision of the right tools, environment and technology. (Fig 1) At the end of the day, team learning and growth are the desired outcomes, which must be achieved.
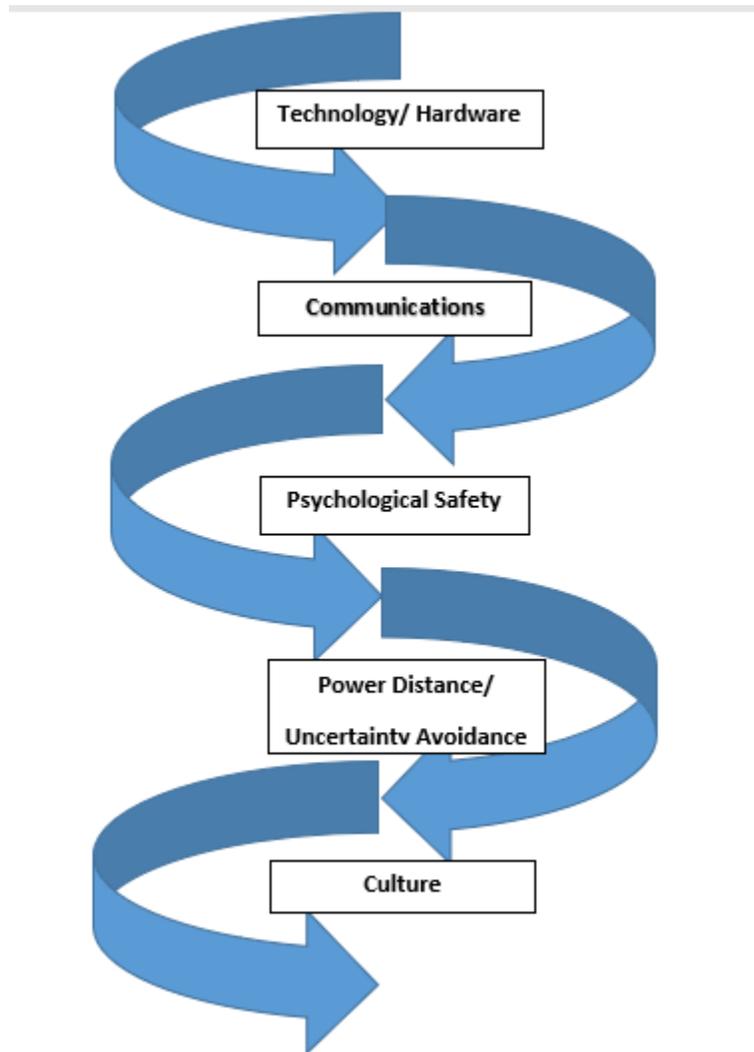
Figure 1: Elements to Consider in Training and Running Virtual Teams

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