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Definitions of Severe Preeclampsia in Clinical Practice Guidelines, Research Studies, and Surveillance Sources: A Systematic Survey Protocol

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ADMINISTRATIVE INFORMATION

Support - No support.

Review stage at the time of initial registration - Formal screening of search results against eligibility criteria.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 6 November 2026 and was last updated on the 6 November 2026.

INTRODUCTION

Review question / Objective To identify and compare the definitions, clinical criteria, and thresholds used to define severe preeclampsia.

Rationale Severe preeclampsia is an important cause of maternal and perinatal morbidity and mortality. It can involve severe hypertension, neurological or visual symptoms, pulmonary edema, thrombocytopenia, renal or hepatic dysfunction, eclampsia, fetal growth restriction, and medically indicated preterm birth (1–3). In Canada, the prevalence of hypertensive disorders of pregnancy among hospital birth admissions increased from 6.1% in 2012 to 8.5% in 2021 (4). In Ontario, severe preeclampsia is an important category of severe maternal morbidity during pregnancy and the postpartum period (5).

The Canadian Obstetric Survey System (CanOSS) was established to support the systematic identification and review of severe maternal morbidity in Canada and to identify opportunities for improving maternity care (6). CanOSS-Ontario collaborates with the Better Outcomes Registry & Network Ontario (BORN Ontario), which provides registry infrastructure for data collection, governance, privacy protection, analysis, and knowledge translation. The initial CanOSS-Ontario surveillance cycle focuses on severe peripartum hemorrhage, with preeclampsia identified as a condition for a future review cycle (7,8). Reliable surveillance of severe preeclampsia requires a definition that can be applied consistently across Ontario hospitals.

However, severe preeclampsia is not defined consistently across clinical guidelines, research studies, and surveillance systems. Some guidelines use the term "preeclampsia with severe features," whereas others identify severe hypertension and specific maternal or uteroplacental complications without using a single severe-disease category (1–3). Definitions may differ in the clinical and laboratory criteria included, threshold values, confirmation requirements, and

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whether one or multiple criteria are required to classify a case as severe preeclampsia.

Previous systematic and scoping reviews have compared guidelines for preeclampsia and hypertensive disorders of pregnancy, including criteria related to severe disease (9,10). However, these reviews were not specifically designed to identify and compare definitions, clinical criteria, and thresholds for severe preeclampsia across guidelines, research studies, and surveillance sources. Therefore, this systematic survey will identify and compare the definitions, clinical criteria, and thresholds used to define severe preeclampsia. The findings will identify areas of agreement and variation and will provide evidence for a subsequent consensus process to develop an operational definition for CanOSS-Ontario surveillance.

Condition being studied The condition of interest is severe preeclampsia, including definitions that use the term "preeclampsia with severe features" or an equivalent severe category. Preeclampsia is a multisystem pregnancy disorder generally characterized by new-onset hypertension, usually after 20 weeks of pregnancy, together with proteinuria, maternal organ dysfunction, or uteroplacental dysfunction (2,3).

This systematic survey will examine the definitions, clinical criteria, and thresholds used to classify preeclampsia as severe. Sources addressing preeclampsia, hypertensive disorders of pregnancy, eclampsia, or HELLP syndrome will be considered only when information used to define severe preeclampsia can be extracted separately.

METHODS

Search strategy The search consists of two complementary parts. First, we will assess relevant clinical practice guidelines identified in previous systematic reviews of guidelines for preeclampsia and hypertensive disorders of pregnancy. The most recent review searched for clinical practice guidelines up to January 2025 [2]. With support from a health sciences librarian, we updated the guideline search in MEDLINE and Embase from January 1, 2025, to October 7, 2026. The overlap with the previous review was retained to reduce the risk of missing guidelines published near the date boundary. TRIP Pro and the Guidelines International Network Library were also searched.

Second, the librarian developed and ran a focused search in MEDLINE and Embase to identify other sources that define severe preeclampsia. The search combined terms for hypertensive disorders of pregnancy, severe preeclampsia, preeclampsia with severe features, and HELLP syndrome with terms related to diagnosis and definition. Title-field searching was used where appropriate to improve the relevance of the results. The complete MEDLINE and Embase search strategies will be provided exactly as run in an appendix.

