

# Healthcare Utilization and Neonatal Stroke Outcomes: A Neighborhood-based Study

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## BACKGROUND

- **Neonatal arterial ischemic stroke (AIS)** represents an important cause of neurologic disability.
- However, there is a paucity of literature on the influence of **social determinants of health** on neurological outcomes and service utilization within the neonatal AIS population.
- Examining patterns of **neurological outcome** and **service utilization** in neonates diagnosed with AIS is an important step towards understanding the **neurodevelopmental and recovery trajectory**.

## OBJECTIVE

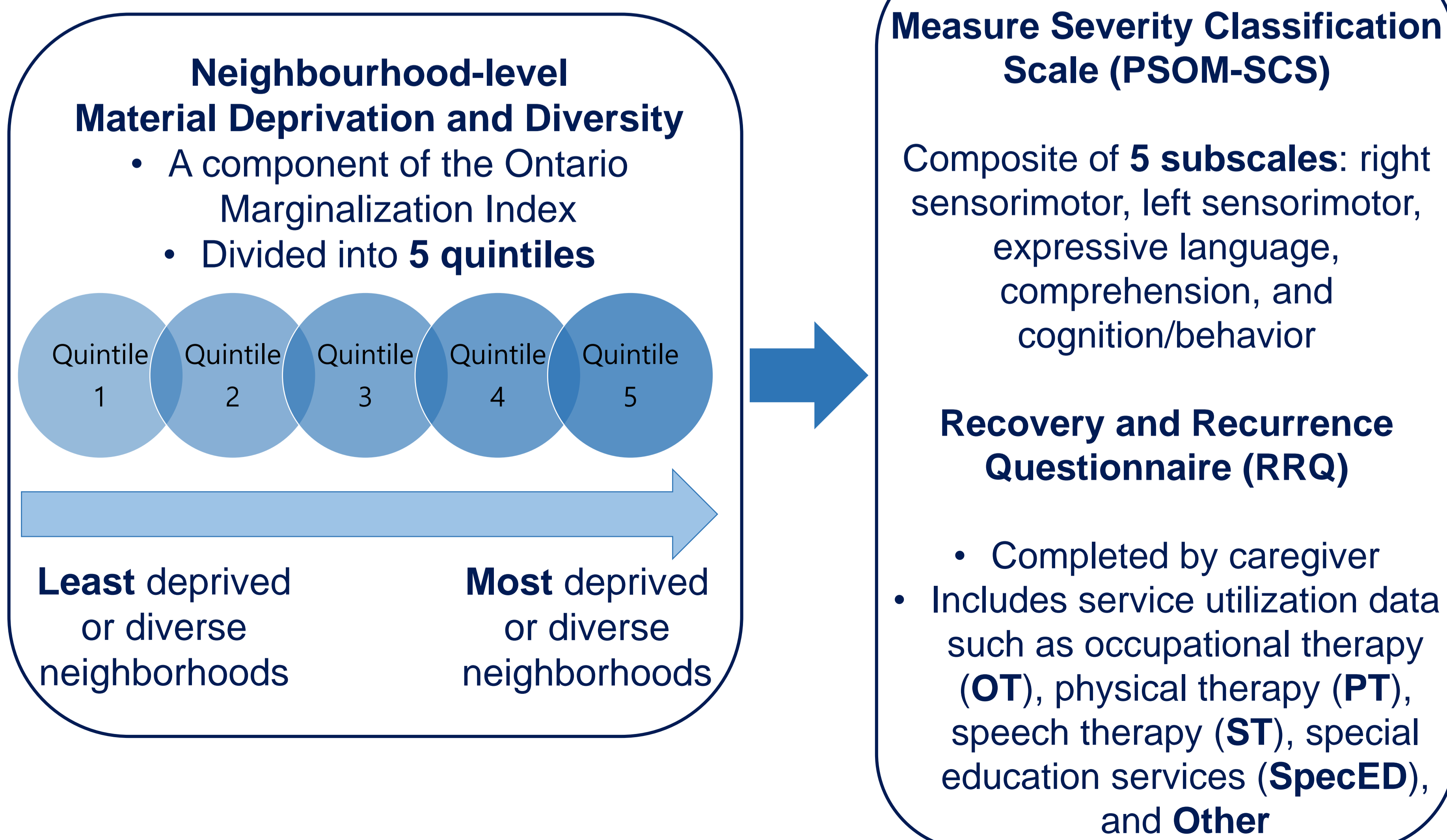
- Examined the variation in **neurological outcomes** and **service utilization** by sociodemographic factors, including **neighborhood-level material deprivation** and **diversity**.
- **Hypothesis: Higher** neighborhood-level material deprivation and diversity is associated with **decreased service utilization and worse neurological outcomes**.

