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IMPLEMENTATION OF EARLY WARNING SYSTEM (EWS) BY NURSES IN THE EMERGENCY DEPARTMENT AND THE IMPACT TO PREVENTION INCIDENT NO EXPECTED: SYSTEMATIC REVIEW

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ABSTRACT
The Emergency Department is a high-intensity clinical setting that manages critically ill patients who are highly susceptible to sudden clinical deterioration. Early detection through the implementation of the Early Warning System plays a crucial role in preventing unexpected adverse events, with nurses serving as the primary implementers of this system. This review aims to evaluate current evidence on the implementation of the Early Warning System by nurses in the Emergency Department and its impact on the prevention of unexpected adverse events. This study employed a systematic review approach by applying the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines during the article selection process and using the 2023 edition of the Joanna Briggs Institute (JBI) Critical Appraisal Tool to assess the quality of included studies. Search for articles through the ScienceDirect, ProQuest, PubMed, BMJ Journal, and EBSCO databases from 2020 to 2025. and 10 articles were analyzed. The majority of studies reported that the use of the Early Warning System consistently enhances the early detection of patient deterioration, accelerates clinical response, improves triage accuracy, and assists in predicting the need for advanced care such as admission to intensive care units. Implementation by nurses was also associated with improved compliance in vital signs monitoring and a reduction in patient mortality.

Keywords: adverse events; early warning system; emergency department; nurses

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INTRODUCTION

The Emergency Department (ED) is a critical unit within a hospital's healthcare system, serving as the first point of care for patients in acute, critical, or unstable conditions. The nature of services in the ED is characterized by high case complexity, the need for rapid decision-making, and a heavy workload on healthcare providers, particularly nurses. Patients arriving at the ED are at high risk of sudden clinical deterioration, such as cardiac arrest, decreased consciousness, or organ failure, which can result in death if not promptly recognized and treated. Therefore, early detection of changes in patient conditions is vital to prevent Adverse Events (AEs), which are serious incidents that could have been avoided through timely recognition of warning signs and rapid clinical response.One systematic approach proven effective in detecting patient deterioration is the Early Warning System (EWS). This system uses scores based on physiological parameters such as blood pressure, respiratory rate, pulse, body temperature, level of consciousness, and oxygen saturation to identify patients at high risk of deterioration. The total EWS score serves as a guide for determining the urgency level of care and the necessary intervention steps. By routinely applying EWS, healthcare providers can more quickly recognize deteriorating patients, activate emergency response systems earlier, and prevent adverse events that could compromise patient safety.

In practice, nurses play a central role in the EWS cycle. As the healthcare professionals who interact most frequently with patients, nurses are responsible for regularly measuring vital signs, accurately calculating the EWS score, documenting results, and promptly communicating findings to the medical team to facilitate further clinical decisions. In other words, the effectiveness of EWS in enhancing patient safety heavily depends on the nurses' diligence and competence in applying it.Numerous studies provide strong evidence of the benefits of implementing the Early Warning System in improving clinical response to patient deterioration. Research by Bobonera et al. (2023) shows that the use of EWS significantly helps prevent serious complications in cardiovascular patients. Meanwhile, a study by Braun et al. (2022) reported a reduction in sudden cardiac arrest incidents and an increase in the speed of emergency interventions following consistent implementation of EWS in emergency units. A systematic review by Le Lagadec and Dwyer (2017) also emphasizes that active nurse involvement in EWS application correlates positively with enhanced patient safety in emergency departments, by improving the speed and accuracy of clinical decision-making.

The effectiveness of this system is further supported by a study by Oliveira et al. (2022), which demonstrated that using the National Early Warning Score (NEWS) significantly improved compliance with vital sign monitoring schedules in emergency rooms—from only 20.1% before the intervention to 92.6% after implementation. This directly impacted the early detection of clinical deterioration. However, compliance dropped when the system recommended more intensive monitoring intervals, reflecting that successful EWS implementation depends not only on the system itself but also on the readiness of human resources.Nevertheless, despite the theoretical and empirical evidence of its effectiveness, EWS implementation in the field does not always run smoothly. Various obstacles still challenge its application in emergency departments, including heavy nurse workloads, lack of regular training, limited resources, and low compliance with EWS protocols. Additionally, the phenomenon of "failure to escalate" is still encountered—where rising EWS scores are not followed by appropriate clinical responses, resulting in delayed interventions and the occurrence of adverse events.

