



The relationship between primary care physician utilization and hospitalizations for uncomplicated hypertension, an ambulatory care sensitive condition

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May 11, 2016




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What are ACSC?

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- ACSC = chronic conditions which can be effectively managed in the community with appropriate medical screening, monitoring and follow-up.
 - ACSC hospitalizations:
 - “Avoidable”
 - A measure of access to and quality of the primary health care system



History of ACSC



- Originally developed in 1993 by the US
 - identify hospitalizations that could potentially be avoided with adequate access to ambulatory or primary care in the 26 communities
- Since 1993 ACSC provided the basis for measuring adequacy of primary health care performance in the US, Canada and internationally
- “hot topic” – hundreds of publications on this health quality indicator

History of ACSC

- ACSC hospitalizations rates are currently reported in many countries however the list of conditions included and how they are measure differ
 - **Canada 7 conditions** - asthma, angina, COPD, diabetes, epilepsy, heart failure, hypertension
 - **US 16 conditions** - bacterial pneumonia, hypertension, dehydration, asthma, urinary tract infection, COPD, perforated appendix, diabetes short-term complication, low birth weight, diabetes long-term complication, angina without procedure, uncontrolled diabetes, congestive heart failure, lower-extremity amputation among patients with diabetes, pediatric gastroenteritis, peditaria asthma.



ACSC in Canada

- CIHI searches the most responsible diagnosis coding field in the DAD using specific ICD codes
- Exclusion criteria include:
 - those who died before discharge
 - individuals aged 75 years and older
 - admissions recorded as newborn or stillbirth
- CIHI reports age-standardized acute care hospitalization rates for all seven ACSC conditions per 100,000 population younger than 75 years of age
 - The rates are not risk adjusted and ED visits for ACSC are not measured or reported.



ACSC in Canada




- Individuals who experience an ACSC hospitalization
 - represented 6.0% of all hospitalized Canadians
 - used nearly 11.0% of all hospital days
- The use of ACSC hospitalizations as a performance indicator for primary care has not been validated in Canada

Sanmartin C et al. Ottawa, Ontario: Statistics Canada; 2011. Report No.: 82-622-X.




Objective

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- To examine association between primary care physician use and hospitalization due to hypertension using administrative data
 - Why Hypertension?
 - Affects nearly $\frac{1}{4}$ of Canadians
 - Mainly managed by primary care physicians
 - The #1 reason for outpatient visits in Canada



Methods

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- Data Source: fiscal years 1994 to 2008, Alberta
 - DAD
 - Physician Claims
 - Registry
 - All pts followed for 2 years



