

Supplementary Material

In MEDLINE

Human proficiency arm:

("Electrocardiography"[MeSH Terms] OR ECG[tiab] OR electrocardiogram[tiab])
AND("Nurses"[MeSH Terms] OR nurs*[tiab])AND("Emergency Service, Hospital"[MeSH Terms] OR ICU[tiab] OR CCU[tiab] OR "Critical Care"[MeSH Terms])AND("Competence, Clinical"[MeSH Terms] OR proficien*[tiab] OR "Knowledge"[MeSH Terms] OR skill*[tiab])

Filters: Humans, English, Publication dates from 2020 to 2025

Computerized interpretation arm:

("diagnosis"[MeSH Terms] OR diagnosis[tiab] OR "computer"[MeSH Terms] OR computer[tiab] OR algorithm[tiab] OR "artificial intelligence"[MeSH Terms] OR "deep learning"[MeSH Terms] OR "deep learning"[tiab] OR CNN[tiab])AND("electrocardiography"[MeSH Terms] OR ECG[tiab] OR electrocardiogram[tiab])AND(accuracy[tiab] OR "Sensitivity and Specificity"[MeSH Terms] OR sensitivity[tiab]OR Validataion[tiab])

Filters: Humans, English, Publication dates from 2020 to 2025

In Embase

Human proficiency arm:

('electrocardiography'/exp OR ECG:ti,ab OR electrocardiogram:ti,ab)
AND('nurse'/exp OR nurs*:ti,ab)AND('emergency ward'/exp OR ICU:ti,ab OR CCU:ti,ab OR 'critical care'/exp)
AND('competence'/exp OR proficien*:ti,ab OR 'knowledge'/exp OR skill*:ti,ab)

Filters: Humans, English language, 2020–2025.

Computerized interpretation arm:

('diagnosis'/exp OR diagnosis:ti,ab OR 'computer'/exp OR computer:ti,ab OR algorithm:ti,ab OR 'artificial intelligence'/exp OR 'deep learning'/exp OR 'deep learning':ti,ab OR CNN:ti,ab)
AND('electrocardiography'/exp OR ECG:ti,ab OR electrocardiogram:ti,ab)
AND(accuracy:ti,ab OR 'sensitivity and specificity'/exp OR sensitivity:ti,ab OR validation:ti,ab)

Filters: Humans, English language, 2020–2025.

In CINAHL (EBSCO host):

Human proficiency arm:

(MH "Electrocardiography" OR TI "ECG" OR AB "ECG" OR TI "electrocardiogram" OR AB "electrocardiogram")AND(MH "Nurses" OR TI nurs* OR AB nurs*)AND
(MH "Emergency Service, Hospital" OR TI ICU OR AB ICU OR TI CCU OR AB CCU OR MH "Critical Care")AND(MH "Competence" OR TI proficien* OR AB proficien* OR MH "Knowledge" OR TI skill* OR AB skill*)

Filters: Humans, English language, 2020–2025.

Computerized interpretation:

(MH "Diagnosis" OR TI diagnosis OR AB diagnosis OR MH "Computers" OR TI computer OR AB computer OR TI algorithm OR AB algorithm OR MH "Artificial Intelligence" OR MH "Deep Learning" OR TI "deep learning" OR AB "deep learning" OR TI CNN OR AB CNN)AND(MH "Electrocardiography" OR TI ECG OR AB ECG OR TI electrocardiogram OR AB electrocardiogram)AND(TI accuracy OR AB accuracy OR MH "Sensitivity and Specificity" OR TI sensitivity OR AB sensitivity OR TI validation OR AB validation).

Filters: Humans, English language, 2020–2025.

In Scopus

Human proficiency arm:

TITLE-ABS-KEY("electrocardiography" OR ECG OR electrocardiogram)
ANDTITLE-ABS-KEY(nurse* OR nurs*)ANDTITLE-ABS-KEY("emergency" OR ICU OR CCU OR "critical care")ANDTITLE-ABS-KEY(competence OR proficien* OR knowledge OR skill*)

Filters: English language and studies between 2020–2025.

