

Table S1. Full search strategy

Database	Key words
PubMed/MEDLINE	("influenza, human"[MeSH Terms] OR "Measles"[MeSH Terms] OR "Mumps"[MeSH Terms] OR "Rubella"[MeSH Terms] OR "herpesvirus 3, human"[MeSH Terms] OR "Chickenpox"[MeSH Terms] OR "Whooping Cough"[MeSH Terms] OR "Haemophilus influenzae"[MeSH Terms] OR "Haemophilus influenzae type b"[MeSH Terms] OR "Poliomyelitis"[MeSH Terms] OR "hepatitis, viral, human"[MeSH Terms] OR "Diphtheria"[MeSH Terms] OR "Tetanus"[MeSH Terms] OR "COVID-19"[MeSH Terms] OR "Neglected Diseases"[MeSH Terms] OR "Infections"[MeSH Terms] OR "infect*"[Title/Abstract] OR "infect*"[All Fields] OR "Communicable Diseases"[MeSH Terms] OR "influenza, human"[MeSH Terms] OR "influenza"[All Fields] OR "flu"[All Fields] OR "Arboviruses"[MeSH Terms] OR "Measles"[All Fields] OR "Mumps"[All Fields] OR "Rubella"[All Fields] OR "herpesvirus 3 human"[All Fields] OR "Chickenpox"[All Fields] OR "Whooping Cough"[All Fields] OR "Haemophilus influenzae"[All Fields] OR "Haemophilus influenzae type b"[All Fields] OR "Poliomyelitis"[All Fields] OR "hepatitis viral human"[All Fields] OR "Diphtheria"[All Fields] OR "Tetanus"[All Fields] OR "COVID-19"[All Fields] OR "Neglected Diseases"[All Fields] OR ("Whooping Cough"[MeSH Terms] OR ("whooping"[All Fields] AND "cough"[All Fields]) OR "Whooping Cough"[All Fields] OR "pertussis"[All Fields])) AND ("prediction" OR "forecasting") AND ("communicable disease*" OR "infectious diseases" OR "vaccines preventable diseases") AND "machine learning" NOT review* NOT systematic review NOT narrative review
Scopus	((human AND influenza) OR (measles) OR (mumps) OR (rubella) OR (herpesvirus) OR TITLE-ABS-KEY (chickenpox) OR TITLE-ABS-KEY (pertussis) OR TITLE-ABS-KEY (haemophilus AND influenzae) OR TITLE-ABS-KEY (poliomyelitis) OR TITLE-ABS-KEY (diphtheria) OR TITLE-ABS-KEY (tetanus) OR TITLE-ABS-KEY (covid-19) OR TITLE-ABS-KEY (neglected AND disease) OR TITLE-ABS-KEY (infection) AND TITLE-ABS-KEY (forecasting) OR TITLE-ABS-KEY (prediction) AND TITLE-ABS-KEY (communicable AND diseases) OR TITLE-ABS-KEY (infectious AND diseases) AND TITLE-ABS-KEY (machine AND learning)

	AND NOT TITLE-ABS-KEY (review) AND NOT TITLE-ABS-KEY (systematic AND review) AND NOT TITLE-ABS-KEY (narrative AND review))
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Note: the search strings are different in relation to the usability of the database

Table S2. Detailed description of inclusion/exclusion criteria, based on PICOS (Population, Intervention, Comparison, Outcomes and Study design)

Search strategy	Details
<i>Inclusion criteria</i>	P: human I: machine learning C: infectious diseases O: prediction/forecasting outbreaks infectious diseases S: primary observational studies (cohort, case-control, cross-sectional)
<i>Exclusion criteria</i>	P: not human I: not about machine learning C: not about infectious diseases O: not about prediction/forecasting outbreaks infectious diseases S: review article, meta-analysis, trial, expert opinion, commentary, editorial, case report, letter to the editor, book chapters.
<i>Language filter</i>	English
<i>Time filter</i>	No filter (from inception)
<i>Database</i>	PubMed/Medline; Scopus

Table S3. Quality assessment of the included studies, using the Newcastle-Ottawa Scale (NOS). In the lines in gray the proceedings/conference papers.

