Back it Up!

A.   **Don't Cut Corners Here**: This is not an area where you want to be cheap, but there are ways to protect yourself and not spend a lot of money.

B.   **Backup Device/System Options**: We do NOT recommend that you rely solely on an Internet back up option. Instead, we recommend that your primary back up is on-site (either external hard drive(s) or network attached storage (see below)) and that you use an Internet option as a secondary backup. Here are a few suggestions:

      1.   **External Hard Drives**: There are external hard drives designed specifically as backup devices and this is our recommendation. They hold much more data than the REV drive described above (500 to 1,000 GB compared to 120 GB) and they are very inexpensive. The annoyance is that you have to unplug one of them and take it home with you every day (they need to be rotated so you always have one full backup offsite). Other than that, they're very fast and reliable. Look for at least 1 TB of storage and a 7,200 rpm drive. If your computer supports USB 3.0, Thunderbolt or FireWire, look for drives that will allow you to take advantage of the faster speeds those interfaces offer. There are many options.

      2.   **Network Attached Storage ("NAS")**: Without getting too technical, NAS is storage (usually an external hard drive) attached directly to your network rather than to an individual PC or server. The benefit is that all computers connected to the network can access the NAS regardless of which computers are on or off. Furthermore, higher-end NAS devices employ RAID (Redundant Array of Independent Disks). RAID is an configuration in which multiple hard drives are arranged so that data is stored across all of them simultaneously. Even though multiple drives are involved, your computer sees the RAID as a single drive letter on the network. RAID gives you better performance (surprisingly), capacity and reliability than a single large drive. There are a number of different "levels" of RAID, including RAID 1 (straight mirroring when two drives both containing the same data) and RAID 5 (Rotating Parity Array - all data is distributed across all drives and there are at least 3). For a good explanation of RAID and what the levels mean, see

http://tinyurl.com/mmqrf. The main drawback of a NAS device is that you cannot really take it off-site. However, it can contain multiple backups of your data and if RAID is employed in the device, it's extremely unlikely that you'll have a simultaneous crash of all of the drives contained inside the NAS.

3. **Internet Backup Options**: This is becoming more and more common as a ***secondary*** backup method. Some use it as a primary backup but we recommend against this because internet connections frequently go down.

- **Mozy Pro** - http://mozy.com/product/mozy/business

- **Mozy Home** - http://mozy.com/product/mozy/personal

- **CrashPlan** - https://www.code42.com/crashplan/

- **Carbonite** - https://www.carbonite.com/en/cloud-backup/personal-solutions/personal-plans/buy/

- **SOS Online Backup** - https://www.sosonlinebackup.com/

No matter what you do, you must get a backup system. It is not optional. Losing all of your data can cripple your practice and cause you to commit malpractice. The risk is simply not worth it.

C. **Recommendation Regarding Backup Hardware and Software**: If you just want to make sure your laptop or desktop is getting backed up, it's hard to beat Carbonite's Personal Plus plan for $99/year. Buy any external hard drive and Carbonite will back up your files to their secure cloud servers and make a full mirror of your internal hard drive on the external drive you connect at the same time. Further, it works in the background to make sure that everything is backed up and you don't have to remember to do anything.