Given this background, this systematic review aims to critically evaluate the implementation of the Early Warning System by nurses in Emergency Departments and its impact on preventing Adverse Events. The review focuses on the effectiveness of EWS in early detection of patient deterioration, its impact on patient safety outcomes, and factors influencing successful implementation. Through a deeper understanding, the findings of this review are expected to serve as a basis for evidence-based policy development, training program design, and improvement of professional nursing practices in emergency departments, ultimately strengthening hospital-wide patient safety systems.

METHOD

This study employed a systematic review approach with the following inclusion criteria: original research articles with full-text availability, published within the last five years (2019–2024), written in English or Indonesian, focused on the implementation of EWS by nurses in Emergency Departments, and published in reputable, internationally indexed peer-reviewed journals. Articles must report outcomes related to the prevention of clinical adverse events (such as cardiac arrest, respiratory failure, sudden death, or activation of rapid response teams). Exclusion criteria included inaccessible full-text articles, those irrelevant to the nurse's role in EWS implementation, studies conducted in pediatric, obstetric, or pure ICU settings, and publications in the form of systematic reviews, literature reviews, or meta-analyses. Literature searches were conducted across various international electronic databases, including PubMed, ScienceDirect, EBSCO, ProQuest, and other relevant nursing journal databases. Keywords used included a combination of English and Indonesian terms such as

"Early Warning System", "EWS", "Emergency Department", "nurse", "deterioration", "adverse events", and their Indonesian equivalents.Researchers independently conducted quality assessments using the JBI and PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) checklists. The PRISMA statement outlines that the search process consists of three steps: identification, screening, and inclusion. The selection process, which resulted in 10 included articles, is illustrated in the PRISMA flow diagram below:

