

# Importance of Multi-disciplinary Tumor Boards during the COVID-19 Global Pandemic in a Resource Constrained Country

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## Abstract

**Background:** Multidisciplinary tumor boards (MDTB) are an integral part of cancer management. However, owing to COVID 19 global pandemic it becomes a challenge to have a MDTBs maintaining the social distance norms. **Objectives:** To assess the technical challenges faced during a virtual tumor board (VTB) discussion Advantages and Disadvantages of a VTBs. **Methods:** Technical support for various group meetings taking place virtually were considered. Various trials which have assessed the technical difficulties for conducting such a meeting were assessed. The advantages and disadvantages for using various platforms of social media for such a virtual meeting were assessed and various feedbacks and reviews were taken into consideration. **Results:** VTBs can be implemented either by a video conferencing or web based conferencing. High speed internet connections of 4 mbps for a 30fps at 4k monitor would be required for smooth lag free interaction. The processors should have a minimum of 2 GB of RAM with quad core processor. Platforms which offer the ability for digital signatures are of paramount importance. Having a VTBs during a global pandemic is of paramount importance for a cancer patient. **Conclusion:** VTBs are very important for management of cancer patients during a global pandemic. We in our paper have tried to summarize the technical support need for such a platform and also have tried to discuss the advantages and disadvantages of such a platform. We would also like to conclude that setting up such a virtual platform is not technically challenging and can be implemented in smaller centers even through a mobile phone connection. VTBs should be implemented in all cancer centers during a pandemic when in person meetings are a challenge and a health risk.

**Keywords:** Tumor board- COVID 19- Virtual Tumor Board- Global Pandemic- Internet speeds for Virtual tumor board

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## Introduction

As on 28<sup>th</sup> April 2020, the total number of patients infected with the COVID-19 (Novel Corona Virus 2019) caused by the SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) virus stands at 3 million worldwide, with 211,000 deaths [1]. In India the total of infected cases are 30,000 with 934 deaths [2]. In view of the present situation India announced a nationwide lockdown on 24<sup>th</sup> March 2020 to prevent the human spread of the virus [3]. Owing to the present scenario there has been lot of changes and adaptations to

cater to the needs of people in various sectors of the society. Health care sector also had to undergo certain changes to adhere to the lockdown situation and as well cater to the needs of our patients. In many Oncology centres elective surgeries have been suspended, chemotherapy has been delayed and method of Radiotherapy delivery has also been changed. In this article we would like to suggest few changes in the manner of conducting the Multidisciplinary Tumour Boards (MDTBs) that can be introduced to tide over the challenges presented in patient care.

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Table 1. Team Members of a Multidisciplinary Tumor Board (MDTB)

1)	Oncopathologist
2)	Radiologist
3)	Oncosurgeon
4)	Radiation Oncologist
5)	Medical Oncologist
6)	Pediatric Oncologist
7)	Palliative Care Clinicians
8)	Nuclear Medicine Clinician
May also involve other Specialities	
1)	Ear Nose Throat Specialists
2)	Oral Maxillo Facial Surgeons
3)	Urologists
4)	GastroEnterologist- Surgical/Medical
5)	Obstetrics & Gynaecologists
6)	Neuro Surgeons
7)	General Surgery Department

### *Importance of Multidisciplinary Tumour Board*

Providing cancer care is a very complex process and often involves specialists from various departments of Oncology (Table 1) namely Onco-pathology, Radiology, Surgical Oncology, Radiation Oncology, Medical oncology, Pediatric and Haemato-Oncology and Palliative care specialists [4]. It also includes specialists from Departments of General Surgery, Ear Nose & Throat (ENT), Neurosurgery, Oromaxillofacial surgery (OMFS), Obstetrics and Gynecology (OBG), Urology, Gastro-Enterology & Nuclear Medicine. The role of the MDTB is to determine that all patients are given the available care based on the standard guidelines & currently available literature. There have been several reports published in the literature which suggest that discussing a case in a MDTB has changed the management of a disease from 20%-50% of the cases [5].

The MDTBs are usually conducted based on the site [5]. It is of prime most importance that each and every patient once diagnosed with a cancer should be discussed in a tumour board before initiation of any treatment [6]. This has known to be influence the overall survival rates [7]. Hence, MDTB should be an integral part of all cancer related managements.

### *Routine MDTBs workflow (Figure 1)*

Conventionally a tumour board is conducted in a seminar hall with all of the aforementioned departments involved and being physically present. The department where the patient initially presents usually investigates the patient in detail. Having completed the tumour form, it will then be presented for discussion in the respective MDTB. The patient would be examined before presenting in the MDTBs to confirm the clinical examination finding. The pathologists will give their opinion on the histopathological report, the radiologist will discuss the radiological imaging (CT/MRI). After analysing the general condition of the patient and considering all

the other risk factors a treatment plan will be proposed by a group of experts. This plan will then be documented on the tumour board form which then will be signed by the experts present at the time of treatment decision [8].

### *Adaptations suggested during the COVID-19 Pandemic*

The workflow in most centres have been hampered due to the ongoing pandemic. Many centres have adapted a policy wherein the work force has been divided into batches of 2's or 3's. This is to ensure that even if one batch gets exposed to a COVID-19 case the unexposed batch would then take over the patient care. With this in mind, it would be impossible for each and every one to be physically present in a MDTBs And with the proposed lockdown and restrictions on social gathering, it would be impossible to get all the experts at one location.

So here are the few adaptations suggested for the smooth functioning of oncology care and yet implementing the standard oncological care.

