ABSTRACT: Drugs can treat human diseases through chemical interactions between the ingredients and intended targets in the human body. However, the ingredients could unexpectedly interact with off-targets, which may cause adverse drug side effects. Notifying patients and physicians of potential drug effects is an important step in improving healthcare quality and delivery. With the increasing popularity of Web 2.0 applications, more and more patients start discussing drug side effects in many online sources. In this talk, I will present our efforts on building a novel early warning system for unrecognized drug side effects based on the text information automatically gathered from the Internet. The system can automatically build a knowledge base for drug side effects by integrating the information related to drug side effects from different sources. It can also monitor the online information about drug side effects and discover possible unrecognized drug side effects. Our preliminary results show that the system has the potentials to expedite the discovery process of unrecognized drug side effects and to improve the quality of healthcare.