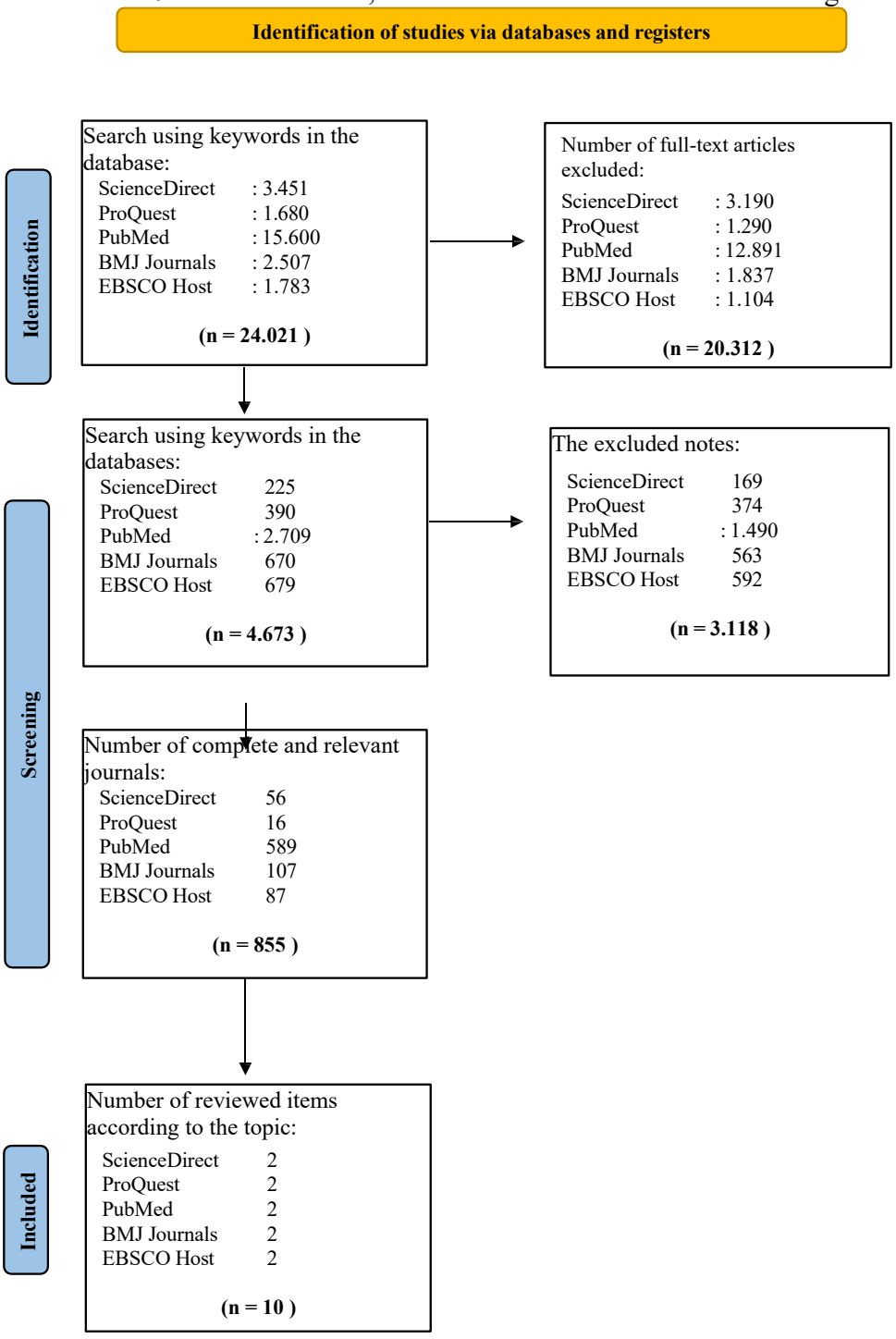

Figure 1. Journal search using the PRISMA (Preferred) method. Reporting Items for Systematic and Meta Analysis)

RESULT

Table 1.
Search literature in accordance database and say key

Database	Keyword	Total Artikel (1)	Limiter	Total Artikel (2)	Artikel Terpilih
ScienceDirect	Emergency nurse OR Early Warning System (EWS) OR Adverse Event	3.451	Last 5 years , English language, articles journals	56	2
ProQuest	Emergency nurse OR Early Warning System (EWS) OR Adverse Event	1.680	Last 5 years, English language	16	2
PubMed	Emergency nurse OR Early Warning System (EWS) OR Adverse Event	15.600	Last 10 years, English language, Research article literature review	589	2
BMJ - Journals	Emergency nurse OR Early Warning System (EWS) OR Adverse Event	2.507	Last 5 years, Englisg language, Article Journal	107	2
EBSCO Host	Emergency nurse OR Early Warning System (EWS) OR Adverse Event	1.783	Last 5 years, Englisg language, Article Journal	87	2
		Total			10

Based on results search with database obtained 8 article Which more answer PICO Which consists of ScienceDirect, ProQuest, PubMed, BMJ – Journals and EBSCO Host databases, each containing 2 articles.

Table 2.
Results search journal selected

No	Title Journal	Author/Year	Journal Name	Country	Methodology	Sample
1.	Evaluating the Use of a Modified Early Warning Score in Predicting Serious Adverse Events in Iranian Hospitalized Patients: A Prognostic Study	Maftoo hian et al., 2020	Journal of Emerge ncy Nursing	Iran, USA	Observasional Prospektif (Prognostik) – Kuantitatif	381
2.	A customized early warning score enhanced emergency department patient flow process and clinical outcomes in a COVID-19 pandemic	Yazdanyar et al., 2022	JACEP Open	USA	Studi Cross-Sectional Retrospektif berbasis data observasional	43.892
3.	Comparing complaint-based triage scales and early warning scores for emergency department triage	Schinkel et al., 2022	Emerge ncy Medicin e Journal	Belanda	Mixed Method Retrospektif – Single Centre Study)	12.317

