

S1 Panel. Quantitative summary of the included studies.

<ul style="list-style-type: none"> ➤ Total articles included: 106 	<ul style="list-style-type: none"> ➤ Total number of participants: 24.2 million
<ul style="list-style-type: none"> ➤ Publications by year: <ul style="list-style-type: none"> • 2002, 2008, 2014: one article each • 2010, 2013: three articles each • 2015: two articles • 2016: five articles • 2017: seven articles • 2018: ten articles • 2019: 22 articles • 2020: 25 articles • 2021: 25 articles • 2022: (up to Jan 4: one article) 	<ul style="list-style-type: none"> ➤ Countries under study: time reported <ul style="list-style-type: none"> • United States of America: 41 • United Kingdom: 31 • Netherlands: 11 • Canada: 9 • Spain: 6 • Germany: 4 • Sweden, China, Australia: 3 each • Russia, Denmark, Indonesia, Israel, Kuwait: 2 each • Croatia, Taiwan, Italy, Slovenia, Ukraine: 1 each
<ul style="list-style-type: none"> ➤ Study design: <ul style="list-style-type: none"> • Pros. cohort: 8 articles • Retro. cohort: 63 articles • Retro. case control: 29 articles • Retro. nested case control: three articles • Cross sectional: three articles 	<ul style="list-style-type: none"> ➤ Models' Purpose: 107 <ul style="list-style-type: none"> • Inc. diagnostic: 62 • Prev. diagnostic: 20 • Prognostic: 25
<ul style="list-style-type: none"> ➤ Type of modelling studies: <ul style="list-style-type: none"> • Development without external validation: 81 • Development with external validation: 13 • External validation: 12 	<ul style="list-style-type: none"> ➤ Primary care data sources: time used for models' development and/or validation: 126 <ul style="list-style-type: none"> • Exclusive PHC data: 92 • Linked PHC data: 34
<ul style="list-style-type: none"> ➤ Machine Learning models used: 207 <ul style="list-style-type: none"> • Supervised ML: 172 • Reinforcement ML: 35 <p>Natural language processing NLP: 5 (a preparatory step)</p> 	
<ul style="list-style-type: none"> ➤ Health conditions predicted (according to ICD-10 - 2019) (n= 42 across 106 studies) <ol style="list-style-type: none"> 1. Endocrine, metabolic, nutritional diseases: 27 <ul style="list-style-type: none"> • Diabetes mellitus: 10 • Diabetic retinopathy: 5 • Diabetic polyneuropathy: 3 • Familial hypercholesterolemia: 3 	

- Children obesity: 2
- Primary Aldosteronism: 1
- Diabetic foot: 1
- Diabetic nephropathy: 1
- Gestational Diabetes: 1

2. Circulatory: 23

- Any cardiovascular disease: 7
- Heart failure: 5
- Hypertension: 5
- Atrial fibrillation: 2
- Stroke: 2
- Atherosclerosis: 1
- Myocardial infarction: 1

3. Mental and behavioral disorders: 21

- Alzheimer's disease: 12
- Major depressive disorder: 3
- Post-partum depression: 1
- Psychosis: 1
- Post-traumatic stress disorder: 2
- Anxiety: 1
- Any mental disorder: 1

4. Respiratory system diseases: 10

- Chronic obstructive pulmonary disease: 3
- Asthma: 2
- Influenza: 2
- Asthma/COPD overlap: 1
- COVID-19 : 1
- Nontuberculous mycobacterial lung: 1

5. Neoplasms: 8

- Colorectal cancer: 6
- Lung cancer: 1
- Pancreatic cancer: 1

6. Musculoskeletal and connective tissue diseases: 6

- Rheumatoid arthritis: 2
- Ankylosing spondylitis: 1
- Back pain: 1
- Fibromyalgia: 1
- Systemic lupus erythematosus: 1

7. Nervous: 3

- Post stroke spasticity: 1
- Epilepsy: 1

- Progressive Supranuclear Palsy: **1**

8. External cause of mortality: 3

- Suicidality: 3

9. Digestive: 2

- Gastroesophageal reflux: 1
- Inflammatory bowel diseases: 1

10. Genitourinary: 2

- Chronic kidney disease: 2

11. Pregnancy, childbirth, puerperium: 1

- Preeclampsia: 1