Supplementary material

Supplementary Table 1: Quality Assessment For Case Cohort Studies

Selection (MAX 4 stars)	
1	Representativeness of the exposed cohort a) truly representative of the average _____ (describe) in the community b) somewhat representative of the average _____ in the community c) selected group of users eg nurses, volunteers d) no description of the derivation of the cohort
2	Selection of the non exposed cohort a) drawn from the same community as the exposed cohort b) drawn from a different source c) no description of the derivation of the non exposed cohort
3	Ascertainment of exposure a) secure record (eg surgical records) b) structured interview c) written self report d) no description
4	Demonstration that outcome of interest was not present at start of study a) yes b) no
Comparability (MAX 2 stars)	
5	Comparability of cohorts on the basis of the design or analysis a) study controls for _____ (select the most important factor) b) study controls for any additional factor
Outcome (MAX 3 stars)	
6	Assessment of outcome a) independent blind assessment b) record linkage c) self report d) no description

7	Was follow-up long enough for outcomes to occur a) yes (select an adequate follow up period for outcome of interest) b) no
8	Adequacy of follow up of cohorts a) complete follow up - all subjects accounted for b) subjects lost to follow up unlikely to introduce bias - small number lost - > ____ % (select an adequate %) follow up, or description provided of those lost) c) follow up rate < ____% (select an adequate %) and no description of those lost d) no statement

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Supplementary Table 2: Quality Assessment For Cross-Sectional Studies

Selection (MAX 5 stars)	
1	Representativeness of the cases: a) Truly representative of the population (consecutive or random sampling of cases). 1 score b) Somewhat representative of the average population (non-random sampling) . 1 score c) Selected demographic group of users. 0 score d) No description of the sampling strategy. 0 score
2	Sample size: a) Justified and satisfactory. 1 score b) Not justified. 0 score
3	Non-Response rate a) The response rate is satisfactory (≥95%). 1 Score b) The response rate is unsatisfactory (<95%), or no description. 0 Score
4	Ascertainment of the screening/surveillance tool: a) Validated screening/surveillance tool. 2 scores b) Non-validated screening/surveillance tool, but the tool is available or described. 1 score c) No description of the measurement tool. 0 score
Comparability (MAX 1 star)	
5	The potential confounders were investigated by subgroup analysis or multivariable analysis. a) The study investigates potential confounders. 1 score b) The study does not investigate potential confounders. 0 score
Outcome (MAX 3 stars)	
6	Assessment of the outcome: a) Independent blind assessment. 2 scores b) Record linkage. 2 scores c) Self report. 1 score d) No description. 0 score

7	Statistical test: a) The statistical test used to analyze the data is clearly described and appropriate. 1 score b) The statistical test is not appropriate, not described or incomplete. 0 score

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Supplementary Table 3: Case Cohort Studies Quality Assessment. Points ≥7 were considered as "good", 2 to 6 points were considered as "fair", and ≤1 point was considered as "poor" quality.

Study	1	2	3	4	5	6	7	8	Total
Bhaskar et al.	1	1	1	0	2	1	1	1	8
Devarbhavi et al.	1	0	1	0	0	1	1	1	5
Diaz-Quijano et al.	1	1	1	1	0	1	1	1	7
Djossou et al.	1	1	1	1	2	1	1	1	9
Fernández et al.	1	1	1	0	2	1	0*	0*	6
Gayathri et al.	1	1	1	1	2	1	1	1	9
Hsieh et al.	1	0	1	1	0	1	1	1	6
Huang et al.	1	1	1	1	2	1	1	1	9
Lam et al.	1	0	1	0	0	1	1	1	5
Lee et al.	1	1	1	0	2	1	1	1	8
Lee et al.	1	1	1	0	2	1	1	1	8
Leo et al.	1	1	1	1	2	1	1	1	9
Marois et al.	1	1	1	1	2	1	1***	0	8
McBride et al.	1	0	1	0	0	1	1	1	5
Nguyen et al.	1	1	1	0	2	0	1	1	7
Park et al.	1	1	1	0	1	1	1	0	6
Phakhounthong et al.	1	1	1	0	NA	1	1	1	6
Pongpan et al.	1	NA	1	0	NA	1	1	1	5
Pongpan et al.	1	NA	1	0	2**	1	1	1	7
Potts et al.	1	1	1	1	2	1	1	1	9
Sachdev et al.	1	NA	1	0	0	1	1***	1	5
Srisuphanunt et al.	1	1	1	0	1	1	1	1	7
Suwarto et al.	1	NA	1	0	0	1	1	1	5
Suwarto et al.	1	NA	1	0	0	1	1	1	5

Tangnararatchakit et al.	1	NA	1	0	0	1	1	1	5
Md-Sani et al.	1	NA	1	0	2	1	1	1	7
Pang et al.	1	1	1	1	1	1	1	1	8

* Information not available in study

** differences between severity groups shown to be insignificant

*** follow up length not defined

Supplementary Table 4: Cross-sectional Studies Quality Assessment. Points ≥7 were considered as "good", 2 to 6 points were considered as "fair", and ≤1 point was considered as "poor" quality.

