

1. Here's a project idea that could be considered in either the EHR Enhancement domain or the Clinical Decision Support domain: Under the ACA (affordable care act), there is a "risk adjustment" process that essentially pays doctors more to take care of sicker patients. ([Process documentation](#)) The amount of money the doctor gets is determined by the diagnosis codes that appear in the member's recent medical history. So if a patient has diabetes, but the doctor forgets to record this condition during recent visits, the doctor won't get paid extra for caring for this more complex patient. I would love to create a "Missing Risk" tool that pulls data from FHIR, looks for chronic diseases in the patient's entire medical history, and then flags any diagnosis codes that have not been reported during the current calendar year. The doctor would then have to confirm the missing risks. This tool would insure doctors get paid fairly, while cleaning the data that is so critical to medical research. EHR Enhancements and Clinical Decision Support
2. With doctors having increasingly limited time with patients, a web-based database pooling population health data would aid them in identifying comorbidities. For the website, after obtaining deidentified patient information and existing population health research in publications or other databases (e.g. <http://www.countyhealthrankings.org/>), the doctor could identify comorbidities that occur with age and behavior. In practice, this would be a more complex algorithm that would require significant patient release of data . The web site would allow a doctor to look at people from socioeconomic class and ethnicity/geographic location, etc (as disease incidence varies by all). This would allow a doctor to go to the web page and say, okay you grew up in this location in this income level (would have to be rough estimate) and you are predisposed / more likely to suffer from these diseases. Researchers publish on these all the time, especially regarding genetics, but this would be a data base to pool the information as a database possibly with neural networks or machine learning algorithms if given enough data. That data could further be applied at visits to help the physician direct certain tests based on chances that a patient would be developing a chronic disease based on age, race, gender, and even other corollary symptoms. This would be in two domains but could be simplified to one: Clinical Decision Support and Population Health.  
For the project, we would want to pull from population health studies including population genetics and compile the data. If it were implemented in reality, we would want to aggregate the same data and insurance database data from many sources.
3. Severable wearable devices exist for use by consumers allowing upload to the manufacturer's database. Personal and Electronic Health Records could add this data if it was in an acceptable format. We propose a web-based application that could take the data from the manufacturer's database and convert it to a format compatible with an E/PHR system. As most devices allow for automatic upload as consumers shy away from extra steps, we would offer an automatic pull at a set frequency from the upload as a subscription service (with or without fee is irrelevant at this point. After pulling the data, the application would convert it to a specific EHR format so that approved medical professionals could account for it in continuing and coordinated care. It could give insight to how sedentary or active an individual is or other information. Patient Facing Tools Domain