Computerized interpretation:

TITLE-ABS-KEY(diagnosis OR computer OR algorithm OR "artificial intelligence" OR "deep learning" OR CNN)
AND TITLE-ABS-KEY("electrocardiography" OR ECG OR electrocardiogram)AND TITLE-ABS-KEY(accuracy OR sensitivity OR validation).

Filters: English language and studies between 2020–2025.

In Cochrane CENTRAL

Human proficiency arm:

(MeSH descriptor: [Electrocardiography] OR (ECG):ti,ab,kw OR (electrocardiogram):ti,ab,kw)

AND(MeSH descriptor: [Nurses] OR nurs*:ti,ab,kw)

AND(MeSH descriptor: [Emergency Service, Hospital] OR ICU:ti,ab,kw OR CCU:ti,ab,kw OR MeSH descriptor: [Critical Care])AND(MeSH descriptor: [Competence, Clinical] OR proficien*:ti,ab,kw OR MeSH descriptor: [Knowledge] OR skill*:ti,ab,kw)

Filters: English language and studies between 2020–2025.

Computerized interpretation:

(MeSH descriptor: [Diagnosis] OR diagnosis:ti,ab,kw OR MeSH descriptor: [Computers] OR computer:ti,ab,kw OR algorithm:ti,ab,kw OR MeSH descriptor: [Artificial Intelligence] OR MeSH descriptor: [Deep Learning] OR “deep learning”:ti,ab,kw OR CNN:ti,ab,kw)AND(MeSH descriptor: [Electrocardiography] OR ECG:ti,ab,kw OR electrocardiogram:ti,ab,kw)AND (accuracy:ti,ab,kw OR MeSH descriptor: [Sensitivity and Specificity] OR sensitivity:ti,ab,kw OR validation:ti,ab,kw)

Filters: English language and studies between :2020–2025.

In IEEE Xplore

Human proficiency arm:

(“electrocardiography” OR ECG OR electrocardiogram)AND(nurse* OR nursing)

AND(emergency OR ICU OR CCU OR “critical care”)AND(competence OR proficien* OR knowledge OR skill*)

Filters: studies between 2020–2025.

Computerized interpretation:

(diagnosis OR computer OR algorithm OR “artificial intelligence” OR “deep learning” OR CNN) AND(“electrocardiography” OR ECG OR electrocardiogram)AND(accuracy OR sensitivity OR validation)

Filters: studies between 2020–2025.

In arXiv Preprint:

Human proficiency arm:

(“electrocardiogram” OR “ECG”) AND (nurse OR nurses OR nursing) AND (“emergency” OR “ICU” OR “CCU” OR “critical care”) AND (competence OR competency OR proficient OR proficiency OR knowledge OR skill OR skills)

Computerized interpretation:

(diagnosis OR computer OR algorithm OR “artificial intelligence” OR “deep learning” OR CNN) AND(“electrocardiography” OR ECG OR electrocardiogram)AND(accuracy OR sensitivity OR validation)

Studies between 2020–2025.

In Grey Literature (Google scholar, open grey, proquest)

Human proficiency arm:

Proquest: AB(“electrocardiogram” OR “electrocardiography” OR ECG)ANDAB(nurse OR nurses OR nursing)

AND AB(emergency OR ICU OR CCU OR “critical care”)AND AB(competence OR proficiency OR knowledge OR skill OR skills OR competency OR proficient).

Google scholar and open grey: “electrocardiogram” OR “ECG” AND nurse AND (“emergency” OR ICU OR CCU OR “critical care”) AND (competence OR proficiency OR knowledge OR skill)

Studies between 2020–2025.

Computerized interpretations:

Proquest: AB(diagnosis OR computer OR algorithm OR “artificial intelligence” OR “deep learning” OR CNN)AND AB(accuracy OR sensitivity OR validation)

Google scholar and open grey: (“electrocardiogram” OR ECG) AND (“artificial intelligence” OR “deep learning” OR CNN OR algorithm OR computer OR diagnosis) AND (accuracy OR sensitivity OR validation)

Studies between 2020–2025.