The primary objectives of this study were:

- to demonstrate the feasibility of deterministically linking the Michigan EMS Information System (MI-EMSIS) version 2.2 data file to a state-level stroke registry,
- to assess completeness and accuracy of match results.

Methods

**Linkage Design:**

- Unidentified data from MI-EMSIS were linked deterministically to unidentified data from Get With The Guidelines—Stroke (GWGT) Patient Management Tool, using four data elements: receiving hospital code, patient admission date, date of birth, and sex.
- Completeness and accuracy of match results in addition to performance on EMS stroke quality measures and hospital outcomes were then calculated.

**Linkage Procedure:**

- The analysis was performed using Microsoft Office Professional Plus Excel 2016.
- The denominator of the EMS data included patients being transported to MOSAIC hospitals with a suspected stroke in 2017.
- The denominator of the GWGT data included confirmed stroke patients that arrived at the hospital via EMS or Mobile Stroke Unit in 2017.
- We simultaneously created groups using different matching criteria to link possible matched records from both datasets.
- We used different criteria to address potential EMS data inaccuracy. We stored the final matched records in a combined database.
- A successful linkage was defined as a suspected stroke identified by EMS that was confirmed to have had a stroke upon discharge.

References