Author, year, [Ref]	Selection	Comparability	Outcome
Absar N, 2022,[20]	**	**	**
Adiga A, 2021,[21]	****	**	***
Ahmad HF, 2021,[22]	****	*	***

Ak Ç, 2020,[23]	****	**	***
Ak Ç, 2018,[24]	**	**	***
Alsmadi MK, 2022,[25]	****	**	***
Ardabili SF, 2020,[26]	****	**	**
Asfahan S, 2020,[27]	**	**	***
Bagheri H, 2020,[28]	***	**	***
Balogh A, 2022,[29]	****	*	***
Benedum CM, 2020,[30]	**	**	***
Chaurasia V, 2022,[31]	****	*	***
Chen J, 2018,[32]	**	**	***
Chimmula VKR, 2020,[33]	****	**	**
Dash S, 2021,[34]	****	*	***
Dixon S, 2022,[35]	****	**	***
González-Bandala DA, 2020,[36]	****	**	***
Goo T, 2021,[37]	****	**	***
Guo Y, 2020,[38]	****	*	**
Haq I, 2022,[39]	**	**	***
Kamana E, 2022,[40]	****	**	***

Katragadda S, 2022,[41]	**	**	***
Ketu S, 2021,[42]	****	**	**
Kim J, 2021,[43]	***	*	***
Kim J, 2019,[44]	**	**	***
Kumar SL, 2021,[45]	****	**	**
Lmater MA, 2021,[46]	****	**	***
Lu FS, 2018,[47]	****	**	***
Marra AR, 2020,[48]	***	**	**
Meng D, 2021,[49]	****	**	***
Mohammad Masum AK, 2020,[50]	***	**	***
Murphy C, 2021,[51]	****	*	***
Nguyen VH, 2022,[52]	****	**	***
Niraula P, 2022,[53]	****	**	***
Nsoesie EO, 2021,[54]	****	**	***
Patil S, 2021,[55]	****	**	***
Pourghasemi HR, 2020,[56]	****	*	***
Roster K, 2022,[57]	****	**	***
Saba T, 2021,[58]	****	**	***

Shaghghi N, 2021,[59]	****	**	***
Shen C, 2021,[60]	****	**	**
Shen L, 2022,[61]	****	**	***
Shi Y, 2016,[62]	****	**	***
Tiwari D, 2022,[63]	***	**	***
Venkatramanan S, 2021,[64]	****	**	***
Verma H, 2022,[65]	****	**	**
Wang H, 2022,[66]	****	**	***
Wang X, 2022,[67]	***	**	***
Wang Y, 2022,[68]	****	*	***
Xu J, 2020,[69]	****	**	***
Xu Q, 2017,[70]	****	**	**
Yang Z, 2020,[71]	****	**	***
Zhang Y, 2022,[72]	****	*	**
Zhong R, 2018,[73]	***	**	***
Ajith A, 2020, [74]	**	**	**
Andreas A, 2020, [75]	**	**	**
Brock PM, 2019, [76]	**	**	**

Chumachenko D, 2021, [77]	***	**	**
Chumachenko D, 2021, [78]	***	**	**
Fan XR, 2022, [79]	**	**	**
Hasri H, 2021, [80]	*+	**	**
Kolesnikov AA, 2019, [81]	**	**	**
Kumari P, 2020, [82]	**	**	**
Liu Z, 2021, [83]	**	**	**
Maaliw RR, 2021, [84]	***	**	**
Mahima Y, 2020, [85]	**	**	**
Mei W, 2021, [86]	***	*	**
Patayon UB, 2021 [87]	**	**	**
Pickering L, 2020, [88]	**	**	**
Rohini M, 2021, [89]	***	**	**
Satu MS,2021, [90]	**	**	**
Sri SB, 2022, [91]	**	**	**
Wang H, 2022, [92]	**	**	**
Zhou Q, 2020, [93]	**	**	**
Zhang P,2022, [94]	***	**	**

* Each star represents a high-quality
criterion accomplished by the study

MAX ****

MAX **

MAX ***