No	Title Journal	Author/Year	Journal Name	Country	Methodology	Sample
4.	Performance of Machine Learning versus the National Early Warning Score for Predicting Patient Deterioration Risk: A Single-Site Study of Emergency Admissions	Watson et al., 2024	BMJ Health & Care Informatics	UK	Retrospektif, Observasional, Machine Learning	174.393
5.	Effect of the national early warning score on monitoring the vital signs of patients in the emergency room	Oliveira et al., 2022	Rev Esc Enferm USP	Brazil	Quasi-Experimental, Before-After	280

Based on the analysis against 10 articles Which reviewed, It was found that the most widely used research method was cross-sectional design , which was four articles. Meanwhile, two articles used a retrospective approach, two others used a prospective design, and the remaining two applied mixed or quasi-experimental methods. The majority of studies came from countries with advanced health systems (USA, UK, Netherlands, Spain), but also covers the context of developing countries such as Iran, Colombia, and China. The results of critical appraisal show that articles number 2, 3, 4 and 7 have better quality for analysis.

Table 3.
Results And recommendation journal selected

No	Title Journal	Results	Recommendation
1	Evaluating the Use of a Modified Early Warning Score in Predicting Serious Adverse Events in Iranian Hospitalized Patients	MEWS with a cutoff ≥3 shows high accuracy in detecting serious events. (AUC = 0.82; sensitivity = 82.81%; NPV = 95.6%).	MEWS recommended as early screening tool in ED patients to anticipate clinical deterioration and support evidence-based clinical decisions.
2	A Customized Early Warning Score Enhanced Emergency Department Patient Flow Process and Clinical Outcomes in a COVID-19 Pandemic	With analyze more from 43,000 IGD patient data, this study proves that the implementation of mMEWS significantly reduces patient waiting time in the IGD by 4.57% without increasing the incidence of activation team responsive emergency (PRC). Matter This show that	Implementation of mMEWS is recommended as an operational strategy to accelerate patient flow. in Emergency Room without reduce safety aspects, especially under load conditions service Which tall like moment pandemic.
3	Comparing complaint-based triage scales and early warning scores for emergency department triage	This retrospective study compared MEWS and the Netherlands Triage System (NTS), showing that MEWS was superior in predicting the need for hospitalization and 30-day mortality (AUC MEWS = 0.70 vs NTS = 0.60). MEWS considered more objective because it is based on physiological parameters rather than subjective complaints.	MEWS can be used as a complement or even a replacement for complaint-based triage systems to improve the accuracy of initial assessment in emergency services.
4	Performance of Machine Learning versus the National Early Warning Score for Predicting Patient Deterioration Risk: A Single-Site Study of Emergencies Admissions	In studies scale big with more from 170,000 patient data, the BioClinicalBERT machine learning model showed the highest prediction accuracy (AP = 0.92) compared to NEWS (AP = 0.12). This model Also more fair in a way statistics (more slightly biased towards age, gender, and race).	The use of artificial intelligence models such as BioClinicalBERT is worth considering as a clinical decision support system, especially for detecting critical conditions in real-time in the ER.

No	Title Journal	Results	Recommendation
5	Effect of the national early warning score on monitoring the vital signs of patients in the emergency room	Studies quasi-experimental This showed that implementation of NEWS significantly increased compliance with monitoring intervals. sign vital from 20.1% to 92.6% in ER patients.	The NEWS system is effective in helping nurses determine the frequency of monitoring according to the patient's condition. And can used For increase alertness to clinical deterioration.
6	Validation of the National Early Warning Score (NEWS)-2 for adults in the emergency department in Colombia	Validation of NEWS2 in more than 3,900 adult patients demonstrated excellent accuracy. tall For predict hospital mortality (AUC = 0.90), with sensitivity 66% And specificity 96%. NEWS2 Also proven very reliable intra and inter-rater.	NEWS2 is recommended for widespread implementation in the ED because it can help identify high-risk patients quickly, objectively, and efficiently.
7	Comparison of Nine Early Warning Scores in Neurological Disease	This study compared nine EWS and found that the MREMS score was best at predicting short-term mortality (AUC up to 0.93), while MEWS And RAPS superior in predict need enter ICU.	Use score MREMS, MEWS, and RAPS suggested in initial triage process in acute neurological patients to improve clinical prediction and intervention prioritization.
8	A Tale of Two Continents: The Performance of Six Early Warning Scores in Two Emergency Departments	Cross-continental research in Denmark and Hong Kong Kong show NEWS had the best performance in predicting 30-day mortality (AUC = 0.701), but accuracy varied across sites.	NEWS and Worthing scores are recommended for use in a variety of contexts, but need to be combined with biomarker or additional data For increase prediction.
9	Performance of Early Warning Scoring Systems Regarding Adverse Events of Unanticipated Clinical Deterioration in Complementary and Alternative Medicine Hospitals	In alternative medicine hospitals, NEWS2 showed the highest performance in predicting unexpected critical events. (AUC = 0.72; OR = 25.03). Score This is also considered very reliable.	NEWS2 can used in a way effective even outside conventional hospitals, tak ing into account additional risk factors such as patient fragility .
10	Risk Prediction Using the National Early Warning Score and the Worthing Physiological Scoring System in Transported Patients to ICU from ED	NEWS and WPS scores are equally accurate in detecting risk deterioration during the process transfer patient from Emergency Room to ICU (AUC > 0.73). WPS is considered more practical to use in busy IGD conditions.	Recommended use NEWS or WPS prior to critical patient transfer to help the clinical team anticipate the risk of sudden events during intrahospital transport.

