Table 2. Classification of disease complexity based on progressive and body system flags and frequency of encounters observed in administrative data

Category	Least Conservative Version	More Conservative Version	Most Conservative Version
Complex Chronic Disease			
Progressive Condition	≥ 1 claim	≥ 1 claim	≥ 1 claim
Malignancy	≥ 1 claim	≥ 1 claim	≥ 1 claim
Other	≥ 1 claim per body system for 2 different body systems during the measurement period*	≥ 2 claims per body system for 2 different body systems during the measurement period*	≥ 1 claim per body system *per year* for 2 different body systems during the measurement period*
Non-Complex Chronic Disease			
	≥ 1 claim for a single body system not flagged as progressive during the measurement period*	≥ 2 claims for a single body system not flagged as progressive during the measurement period*	≥ 1 claim per single body system *per year* not flagged as progressive during the measurement period*
Without Chronic Disease			
	None of the above during the measurement period*	None of the above during the measurement period*	None of the above during the measurement period*

*In the current study a three year measurement period was used (1/1/09-12/31/11)

Table 3. Sensitivity and specificity for PMCA in Seattle Children's Hospital (SCH) discharge and Washington State (WA) Medicaid claims data

Approach Algorithm	C-CD		NC-CD		Without CD	
	Sensitivity	Specificity	Sensitivity	Specificity	Sensitivity	Specificity
SCH (n=700)*	**N=350***	**N=350***	**N=100***	**N=100***	**N=250***	**N=250***
Least PMCA †	84% (80%, 88%)**	92% (89%, 94%)	41% (32%, 51%)	92% (85%, 96%)	96% (93%, 98%)	90% (86%, 93%)
More PMCA	73% (68%, 77%)	96% (93%, 98%)	19% (13%, 28%)	94% (88%, 97%)	100% (99%, 100%)	72% (66%, 77%)
Most PMCA	66% (61%, 71%)	96% (93%, 98%)	1% (0%, 5%)	99% (95%, 100%)	100% (99%, 100%)	57% (51%, 63%)
WA Medicaid (n=678)*	**N=329***	**N=329***	**N=100***	**N=100***	**N=249***	**N=249***
Least PMCA	91% (87%, 94%)	79% (74%, 83%)	37% (28%, 47%)	88% (80%, 93%)	69% (63%, 74%)	94% (90%, 96%)
More PMCA †	89% (85%, 92%)	85% (81%, 89%)	45% (36%, 55%)	91% (84%, 95%)	80% (75%, 85%)	91% (87%, 94%)
Most PMCA	78% (73%, 82%)	90% (86%, 93%)	16% (10%, 24%)	95% (89%, 98%)	95% (92%, 97%)	75% (69%, 80%)

*Number of children from the gold standard sample included in the designated category
**(95% confidence intervals)
†recommended algorithm
SCH Seattle Children's Hospital
WA Washington State
C-CD Complex chronic disease
NC-CD Non-complex chronic disease
CD chronic disease