



FIGURE 4.18

The FP180 portable easy ECG monitor is a signal-lead ECG for detecting atrial fibrillation and arrhythmias. (<http://www.favoriteplus.com/handheld-ecg-ekg-monitor.php>.)

4.5 Cardiovascular Diseases

In the general population, individuals with normal hearts have either very rapid or very slow heart rates, but extreme variation may be indicative of very serious cardiac disorders. In the following section, we will describe heart diseases that have been detected using ECG.

4.5.1 Arrhythmia

Cardiac arrhythmias are disturbances to the normal cardiac rhythm, which can vary in severity. According to the AHA,* arrhythmias occur when the

*<http://www.americanheart.org>

Other portable ECG devices (Figure 4.17) now have wireless connectivity to computers and other display devices. In addition to this, portable handheld ECG devices (Figure 4.18) are fast gaining prominence. These devices are simpler having only a single lead, which can be used to detect atrial fibrillations or abnormal heartbeats.

ECG monitoring for patients and the bedridden elderly has long been possible with trolley-based ECG monitors (Figure 4.19), but these devices have been bulky and expensive. The newer ECG monitoring devices described earlier have started to shrink in size and are now more affordable. This technology is also set to replace the trolley-based ECG systems used to record uterine contractions during childbirth allowing continuous electronic monitoring of the fetal heart in the home. Such devices will enable expecting parents to monitor the growth stages of their baby and nurture stronger bonds with their child, an ability that was not possible until recently.