## METHODS

### Participants

Participants included **168 neonates diagnosed with AIS** between **2004 and 2019** at The Hospital for Sick Children in Toronto, Canada.

### Measures



## RESULTS

Characteristic	Count (%)	
Male sex	108 (64)	
Infant race		
White	35 (21)	
Asian	27 (16)	
Black	4 (2)	
Other	23 (14)	
Not specified	79 (47)	
	N	Mean (SD)
Gestational age at birth (weeks)	162	39.04 (1.72)
Birth weight (g)	162	3319.80 (579.02)
1 min Apgar score	156	6.39 (2.76)
5 min Apgar score	155	7.99 (1.73)

Table 1. Baseline characteristics for all patients included.

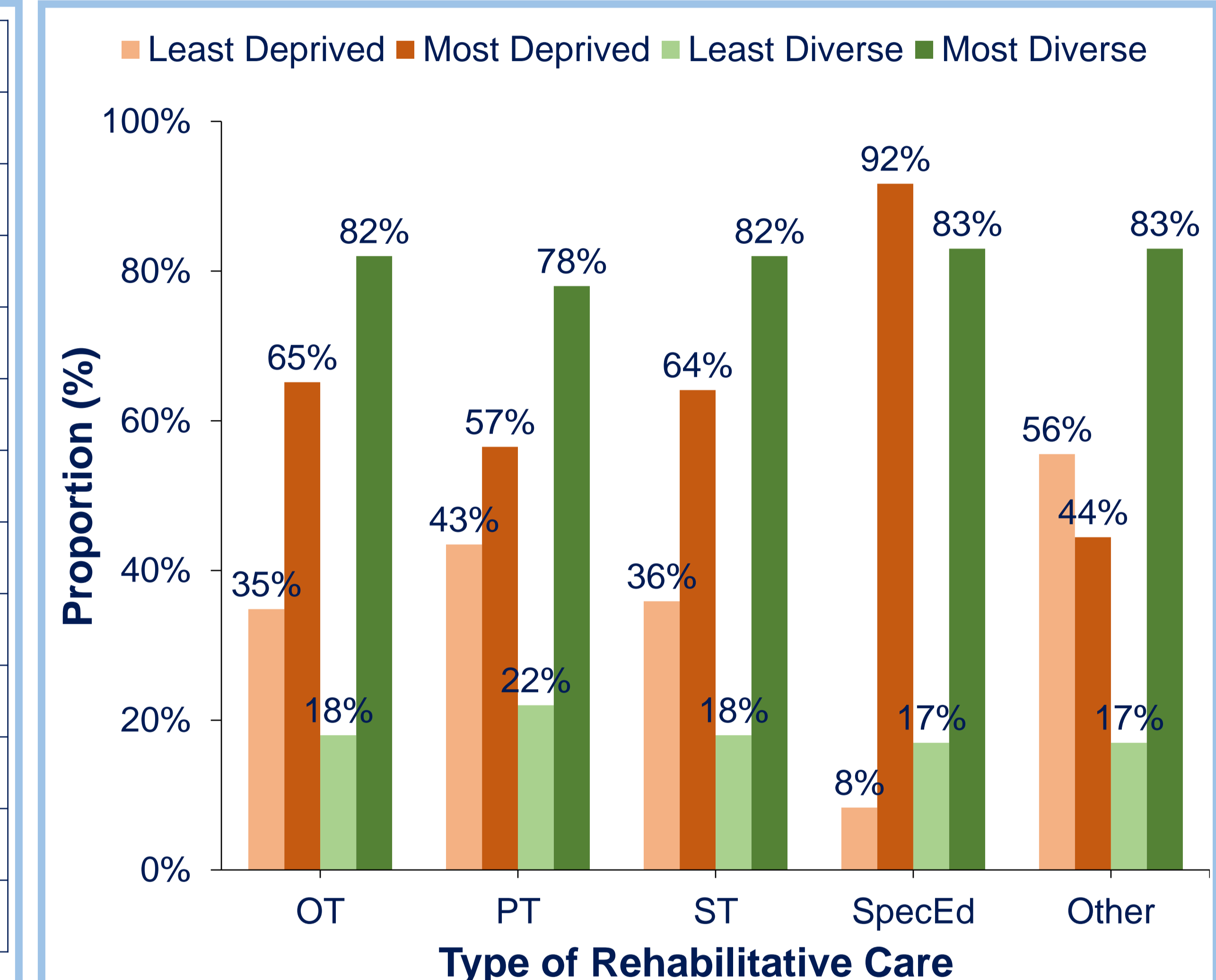


Figure 1. Utilization by neighborhood-level deprivation & diversity

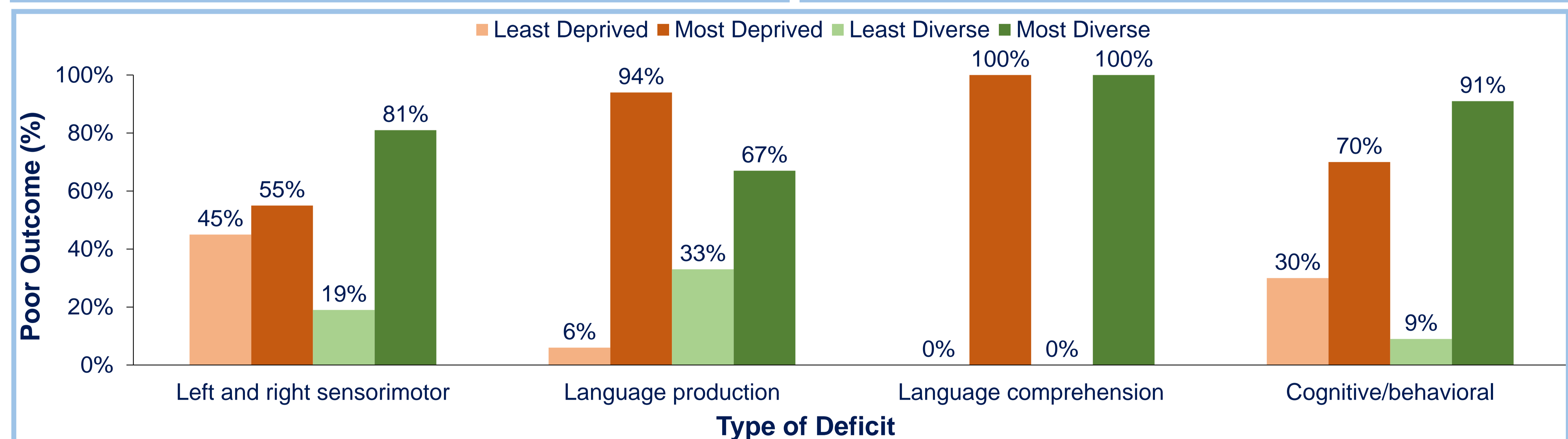


Figure 2. Proportion of patients with poor outcome by neighborhood-level deprivation & diversity.

## DISCUSSION

- Neurological outcomes were **favorable** in most patients at latest follow-up and the **majority utilized at least one service** over the study period.
- A significantly **higher** proportion of patients with **poor language production** lived in the **most deprived neighborhoods**. A significantly **higher** proportion of patients from the **most deprived** and **most diverse neighborhoods** received occupational therapy, physical therapy, speech therapy, or special education services.
- In future studies, **longer duration of follow-up** and collection of **individual-level sociodemographic data** is needed to better elucidate the **complex relationship** between neighborhood-based indicators, neurological outcomes, and rehabilitative care service utilization for neonates with AIS.

## REFERENCES

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