We will also search relevant professional and organizational websites and the International Network of Obstetric Survey Systems website. We will check the reference lists of included sources and relevant reviews and conduct forward citation searching. Additional records identified through these searches will be checked for duplicates and assessed using the same eligibility criteria. No language restrictions were applied to records identified through the current database and supplementary searches.

Participant or population This systematic survey will not recruit participants. The population of interest is pregnant or postpartum individuals with severe preeclampsia, preeclampsia with severe features, or an equivalent severe category.

Sources from any country, healthcare setting, stage of pregnancy or postpartum period, and level of obstetric care will be considered. Sources addressing broader conditions, including preeclampsia, hypertensive disorders of pregnancy, eclampsia, or HELLP syndrome, will be eligible only when the definitions, clinical criteria, or thresholds used to define severe preeclampsia can be extracted separately.

Intervention Not applicable. This systematic survey will examine definitions, clinical criteria, and thresholds used to define severe preeclampsia and will not evaluate an intervention.

Comparator Not applicable. No comparative intervention will be evaluated. Definitions will be compared descriptively to identify similarities and differences in their clinical criteria and thresholds.

Study designs to be included We will include clinical practice guidelines; professional or governmental guidance; consensus or position statements; stand-alone definition or classification papers; and studies that develop, modify, validate, evaluate, or operationalize a definition of severe preeclampsia.

Studies reporting electronic health-record definitions or case-identification algorithms will be eligible when they provide clinical criteria or thresholds used to identify severe preeclampsia. Documents reporting definitions used by obstetric surveillance systems and confidential-enquiry programs will also be eligible.

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Eligibility criteria Sources will be included if they report severe preeclampsia, preeclampsia with severe features, or an equivalent severe category and provide at least one component, criterion, or threshold used in the definition.
Sources concerning general preeclampsia, hypertension in pregnancy, eclampsia, or HELLP syndrome will be excluded when information defining severe preeclampsia cannot be extracted separately. Sources focusing only on prediction, prevention, causes, biomarkers, treatment, management, or outcomes will also be excluded if they do not define severe preeclampsia.
Studies that only cite or apply an existing definition will be excluded unless they modify, validate, or evaluate that definition. Reviews will be used to identify potentially eligible original sources but will not be included as separate definitions unless they present a new or modified definition.
Sources from all countries and publication years will be eligible. No language restrictions will be applied to records identified through the current searches. For guidelines from the same organization, the most recent eligible version will normally be included. An earlier version will also be included if its definition differs meaningfully from the current version. When multiple publications report the same definition, they will be considered together and counted as one definition.

Information sources Information sources will include MEDLINE, Embase, TRIP Pro, and the Guidelines International Network Library. Clinical practice guidelines identified in previous systematic reviews of preeclampsia and hypertensive-disorder guidelines will also be assessed for eligibility.
Relevant websites of professional societies, government bodies, guideline-producing organizations, obstetric surveillance systems, confidential-enquiry programmes and reports, and the International Network of Obstetric Survey Systems will be searched. Reference lists of included sources and relevant reviews will be examined, and forward citation searching will be completed for included and key definition sources. Authors or issuing organizations may be contacted when a complete source or necessary information cannot be located. Canadian and Ontario interest holders may also be contacted to identify additional existing severe-preeclampsia definitions, guidelines, hospital protocols, surveillance documents, or other relevant sources that were not identified through the planned searches. Any suggested source will be assessed using the same eligibility criteria as all other records.

Main outcome(s) The principal variables of interest will be the components, criteria, and thresholds reported in definitions of severe preeclampsia or preeclampsia with severe features.
For each definition, we will record the terminology used, the clinical, laboratory, and other components included, the criteria used to identify severe preeclampsia, and any numerical or categorical thresholds. We will also record whether one finding alone or more than one finding is required to identify a severe case.
The synthesis will identify similarities and differences among the definitions. Effect measures and outcome timing are not applicable because the survey will not evaluate an intervention or estimate an association.

Additional outcome(s) Additional information will include the source type, publication year, country or jurisdiction, issuing organization, population, healthcare setting, and purpose of the definition. We will record how each definition was developed and whether it was validated or evaluated.
For different versions published by the same organization, we will record any changes in the components, criteria, or thresholds used to define severe preeclampsia.