Methods



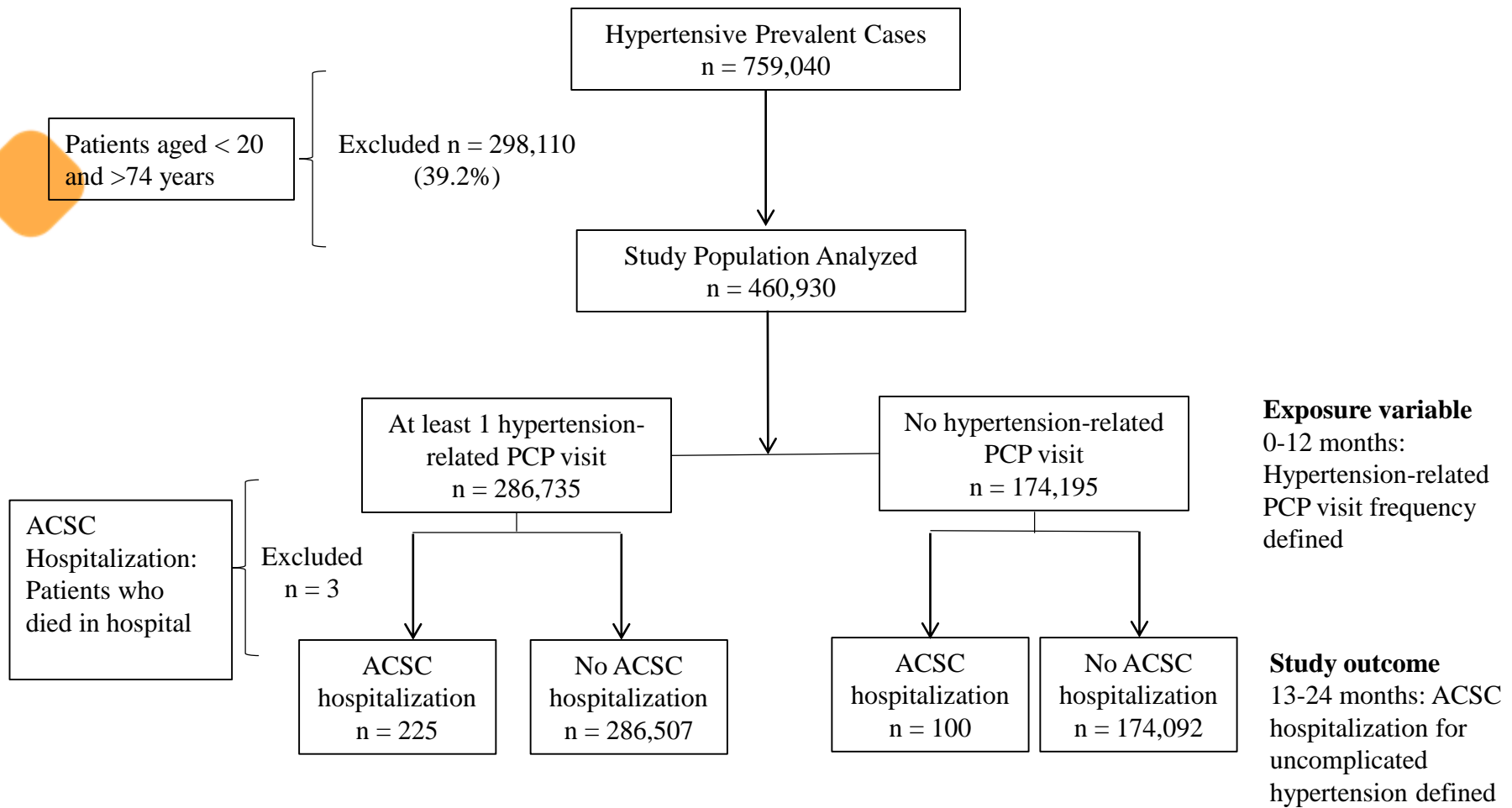
- Denominator – Adults aged 20 to 74 years with prevalent hypertension
 - Hypertension was defined using administrative data
 - 2 physician claims in 2 years [90%]
 - OR 1 hospitalization [10%]
- A one year wash-out was used to define “baseline comorbidities”

Methods

- Numerator: ACSC hospitalization for uncomplicated hypertension in second year after diagnosis (CIHI Methods)