Study	1	2	3	4	5	6	7	Total
Chi et al.	1	1	1	1	1	1	1	7
Yang et al.	1****	1	1	2	1	2	1	9

**** convenience sampling from five government and three private hospitals

Supplementary Figure 1: Most sensitive for mortality in adults - Weighted risk scoring [27][1]

Variable	Score
Platelet <50 × 10^9 cells/L (initial)	0 or 1
Leukocytosis (during stay)	0 or 2
Gastrointestinal bleed <72h	0 or 2
Haemoconcentration (during stay)	0 or 2
Total	***0 to 7***

Score ≥ 2: High mortality risk

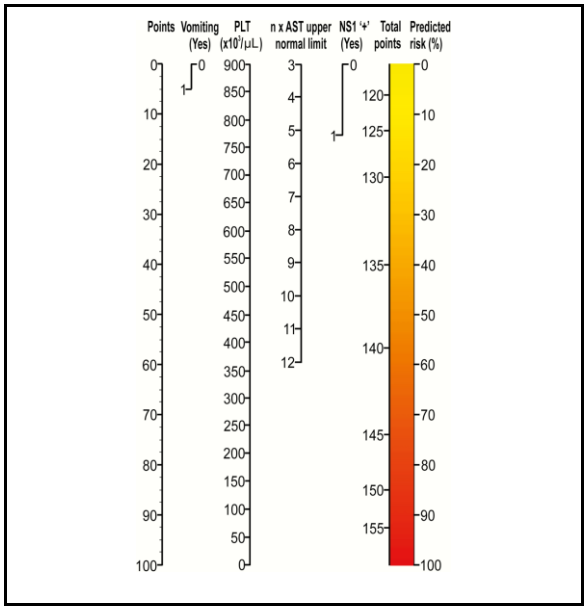
Supplementary Figure 2: Most specific for severity in children - BDSS formula [10]

BDSS = -1.297 + 4.234 × (**Pulse Pressure** in mmHg) + 1.284 × (**Mucosal bleed**: 1 or 0) + 0.489 × (**Third-spacing fluid loss**: 1 or 0)

BDSS > 0.9285: Severe dengue

Supplementary Figure 3: Most sensitive for severity in children - Nomogram of prognostic model [16][2]

[1] Licence CC BY 4.0 (assessed from https://www.mdpi.com/2077-0383/7/11/396 on 5 October 2024)
[2] Licence CC BY-NC-ND 4.0 (assessed from https://academic.oup.com/cid/article/64/5/656/2747462 on 5 October 2024)



Supplementary Figure 4: Most specific for mortality in children - Vasopressor-Ionotrope Score (VIS) formula [13]

VIS = Dopamine (μg kg^{-1} min^{-1}) + Dobutamine (μg kg^{-1} min^{-1}) + 100 × Epinephrine (μg kg^{-1} min^{-1}) + 100 × Norepinephrine (μg kg^{-1} min^{-1}) +10 × Vasopressin (U kg^{-1} min^{-1}) + 10 × Milrinone (μg kg^{-1} min^{-1})

VIS ≥ 22.5: High mortality risk

Supplementary Figure 5: Most specific for severity in adults - Warning Signs [20][3]

A combination of 3 of the Warning Signs for Severe Dengue as follows:

1. **Abdominal Pain**
2. **Mucosal Bleeding**
3. **Persistent Vomiting** OR **Change in Haematocrit**

Supplementary Figure 6: Most sensitive for severity in adults - Warning Signs [20]

At least 1 of the Warning Signs for Severe Dengue as follows:

1. **Abdominal pain**
2. **Persistent Vomiting**

[3]Licence CC BY 2.0 (assessed from https://bmcinfectdis.biomedcentral.com/articles/10.1186/1471-2334-13-498 on 5 October 2024)

3. **Mucosal bleeding**
4. **Clinical fluid accumulation**
5. **Hepatomegaly >2cm**
6. **Increase Haematocrit** (and concurrent reduced platelets)

Supplementary Figure 7: Most specific for severity in adults - Weighted risk scoring [32]

Variable	Score
Age ≥65-year-old	0 or 1
Leukocytosis (WBC >10×10^9)	0 or 2
Total	***0 to 3***

Score ≥ 1: High risk of severe dengue

Supplementary Figure 8: Most specific for mortality in adults - Qualitative integer scoring system [35]

Variable	Score
Age ≥65-year-old	0 or 1
Systolic Blood Pressure <90mmHg	0 or 1
Haemoptysis	0 or 1
Diabetes mellitus	0 or 1
Chronic bedridden	0 or 1
Total	***0 to 5***

Score ≥ 3: High mortality risk (45.5%)

Supplementary Figure 9: Probability of Intensive Care Unit (ICU) admission (only study with reported Sensitivity and Specificity) [36][4]

[4] Licence CC BY 2.0 (assessed from https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-014-0649-2 on 5 October 2024)

Probability of ICU requirement (P_{index}) = $0.106 \times x_1 + 0.004 \times x_2 + 0.326 \times x_3 - 10.601$

$P_{index} \geq -1.4$: *High risk of ICU admission*

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