DISCUSSION

Results study systematic This strengthen proof that the Early Warning Score (EWS) system is an evidence-based intervention that is effective in improving early detection of deteriorating patient conditions in emergency services. By relying on parameter physiological base Which can be measured routinely, EWS allows nursing staff For recognize sign beginning clinical deterioration before it develops into a more severe condition. This is in line with the principle of patient safety which prioritizes prevention through proactive risk identification.The studies analyzed, including those by Maftoohian et al. (2020) and Vergara et al. (2021), showed that mark Area Under Curve (AUC) for predicting serious clinical events with EWS reached >0.80, indicating a very good level of accuracy. MEWS and NEWS2 have been shown to be able to predict events such as sudden cardiac arrest, the need for ICU admission, and death within 24–48 hours. This effectiveness makes EWS a primary tool in clinical decision making in the ER which is often faced with on condition patient with risk high and narrow response time.

Besides as tool prediction, EWS Also have a significant impact on preventing adverse events (AEs). The study by Yazdanyar et al. (2022) showed that the integration of mMEWS into the patient management system was able to reduce waiting times and improve care flow without increasing the number of emergency response team activations. This shows that the implementation of EWS No only impact on clinical aspects, but also supports the efficiency of the hospital's operational system. Implementation of EWS by nurses, which is the focus main in study This, requires special attention. Nurses play the main role in monitoring vital signs, recording EWS scores, and conveying information to the medical team. A study by Oliveira et al. (2022) proved that implementing EWS increased compliance with vital sign monitoring protocols from 20% to more than 90%. This means that EWS is able to form a nursing practice culture that is more systematic, accountable, and focused on prevention.However, the success of EWS implementation is not only determined by the accuracy of the system, but also Also by readiness organization. A number of study notes existence failure to escalate , that is condition where high EWS scores are not followed by timely clinical interventions. These barriers are related to high workload, lack of understanding of the system, or minimal training. Without a strong escalation mechanism, the potential of EWS in preventing adverse events will not be optimal.

In addition, local context and patient type also influence the effectiveness of EWS. For example, a study by Durantez-Fernández et al. (2022) showed that the MREMS and RAPS scoring systems were more accurate in predicting the need for intensive care and short-term mortality in patient neurological. This confirm that There is no “one-size-fits-all” EWS system. Local adaptation based on patient type, disease, and ED unit characteristics is essential.Progress technology Also participate expand scope of application EWS. Watson et a. (2024) showed that the triage data-based machine learning model had higher prediction accuracy than the traditional NEWS score. The BioClinicalBERT model was even able to combine free text records and vital sign data to provide warning early based on intelligence artificial. This finding opens up opportunities for the transformation of EWS systems from manual to digital with the support of more precise predictive analytics.

