OTN Goes Mobile
Virtual Care & the Wireless Network

OTN has developed applications that are suitable for both wired and wireless networks. The exciting benefits of using wireless networks is that virtual health care through OTN can be used more broadly. Today, not only can health care practitioners connect with their peers and patients through traditional room-based videoconferencing systems, but through their personal computers and mobile devices, helping patients from their hospital bed, in their community and even right in the comfort of their homes.

Without the internet, these virtual care solutions would simply not exist. Today, the most common ways you can connect to the internet are through the following networks.

Wired Network

A wired network, or LAN (local-area network), connects your device(s) to an internet hub or router using an ethernet cable. This type of connection offers very little mobility as its signal only broadcasts to the device it's connected to. It is, however, extremely reliable with faster speeds and fewer network interferences.

Wireless Network (Wi-Fi)

A wireless network, or WLAN (wireless local-area network), requires a wireless router be set up to service a specific location. The router broadcasts a signal to a small area, such as a home or office. Any device(s) in the signal's range can connect to this network, providing more mobility than a wired connection. The connection may, however, be subject to signal interference depending on the surrounding environment.

Cellular Data

Cellular data is available through your mobile carrier and offers connectivity across large areas. Its signal broadcasts almost everywhere, making it the most mobile internet connection available. Most smartphones offer the ability to connect to a wireless or data connection; however, you must sign-up for a data plan with your cellular provider. This can be costly depending on how much data you consume. This connection is also the most susceptible to outside interference.

Ontario Health
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Your Questions Answered

A quality internet connection is integral to virtual care. The quality of your wireless connection can vary depending on your location, network provider, and your device's bandwidth. To help ensure you have a strong wireless connection before using OTN's mobile video solutions, we've answered some of the most frequently asked questions about virtual care and wireless connectivity.

What might negatively affect my videoconferencing experience?

There are two main factors that can affect your videoconference's performance:

1. The stability of your network connection
2. The strength of your bandwidth (a minimum 1 Mbps is recommended)*

*What is bandwidth?

The term bandwidth refers to the speed that you can send data to (download) or receive data from (upload) your device.

While OTN's mobile app, OTNconnect, performs well at an upload speed of 512 Kbps, we recommend planning for bandwidth to support an HD experience (which starts around 768 Kbps).

You can test your bandwidth. Open a browser and go to speedsmart.net, fast.com, or speedtest.net.

Is it common for network signal strength to vary in different locations and environments?

Yes! OTN's web-based videoconferencing service relies on public network carriers and the strength of their signal to successfully support virtual care; however, signal strength can fluctuate in different environments.

Many of these issues can be mitigated by testing your wireless connection before making a call.

What causes an unstable network connection?

There are various factors that can contribute to an unstable wireless connection including, but not limited to:

- Downloading, streaming video, or running other programs on your device while videoconferencing can cause video and audio issues
- Signal strength is degraded as distance from the cell tower or repeater increases
- Certain portable types of antenna may reduce network quality; for example, wireless "sticks" or cell phone "hot spots
- Presence of other devices such as microwaves may interfere
- Buildings, materials, hills and trees might interfere with cellular signals

How do I know I have the right internet connection?

Before you join your first videoconference, it is a good idea to test your internet connection. A test can help you determine the quality of your device's connection and how well it will work for videoconferencing. If the test results are not within the recommended range, there might be connection issues which can cause video signals to flicker or introduce clicks or other undesired effects in audio signals.

You can test your bandwidth. Open a browser and go to speedsmart.net, fast.com, or speedtest.net.

Are there other ways to connect to the internet if my home or office Wi-Fi is unavailable or unstable?

Yes, you can try one of the following options:

1. 4G Internet Stick

   The right internet stick can provide a signal strong and stable enough for videoconferencing but, like most wireless connections, it may be impacted by environmental factors as previously listed.

2. Cellular Data "Mobile Hotspot"

   Many smartphones allow you to tether your cellular data to another device (e.g. personal computer) which provides a quality internet connection. This is often referred to as a "mobile hotspot" which can be set up in the "Settings" feature on your smartphone.

It's important to keep videoconferencing with a mobile hotspot to a minimum as it will consume your cellular data. It's also best to know the details of your data plan (i.e. how much data you're granted before additional costs apply) before considering this as an option.

How much data will I use if I connect through my cellular data plan?

On average, videoconferencing uses the following bandwidth for a 15-minute call:
- Person-to-person: 400 - 500 MB
- Multi-point: 1000 MB
- Person to room-based system over Wi-Fi: 75 - 100 MB

These are estimates based on averages and may vary with each call. Factors affecting data usage (and therefore reducing video quality) can include:

- Screen sharing during the videoconference (e.g., PowerPoint slides or other content)
- Other applications or services using the same Internet connection
  (e.g., email, peer-to-peer networking).

How can I improve the quality of my wireless connection?

Plug in! If possible, try hard wiring your device directly to your network. If this isn't possible here are some ways to increase your wireless connectivity:
- You can test your bandwidth. Open a browser and go to speedsmart.net, fast.com, or speedtest.net.
- Do not download, stream video, or have other programs running in the background on your device during a videoconference
- Turn off, or distance yourself from, other devices or appliances around you that may diminish your wireless signal strength such as a microwave, cordless phone, or wireless camera
- Move closer to your internet router
- Try moving to another location with a stronger signal or less interference
- Reboot your router or call your internet supplier