Data management Search records were imported into Covidence and checked for duplicates. Two reviewers independently completed title-and-abstract screening. Two reviewers will independently assess potentially eligible sources during full-text review. Reasons for exclusion will be recorded in Covidence. Disagreements will be resolved through discussion or, when necessary, consultation with a third reviewer.
A standardized data-extraction form will be developed and pilot-tested using a small number of eligible sources representing different source types. The form will be revised as necessary before formal data extraction. One reviewer will extract the information, and a second reviewer will verify all extracted definitions, clinical criteria, and thresholds against the original source. Differences will be resolved through discussion or consultation with a third reviewer.
Records identified through organizational websites, reference-list checking, and forward citation searching will be imported into Covidence, checked for duplicates, and assessed using the same eligibility criteria.
When multiple publications report the same definition, they will be considered together and counted as one unique definition. Different guideline versions from the same organization will

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be recorded separately only when their definitions, clinical criteria, or thresholds differ meaningfully.
The study-selection process will be presented using a PRISMA flow diagram.

Quality assessment / Risk of bias analysis A formal risk-of-bias or guideline-quality assessment will not be conducted because the purpose of this systematic survey is to identify and compare the content of definitions rather than evaluate clinical recommendations, interventions, or effect estimates.
For each eligible source, we will record how the definition was developed and whether it was validated or evaluated. Incomplete reporting and the absence of validation will be considered when interpreting the findings. The frequency with which a clinical criterion or threshold is reported will not be interpreted as evidence of its validity, clinical importance, or suitability for surveillance.

Strategy of data synthesis The findings will be presented in structured evidence tables and summarized descriptively. Sources will be grouped by type, including clinical practice guidelines, definition-development or validation studies, electronic health-record studies, obstetric surveillance systems, and confidential-enquiry programs.
For each definition, we will present the terminology, clinical criteria, and thresholds reported in the original source. Similar criteria will be grouped together to support comparison, while the original wording and threshold values will be retained.
Where appropriate, counts and percentages will describe how frequently particular clinical criteria and thresholds appear across unique definitions. Duplicate publications reporting the same definition will be counted once. The most recent eligible guideline from each organization and any earlier version containing a meaningfully different definition will be presented separately.
No meta-analysis will be conducted because the systematic survey will compare definitions rather than effect estimates. The findings will identify areas of agreement and variation and provide evidence for the subsequent consensus process.

Subgroup analysis No statistical subgroup analysis is planned.

Sensitivity analysis No statistical sensitivity analysis is planned.

Language restriction No language restrictions were applied to the searches. Eligible non-English sources will be translated with assistance from fluent colleagues or appropriate translation resources.

Country(ies) involved The review will be carried out in Canada.

Other relevant information This registration concerns only the systematic survey of definitions, clinical criteria, and thresholds used to define severe preeclampsia. The subsequent modified Delphi survey, hybrid focus-group discussion, development of an operational definition, and pilot testing of the Data Collection Form and Assessor Form are not included in this registration.
This is a retrospective registration. The database searches, covering the period from inception to 7 October 2026, and title-and-abstract screening were completed before registration. A total of 105 records were initially retained for full-text assessment. Formal data extraction had not started at the time of registration.
Clinical practice guidelines identified in previous systematic and scoping reviews will be assessed using the same eligibility criteria and checked for duplication against records retrieved through the database searches. The final number of included sources will be determined through full-text assessment, deduplication, and supplementary searching. No predetermined number of included sources has been established.
The completed systematic survey will report the registration date, activities completed before registration, subsequent protocol changes, and reasons for those changes.

Keywords Severe preeclampsia; preeclampsia with severe features; definition; clinical criteria; thresholds; clinical practice guidelines; obstetric surveillance; systematic survey.

Dissemination plans The findings will be disseminated through a peer-reviewed publication, conference presentations, and CanOSS-Ontario Steering Committee and stakeholder meetings. The INPLASY registration number and DOI will be reported in the final publication. Important differences between the registered protocol and the completed systematic survey will be described and justified.
Where permitted, supplementary materials will include the complete search strategies, eligibility criteria, data-extraction headings, characteristics of included sources, and evidence tables. The findings will inform the subsequent consensus process to develop an operational definition of severe preeclampsia for CanOSS-Ontario surveillance.

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