Health information systems have been advocated as a solution to the problems of errors and adverse events in health care. In emergency departments, electronic patient tracking systems are being implemented to replace manual status boards ("whiteboards") that are commonly used for managing clinical work. Manual status boards traditionally contained medical and logistical information about patients and provide staff with information about patients as well as higher level information regarding hospital state and team coordination information (assignments of providers to patients; status of on-call providers). While electronic versions of the status boards may mimic the look and layout of manual boards, support automated recording keeping and reporting, and allow information on the status board to be accessed at different locations in the hospital, they also impose new constraints on use, miss a critical opportunity to best support the work of the healthcare providers, and introduce new failure modes with unanticipated consequences. Such new technologies are often designed without an in-depth understanding of the work they need to support, or are designed with a focus on administrative functions rather than patient care functions (e.g., record keeping; billing). Without a careful understanding of how new technologies will be used in practice or the barriers to their use as expected, new technology can lead to unanticipated, undesirable consequences. This talk describes results from field studies cognitive engineering analyses, and human-in-the-loop studies that can better inform the design of health IT for emergency medicine.