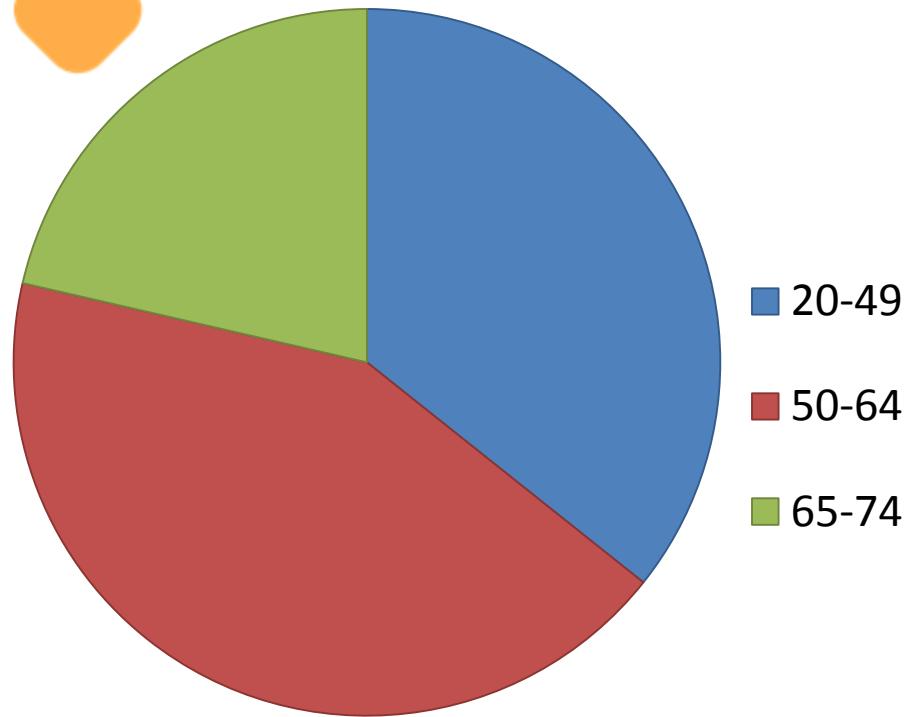
$$\text{Rate} = \frac{\text{Hospitalization for Uncomplicated Hypertension}}{\text{All Prevalent HTN Cases}}$$

- Defining Physician Visits: Out-patient hypertension-related primary care physician visits in the year following diagnosis of hypertension
 - ICD-9 codes: 401.x, 402.x, 403.x, 404.x, or 405.x

