

Batched Washout Analysis Summary: Model Performance Retention (0-400K Patients Processed in Batches)

Disease	Immediate (0-Year)	1-Year Washout	2-Year Washout	AUC Drop	Retention	Batches (0yr/1yr/2yr)
COPD	0.739±0.062	0.668±0.042	0.654±0.049	0.085	88%	40/40/40
Ulcerative_Colitis	0.812±0.173	0.552±0.156	0.502±0.155	0.310	62%	40/40/40
Pneumonia	0.641±0.081	0.624±0.072	0.624±0.053	0.017	97%	40/40/40
Colorectal_Cancer	0.867±0.108	0.665±0.078	0.601±0.077	0.266	69%	40/40/40
CKD	0.656±0.207	0.702±0.117	0.661±0.106	-0.005	101%	35/40/39
ASCVD	0.904±0.022	0.701±0.024	0.678±0.023	0.226	75%	40/40/40
Thyroid_Disorders	0.725±0.054	0.564±0.044	0.559±0.041	0.165	77%	40/40/40
Asthma	0.731±0.048	0.478±0.038	0.506±0.034	0.225	69%	40/40/40
Anxiety	0.641±0.165	0.497±0.103	0.509±0.083	0.132	79%	39/40/40
Rheumatoid_Arthritis	0.783±0.116	0.632±0.106	0.577±0.108	0.206	74%	40/40/40
Multiple_Sclerosis	0.813±0.193	0.588±0.215	0.477±0.203	0.336	59%	31/35/35
Secondary_Cancer	0.609±0.086	0.612±0.060	0.605±0.054	0.003	99%	40/40/40
Heart_Failure	0.775±0.092	0.710±0.096	0.692±0.065	0.084	89%	40/40/40
Bladder_Cancer	0.833±0.162	0.689±0.128	0.740±0.114	0.093	89%	39/40/40
Crohns_Disease	0.839±0.139	0.535±0.231	0.528±0.183	0.310	63%	38/39/38
All_Cancers	0.772±0.055	0.685±0.036	0.670±0.035	0.102	87%	40/40/40
Atrial_Fib	0.809±0.054	0.687±0.040	0.678±0.040	0.131	84%	40/40/40
Depression	0.656±0.105	0.444±0.057	0.465±0.058	0.191	71%	40/40/40
Breast_Cancer	0.763±0.081	0.556±0.068	0.535±0.072	0.228	70%	40/40/40
Bipolar_Disorder	0.806±0.212	0.531±0.159	0.493±0.203	0.312	61%	32/36/36
Stroke	0.659±0.090	0.677±0.076	0.656±0.068	0.003	100%	40/40/40
Psoriasis	0.704±0.213	0.563±0.171	0.515±0.151	0.189	73%	35/37/39
Lung_Cancer	0.698±0.178	0.671±0.099	0.671±0.085	0.027	96%	37/40/40
Prostate_Cancer	0.865±0.079	0.707±0.063	0.702±0.047	0.162	81%	40/40/40
Parkinsons	0.829±0.130	0.729±0.172	0.748±0.102	0.081	90%	33/38/38
Diabetes	0.744±0.049	0.600±0.041	0.607±0.034	0.136	82%	40/40/40
Anemia	0.684±0.059	0.544±0.049	0.576±0.042	0.109	84%	40/40/40
Osteoporosis	0.779±0.068	0.670±0.057	0.679±0.057	0.100	87%	40/40/40