Supplemental Material

Figure S1. Case-control design

Enrollment period:
Baseline period:
Case index date: ●
ADE not qualified as case: ○
Control index date: ●

Not qualify as a case: ADE occurred within 180 day of enrollment

Current index date

Case

Dynamic/super control: control index dates are matched to the corresponding case index date

Random control: control index dates are not matched to the case index date
Figure S2. MarketScan analysis results by ADE: precision, recall, F-score
Figure S3. INPC analysis results of all ADEs: precision, recall, F-score.
Figure S4. INPC analysis results by ADE: precision, recall, F-score
| ADE name                                | ADE Algorithm                                                                 |
|-----------------------------------------|-------------------------------------------------------------------------------|
| acute myocardial infarction             | **ICD 9:** 410, 410.00, 410.0, 410.01, 410.02, 410.90, 410.9, 410.91, 410.92, 410.80, 410.8, 410.81, 410.82, 410.20, 410.2, 410.10, 410.1, 410.11, 410.12, 410.21, 410.22, 410.30, 410.31, 410.32, 410.40, 410.4, 410.41, 410.42, 410.50, 410.5, 410.51, 410.52, 410.60, 410.6, 410.61, 410.62, 410.70, 410.7, 410.71, 410.72, 412, 429.7, 429.79  
|                                         | **ICD 10:** I21.09, I21.A1, I21.A9, I21.29, I21.19, I21.11, I21.4, I23.0, I25.2, I21.3, I21.9 |
| acute renal failure                     | **ICD 9:** 584, 586, 584.5, 584.6, 584.7, 584.8, 584.9, 639.3, 669.3, 669.30, 669.32, 669.34  
|                                         | **ICD 10:** D59.3, I12.0, I13.1, I13.2, K76.7, N17, N17.0, N17.1, N17.2, N17.8, N17.9, N18.0, N18.8, N19, N99.0, O08.4, O90.4 |
| acute liver injury                      | **ICD 9:** 573.8, 573.9, 571.8, 571.9, 572.8, 573, 646.7, 646.70, 646.71, 646.73, 864, 570, 573.2, 573.3, 790.4, 794.8  
|                                         | **ICD 10:** K76.1, K76.89, K76.9, K76.0, K76.89, K74.1, K76.9, K72.10, K72.90, O26.611, O26.612, O26.613, O26.62, K72.00, K76.2, K77, K71.6, K75.9, R74.0, R94.5 |
| gastrointestinal bleeding               | **ICD 9:** 569.3, 578.0, 578.9, 772.4, 578.1  
|                                         | **ICD 10:** K62.5, K92.2, K29.91 |