

CHAPTER ONE

Home video monitoring

A teen with ADHD and autism may alleviate boredom by pestering a sibling and the confrontation may escalate. A seizure might produce a head injury and extended unconsciousness. Kitchen hygiene neglect may be causing roommate or landlord problems. An Explorer might be having trouble getting out the door on time for work or school.

There are many reasons a Guide would like to be able to peek around the corner and help. That's now possible with simple to install and access video monitoring solutions. These products have more requirements than what we've discussed so far though; I'll go over the requirements first, then review how they work and the Google Nest Cam example.

Home video monitoring started out as a costly security service, similar to the video cameras in retail stores, banks and gas stations. Later home security products emerged, but they were difficult to install and manage. They were affordable though, and tech enthusiasts began to use them for infant and elder monitoring as well as home security. New features were added such as two way conversation; something that's much more important for elder care than for home security.

These products have become much easier to use and operate over the past few years, particularly when they were integrated with smartphones. Google's Nest Cam, formerly known as DropCam, is a good example. That's the product my family has used and it's what I'll describe below. First, however, I'll go over the requirements for using a Nest Cam.

A Nest Cam currently needs home WiFi and a home broadband Internet connection. That's a big deal; many Explorers don't have home broadband; they only have their smartphone mobile carrier service. There's no technical reason a Nest Cam couldn't use a mobile carrier ("cellular") service instead of WiFi and home broadband but manufacturers haven't done that ... yet.

If your Explorer doesn't have home WiFi and Internet broadband service you can't use a Nest Cam or similar consumer-friendly products. In that case you can skip this chapter — at least until Google or another vendor starts selling a mobile-network solution. That's sure to come, but it's not here yet.

The Google Nest Cam, formerly known as a “DropCam”, is the most popular device for home video monitoring, including home security monitoring. I’ll use the Nest Cam to describe how home video monitoring works for the Nest Cam and similar devices.

The image below shows a Nest Cam in use. (It started life as a “DropCam”, but after software updates it’s basically a Nest Cam. I’ll refer to it as a Nest Cam.)



This particular device has a panoramic view of a living room. There’s a small white cord that provides (USB 5V) power to the Nest Cam. It also has a wireless (WiFi) connection to my home network. Through my home network it connects to Google’s (Nest Cam vendor) servers.

Most of the time it’s not doing anything, but I can use the Nest.app application on my iPhone or Android phone to connect to the those Google servers. I can then tell those Google servers to turn on video *and audio* streaming from the Nest Cam. The Nest Cam will then start sending video and audio to my smartphone or web browser. The audio will pickup loud noises, such as shouting, across the home. When the Nest Cam is actually streaming video a signal light may appear, but the light can be disabled in settings.

I can also use the Nest.app on my smartphone to send my voice to a small speaker in the Nest Cam. It's awkward walkie-talkie type audio, but it can be quite useful.

That's how on-demand ("realtime") video monitoring works. On-demand monitoring should work with any home WiFi and broadband connection.

In addition to on-demand video monitoring the Nest Cam and similar devices can also store video on an Internet based server. This uses more bandwidth and has an additional monthly cost. I describe the Nest Cam example below.

When you use a Google Nest Cam or similar devices the video has to leave your home to get to your smartphone app. In theory it could be intercepted along the way but that's technically challenging and a quality product will handle this problem.

There's a slightly greater risk that someone might take control of your Nest Cam. That would be difficult to do though; Google is quite good at managing security. As long as you use a high quality password and don't use it elsewhere it is unlikely even a determined cyber crook would be able to do this. (If you are the President of the United States, however, you probably shouldn't have a Nest Cam in your office.)

If you store video on the server there is an issue to be aware of. In the United States that video can be obtained through the courts.

Excluding court access to optional server stored recordings, the risk of a Google Nest Cam being hacked is quite low. The risk may be higher for other devices however.

There are several home video monitoring devices sold today, some are marketed for home security, others for elder-care, others for infant monitoring. This market is changing quickly, but the Google Nest Cam has been the leading option for several years. Whatever you evaluate for your Explorer you should compare it to the Nest Cam. When making those comparisons do think about the quality of the companion smartphone apps and vendor security and reliability.

Google's Nest Cam sells for \$200 per device, or 3 devices for \$500. That includes unlimited on-demand realtime video streaming for each device. There are less expensive devices, but the Nest Cam is a high quality product. The Nest Cam can also be transferred to a new user, you may find a deal on a used device or even borrow one.

A Guide uses a smartphone or a web browser like Chrome to enable and video the Nest Cam video stream or, if the feature is enabled, to view stored video history.

The purchase price doesn't include storing video on Nest's servers for later review. They call this "Nest Aware Video History". At the time of publication Nest charges \$10/month for access to the last 10 days of video (there's a 30 day option too, but few will need that). Nest Aware is a subscription service that auto-renews every month, but you can cancel at any time. You may, for example, want the video

history option for a time limited reason, so you can start a subscription and then cancel it. When you cancel a subscription Nest will remove your video history. Remember that streaming video to Nest will use a significant amount of network bandwidth; you may want to review that with your Explorer's broadband provider.

For the situations most of us are dealing with we don't need the stored video, we just need to be able to launch the Nest Cam app on our iPhone or Android or Chrome web browser and see what the camera shows. The Nest Cam has a speaker; the app lets us "speak" from the camera and see and hear responses. It's not suited to conversation, but it works well for saying "Stop That!". The smartphone software can be used with multiple Nest Cams.

The Nest Cam has a single power USB power cord. It can be mounted on a wall, but most users will place it on a convenient shelf. It's relatively easy to connect it to an encrypted home WiFi network. The standard Nest Cam configuration turns a red light on when in use, but the light can be disabled. If the video-active light is disabled there's no way to know if the Nest Cam is active or not.

As described earlier, when you connect to a Nest Cam from a smartphone it begins streaming video to a secure Google server and from there to your smartphone or computer (there's a web access option). You can see and hear what's happening at the camera location. Depending on what you're see you may disconnect, contact your Explorer by message, email or phone, or use the built-in speakers to deliver a suggestion.

For Explorers with life-threatening medical disorders home video monitoring may be a longterm aide. For this use the Nest Cam (or other) video-active light would be active. That is, the Explorer knows when they are on video. The Nest Cam may be setup in a kitchen or living room. This kind of use is very similar to using video monitoring for elderly parents.

For many other Explorers, however, video monitoring may be a temporary aide to independent living. An Explorer may become dependent on having a Guide nearby, when left alone they may become anxious, particularly anxious about meeting expected behavior standards. Anxiety can translate into problem behaviors, such as harassing siblings or arguing with roommates. In this case a home video monitor can be a transitional aide, a step between having a Guide at hand and going solo.

In this case the Nest Cam video on light may be either enabled or disabled; Guide and Explorer can experiment with both methods. A Guide may leave a home and observe remotely, then decrease observations and increase time away as both Guide and Explorer gain confidence. After initial use the monitor may be used very infrequently and eventually removed.

In another situation there might be a concern about what time of day an Explorer living on their own leaves for work or school. A guide might use the techniques in the Tracking Location chapter to check in this, but either an on-

demand, or more conveniently, a stored video record could help. Once the concern is managed the stored video feature can be discontinued or the camera can be removed. Stored video may also help with reviewing home visitors if there are concerns about exploitation of a vulnerable Explorer.

In many cases a Nest Cam or similar video monitor may be used for a limited time, you can remove your account information and another person can use it.