Other supporting factors include training and continuing education. The studies analyzed imply that nurses' competence in EWS will increase if supported by practical training, supervision, and simulation. Without strengthening the capacity of human resources human resources, the quality of implementation will continue to vary between individuals and units. By Because That, institution service Health needs to integrate EWS training into orientation, certification, and periodic re-training programs.The safety culture aspect is also an important variable. Organization with culture open to reporting of deteriorating conditions and rapid response to signal warning will more succeed in lowering number KTD. Success EWS is closely related to the extent to which the hospital system accommodates effective communication between professions, mechanism escalation based on protocols, and empowerment of nurses in their clinical roles.Overall, the results of this systematic review indicate that EWS systems run by nurses have proven to be effective, but their success is largely determined by a combination of system accuracy, implementer competence, organizational support, and technological readiness. The implications of these findings are not only relevant to emergency nursing practice, but also to the development of patient safety policies and clinical risk management systems more broadly.

CONCLUSION

This systematic review shows that Early Warning System (EWS) is intervention effective in detect early worsening condition patients in the Emergency Department (IGD). The implementation of EWS by nurses has been shown to increase the accuracy of high-risk patient identification, speed up taking decision clinical, as well as lower number Incident No Unwanted adverse events (KTD) such as sudden cardiac arrest, unexpected death, and delayed ICU admission.Score physiological like MEWS, NEWS, And NEWS2 has a high level of accuracy in predicting clinical outcomes, and can be applied in various context House Sick, including based on alternative and conventional medicine. In addition, the integration of digital technology and machine learning has been proven to increase the accuracy of predictions and strengthen the function of the warning system. early. However, success EWS implementation is highly dependent on human resource factors, nurse training, compliance with protocols, information system readiness, and patient safety culture.

REFERENCES

Bobonera, T. T., Mubin, M. F., Pohan, V. Y., Soesanto, E., & Astuti, R. (2023). Application of Early Warning System (EWS) in Patients with Cardiovascular Disorders: A Descriptive Study. International Journal of Cardiology, 12(3), 45-56. DOI: 10.26714/mki.7.1.2024.31-37

Braun, E. J., Singh, S., Penlesky, A. C., Strong,E. A., Holt, J. M., Fletcher, K. E., Stadler, M. E., Nattinger, A. B., & Crotty, B. H. (2022). Nursing implications of an early warning system implemented to reduce adverse events: A qualitative study. BMJ Quality & Safety, 31(7), 502-510. https://doi.org/10.1136/bmjqs-2021- 014498

Astuti, LP, Trisyani, WY, & Mirwanti, R. (2023). Implementation of Early Warning System (EWS) in Detecting Worsening I on Patient Mature in the Room Take care Stay House Sick . Journal of Telenursing (JOINING) , 5(2), 1590-1602.https://doi.org/10.31539/joting.v5i2.6356 O'Neill, S. M., Clyne, B., Bell, M., Casey, A.,

Leen, B., Smith, S. M., Ryan, M., & O'Neill, M. (2021). Why do healthcare professionals fail to escalate as per the early warning system (EWS) protocol? A qualitative evidence synthesis of the barriers and facilitators of escalation.BMC EmergencyMedicine, 21(1), 1-13. https://doi.org/10.1186/s12873-021- 00403-9

Augutis, W., Flenady, T., Le Lagadec, D., & Jefford, E. (2023). How do nurses use early warning system vital signs observation charts in rural, remote and regional health care facilities: A scoping review. Australia n Journal of Rural Health, 31(1), 45-58. https://doi.org/10.1111/ajr.12971

Aljabri, D. (2019). Effect of implementing anearly warning scoring system on patient outcomes. BMJ Open Quality,8(Suppl 1), A25.https://doi.org/10.1136/bmjoq-2019-PSF.58

Gerry, S., Bonnici, T., Birks, J., Kirtley, S., Virdee, P. S., Watkinson, P. J., & Collins,G. S. (2020). Early warning scores for detecting deterioration in adult hospital patients: Systematic review and critical appraisal of methodology. BMJ, 369, m1501.https://doi.org/10.1136/bmj.m1501

Guan, G., Lee, C. M. Y., Begg, S., Crombie, A.,& Mnatzaganian, G. (2022). The use of early warning system scores in prehospital and emergency department settings to predict clinical deterioration: A systematic review and meta-analysis. PLOS ONE, 17(3), e0265559 https://doi.org/10.1371/journal.pone.026 5559

