Influences Shaping Clinicians' Monoclonal Antibody and Immune Checkpoint Inhibitor Preparation and Administration Management Practices: a Systematic Review

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Background: Monoclonal antibodies (mAbs) and immune checkpoint inhibitors (ICPIs) have expanded treatment options for cancer and non-malignant diseases, with reduced side effects and improved survival outcomes compared to chemotherapy. However, challenges arise with unconjugated mAbs due to unclear hazardous classifications, leading to variations in safety practices among healthcare organisations. Standardised guidelines are crucial to ensure clinician safety during preparation and administration, given the links between these agents, immune dysfunction, and increased risks.

Aim: To identify the influences shaping cancer clinicians' awareness of safe handling, current practices, and recommended practices for those involved in the administration and preparation of unconjugated mAbs and ICPIs

Design: Systematic review (PROSPERO) CRD42022367767

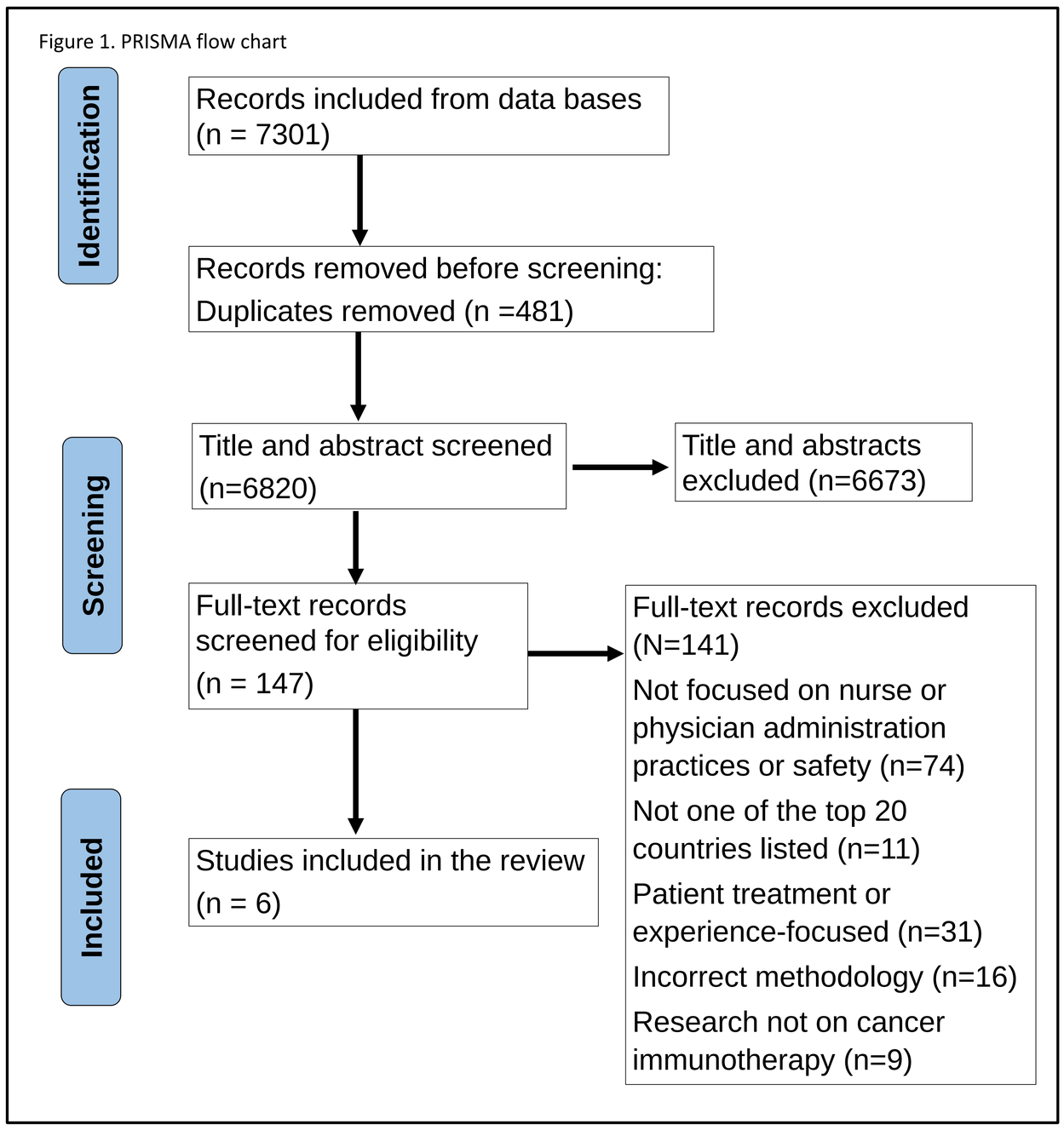
Data Sources: CINAHL, EMBASE, Joanna Briggs Institute, OVID, MEDLINE and Cochrane

Eligibility criteria: Peer-reviewed studies presenting empirical evidence on the safety of clinicians handling unconjugated mAbs and ICPIs published between 2012 and 2023. 'Handling' in this review encompassed activities such as checking, administration, preparation, and disposal of equipment and clinical waste associated with unconjugated mAbs and ICPIs

Risk of bias: Two reviewers evaluated the risk of bias and the quality of selected studies using the Joanna Briggs Institute (JBI) Critical Appraisal Tools for case reports, surveys, and expert text reviews and employed the AGREE II instrument to assess guideline studies.

Results: 7301 identified studies, 481 duplicates were removed, and 6673 were excluded after title and abstract review. A full-text review was conducted on 147 studies; six studies were included (Figure 1).

Figure 1. PRISMA flow chart



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Narrative synthesis: A narrative synthesis generated two themes: 1) Ambiguity contributes to variation in handling practices; and 2) Continuing professional development (CPD) is vital but hard to implement without evidence.

Ambiguity contributes to variations in handling practices

- Differing hazardous classification of unconjugated mAbs and ICPIs contributes to diverse handling and PPE recommendations.
- Pharmacists preparing unconjugated mAbs and ICPIs are advised to wear full PPE, whereas other clinicians offered different PPE advice.
- The lack of robust evidence on occupational exposure risks makes it challenging for healthcare organisations to establish and maintain consistent and safe practices fro unconjugated mAbs and ICPIs.

CPD is vital but hard to implement without robust evidence

- Aligning CPD with policies is challenging due to concerns over unconjugated mAb and ICPI safety.
- CPD is key to enhancing cancer care quality and clinician attitudes.
- Cancer nurses face secondary exposure risks from administering unconjugated mAbs and ICPIs.
- The uncertain risk necessitates cancer nurses' engagement in CPD for maintaining safety and competency with unconjugated mAbs and ICPIs.

Implications for nursing: In nursing, policy gaps and inconsistent CPD related to unconjugated mAbs and ICPIs may expose nurses to risks. Understanding the educational needs of nurses and global standardised guidelines are urgently needed.

Conclusion: Lack of evidence regarding long-term risks and consensus creates uncertainty about the hazardous nature of unconjugated mAbs and ICPIs. Resulting in varied risk reduction strategies during preparation and administration, and inconsistent CPD. Protecting the long-term health of clinicians necessitates consensus on risk reduction strategies. This will be challenging without compelling evidence or international agreement on their hazardous classification.

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Reference:
Ballard, A., Thamm, C., Ogle, T., & Phillips, J. L. (2024). Influences shaping clinicians' monoclonal antibody and immune checkpoint inhibitor preparation and administration management practices: A systematic review. *Seminars in Oncology Nursing*, 151583 -151583. https://doi.org/10.1016/j.soncn.2024.151583