Disease Monitoring
and
Clinical Decision Support

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Abstract. With the recent availability of mobile, cheap, and sometimes wearable sensors there are now new opportunities to monitor the progress of diseases in patients, for example in the home environment rather than in the hospital. Dealing with the data-streams coming from sensors that measure physiological parameters is associated with different scientific challenges, most of them due to the inherent complexity of biomedical data. An important challenge is that both learning from data-streams and interpreting incoming data-streams cannot be done without taking into account all the other patient data characterising a disease process. In addition, the various data elements will typically have different temporal granularities. For example, the body temperature of the patient is measured every day, whereas oxygen saturation may be measured on a continuous basis. Other patient data, such as signs and symptoms may be recorded on an even coarser time scale. Furthermore, all the collected data are in the end collected to assistant in making decisions about a patient, where external influences of the measurements cannot always be excluded. These, and other properties of biomedical data impose constraints on how collected data can be exploited. In the talk we will review some of these requirements and illustrate these by various real-world applications.