

## Impact of H1N1 on socially disadvantaged populations: systematic review

### Summary

We conducted a systematic review on the occurrence of hospitalization, severe illness, and mortality attributable to H1N1 influenza among socially disadvantaged groups. Sixty-two studies were included; with 12 reporting on low-income and lower-middle-income economy countries (LIC/LMIC), and 50 reporting on high-income economy countries (HIC). Significantly more hospitalizations were observed among ethnic versus non-ethnic minorities in 2 HIC studies (1,313 patients, odds ratio 2.26 [95% confidence interval: 1.53–3.32]). Among hospitalized patients in HIC, no statistically significant differences were observed for ICU admissions and mortality.

### Implications

The prevalence of hospitalization, severe illness, and mortality due to H1N1 was high for ethnic minorities in HIC and individuals from LIC/LMIC. Two HIC studies reported increased hospitalization among ethnic minorities compared to non-ethnic minorities; there was no difference in ICU admission and mortality among ethnic and non-ethnic minorities in HIC studies. Our results suggest little difference in H1N1 burden between ethnic and non-ethnic minorities in HIC.

**Reference:** Tricco AC, Lillie E, Soobiah C, et al. Impact of H1N1 on socially disadvantaged populations: systematic review. *PloS one*. 2012;7:e39437.

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### What is the current situation?

- In 2009, a novel H1N1 influenza virus strain gave rise to the H1N1 pandemic (influenza A/Mexico/2009 (H1N1)). This pandemic was associated with a high burden of illness in terms of hospitalizations, severe illness, absenteeism, and cost. It was hypothesized that greater burden of illness was associated with poverty and individuals with disproportionate or no access to healthcare.

### What is the objective?

- We aimed to synthesize hospitalization, severe illness, and mortality data associated with H1N1 among socially disadvantaged populations; including low socioeconomic status, ethnic minorities living in high-income economy countries (HIC), groups with disproportionate or no access to healthcare, and low-income or lower-middle-income economy countries [LIC/LMIC].

### How was the review conducted?

- This systematic review was commissioned by the World Health Organization. A protocol was compiled using the PRISMA statement.
- Studies were identified by searching MEDLINE, EMBASE, and hand-searching The Eurosurveillance Journal and the CDC Morbidity and Mortality Weekly Report.
- Studies reporting hospitalization, severe illness, and mortality attributable to laboratory-confirmed 2009 H1N1 among socially disadvantaged populations were included.
- 2 independent reviewers conducted screening, data abstraction, and quality appraisal.
- Random effects meta-analysis was conducted.

### What did the review find?

- 62 studies with 44,777 patients were included.
- The prevalence of hospitalization for H1N1 ranged from 17–87% in HIC and 11–45% in LIC/LMIC. Of those hospitalized, the prevalence of ICU admission and mortality was 6–76% and 1–25% in HIC; and 30% and 8–15%, in LIC/LMIC, respectively. There were significantly more hospitalizations among ethnic versus non-ethnic minorities in 2 North American studies (1,313 patients, OR 2.26 [95% CI: 1.53–3.32]). There were no differences in ICU admissions (n=8 studies, 15,352 patients, OR 0.84 [0.69–1.02]) or deaths (n=6 studies, 14,757 patients, OR 0.85 [95% CI: 0.73–1.01]) among hospitalized patients in HIC. Though overall, the prevalence of hospitalization, severe illness, and mortality due to H1N1 was high for ethnic minorities in HIC and individuals from LIC/LMIC, there was little difference between ethnic and non-ethnic minorities in HIC for these outcomes.