Hwang, J.-I., Park, J.-W., Kim, J., & Ha, N.-Y.(2023). Performance of early warning scoring systems regarding adverse events of unanticipated clinical deterioration in complementary and alternative medici ne hospitals. Asian Nursing Research. https://doi.org/10.1016/j.anr.2023.04.003

Maftoohian, M., Assarroudi, A., Stewart, J. J., Dastani, M., Rakhshani, M. H., & Sahebkar, M. (2020). Evaluating the use of a modified early warning score in predicting serious adverse events in Iranian hospitalized patients: A prognostic study. Journal of Emergency Nursing. https://doiDOI:10.1016/j.jen.2019.10.01 5

Nielsen, P. B., Schultz, M., Long-distance runner, C. S., Kodal, A. M., Petersen, N. E., Petersen,

J. A., Long, T., Inherited, M. D., Meyhoff,C. S., Bestle, M., Hølge-Hazelton, B., Bunkenborg, G., Lippert, A., Andersen, O., Rasmussen, L. S., & Iversen, K. K. (2020). Adjusting early warning score by clinical assessment: A study protocol for a Danish cluster-randomised, multicentre study of an individual early warning score (I-EWS). BMJ Open, 10(e033676). https://doi.org/10.1136/bmjopen-2019- 033676

O'Neill, S. M., Clyne, B., Bell, M., Casey, A.,Leen, B., Smith, S. M., Ryan, M., & O'Neill, M. (2021). Why do healthcare professionals fail to escalate as per the early warning system (EWS) protocol? A qualitative evidence synthesis of the barriers and facilitators of escalation.BMC Emergency Medicine, 21(15).https://doi.org/10.1186/s12873-021- 00403-9

Nielsen, P. B., Schultz, M., Long-distance runner, C. S., Kodal, A. M., Petersen, N. E., Petersen,. A., Lange, T., Arvig, M. D., Meyhoff,C. S., Bestle, M., Hølge-Hazelton, B., Bunkenborg, G., Lippert, A., Andersen, O., Rasmussen, L. S., & Iversen, K. K. (2020). Adjusting Early Warning Score by clinical assessment: A study protocol for a Danish cluster-randomised, multicentre study of an Individual Early Warning Score (I-EWS). BMJ Journals. https://doi.org/10.1136/bmjopen-2020- 037802

Yazdanyar, A., Greenberg, M. R., Chen, Z., Li, S., Greenberg, M. R., Buonanno, A. P., Burmeister, D. B., & Jarjous, S. (2022). A customized early warning score enhanced emergency department patient flow process and clinical outcomes in a COVID-19 pandemic. ProQuest.

Dwyer, T., Flenady, T., Signal, T., Boyle, C. M., Connor, J., Le Lagadec, D., Goodwin, B., & Browne, M. (2024). A theoretical framework for identifying sociocultural factors that influence nurses' compliance with early warning systems for acute clinical deterioration: A cross-sectional survey. International Journal of Nursing Studies, 158, 104846.https://doi.org/10.1016/j.ijnurstu.2024.10 4846

Haegdorens, F., Monsieurs, K. G., De Meester, K., & Van Bogaert, P. (2019). An intervention including the national early warning score improves patient monitoring practice and reduces mortality: A cluster randomized controlled trial. Journal of Advanced Nursing, 75(8), 1719–1729.https://doi.org/10.1111/jan.14034

Olino, L., Gonçalves, A. C., Street, J. K. R., Vieira, L. B., Machado, M. L. P., Molina,

KL, & Cogo, ALP (2019). Effective communication for patient safety: Transfer Note and Modified Early Warning Score . Magazine Gaucho of Nursing, 40 (esp) , e20180341. https://doi.org/10.1590/1983- 1447.2019.20180341

Gerry, S., Birks, J., Bonnici, T., Watkinson, P. J., Kirtley, S., & Collins, G. S. (2017). Early warning scores for detecting deterioration in adult hospital patients: A systematic review protocol. BMJ Open, 7(e019268).