- Implementation of virtual MDTB (v-MDTB).
- Use of telephonic conversations / Social Media Chat apps to clear doubts
- Use of digital signatures to validate the decisions taken during tumour boards.
- Recording of each session of v-MDTB.
- Auditing the recorded session to ensure quality of patient care.

### *Implementation of Virtual MDTBs*

There are two different ways of establishing the Virtual MDTBs, that is

1. Video conferencing
2. Web conferencing [9].

Kunkler et al in their study established that online cancer multi-disciplinary meetings have similar clinical effectiveness to standard 'in-person'[10]. The Indian National Cancer Grid (NCG) uses an online platform to discuss Virtual Tumour Board Cases (VTB).

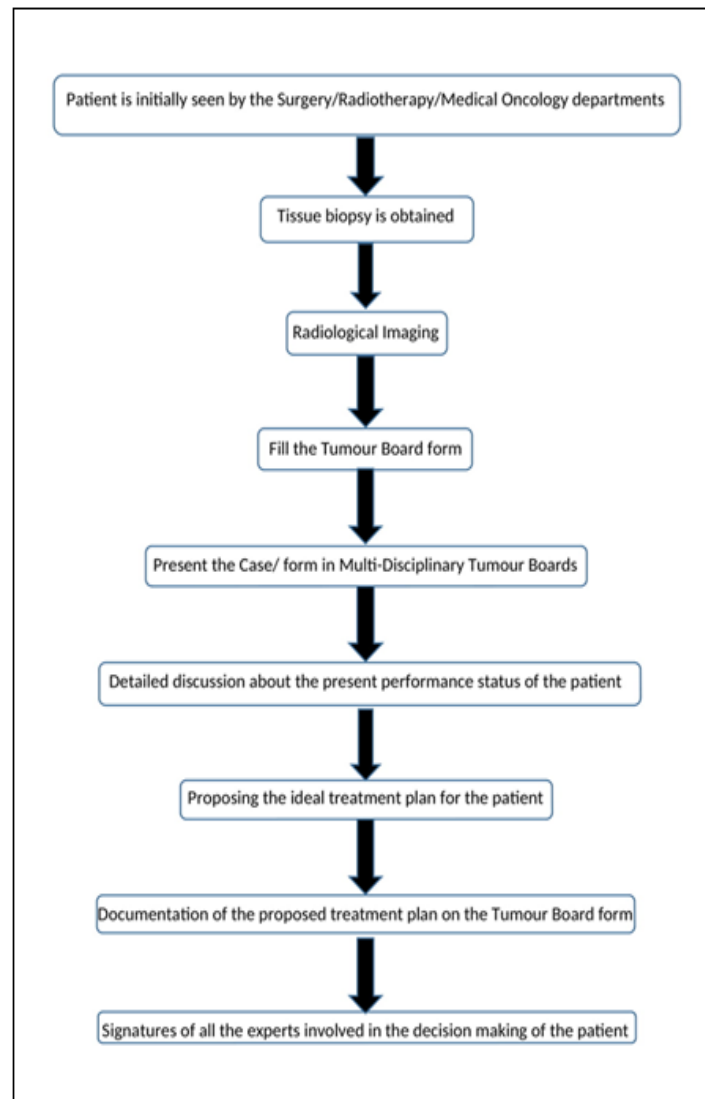


Figure 1. Shows the Workflow of a MDTBs

There are various requirements which are needed for the implementation of v-MDTBs [11]:

a) High Speed Internet Connection of about 1 Mbps is sufficient for 15 fps at 720p resolution, while 30 fps at 4K will require closer to 4 Mbps.

b) High resolution TV monitor - at least 1280x720 resolution (720p) and a 720p camera.

c) Minimum 2 GB of RAM and a quad-core processor.

d) 1080p Television screen/ 720 p Laptop/Desktop screen/ 720 p Mobile LCD/LED screen.

e) Built in Microphone.

f) Mobile phones with a ram of at least 2 GB running the latest versions of Android/IOS

g) Web software's which have the following capabilities

i. Able to have multiple members in one window.

ii. Ability to record every session.

iii. Ability to share screen by the user (for radiologists).

There are various online software's which offer such services

a) Google Hangouts

b) Zoom Video Conferencing software

c) Microsoft Teams software.

d) Facetime for Apple products.

e) Slack Web conferencing software.

f) Gotomeeting applications.

g) Amazon Chime

#### *Advantages of v-MDTB*

a) Access to all the in house experts during a COVID-19 Pandemic.

b) Follows the norms of social distancing concerned experts can be at their comfort of their home and give their opinions.

c) Non-compromised patient care even during a pandemic.

d) Readily available technology to look for evidence in case there is a difference of opinion between the experts.

e) Can be used as a platform to communicate between two different centres located at different parts of a City/ State/ and even another country.

f) Environment friendly- avoids usage of paper in the hospitals.

### Disadvantages of Virtual MDTBs

- a) Lack of physician to patient interaction hence examination points cannot be verified.
- b) Time consuming- to set up the entire online systems, to get acquainted to the newer technology
- c) Resource intensive (High speed internet)
- d) Miscommunication due to technological error
- e) Server issues and technical glitches

In conclusion, MDTB's are a very essential component of decision making in cancer care. Owing to the current scenario of COVID-19 plaguing the entire world resulting in nationwide lockdown and social distancing, patient suffering from cancer needn't despair. Their scenarios maybe discussed virtually amongst the experts with the help of latest multimedia. However, v-MDTB's have their own limitations which can be thoughtfully overcome. With the help of technology, we can ensure that every patient be discussed in a v-MDTBs and yet follow the norms of social distancing.

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