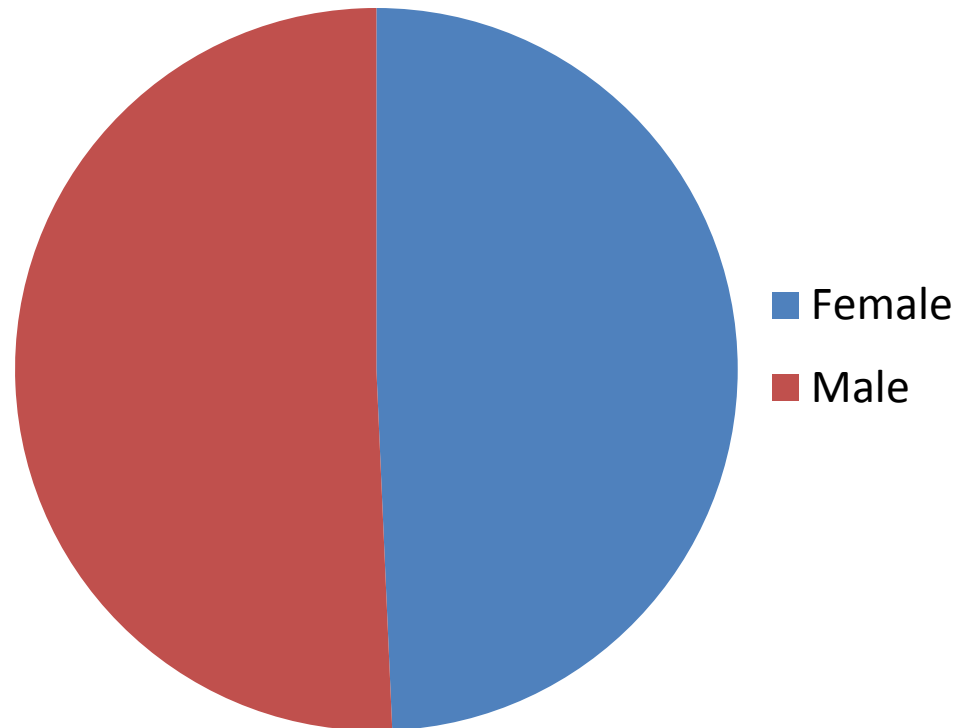


Flow chart for study population with study variable and outcome

Demographics

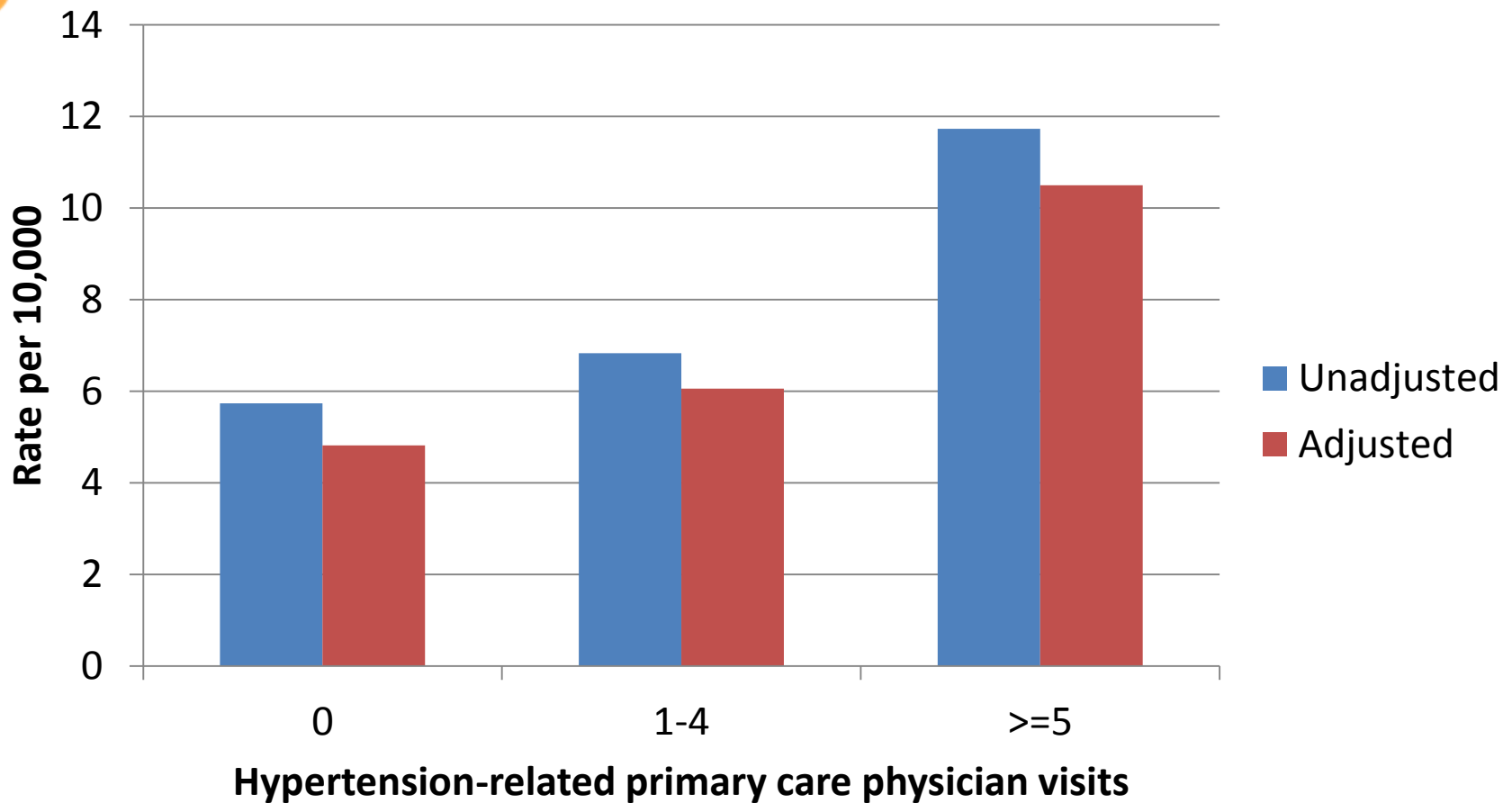


Age (years)

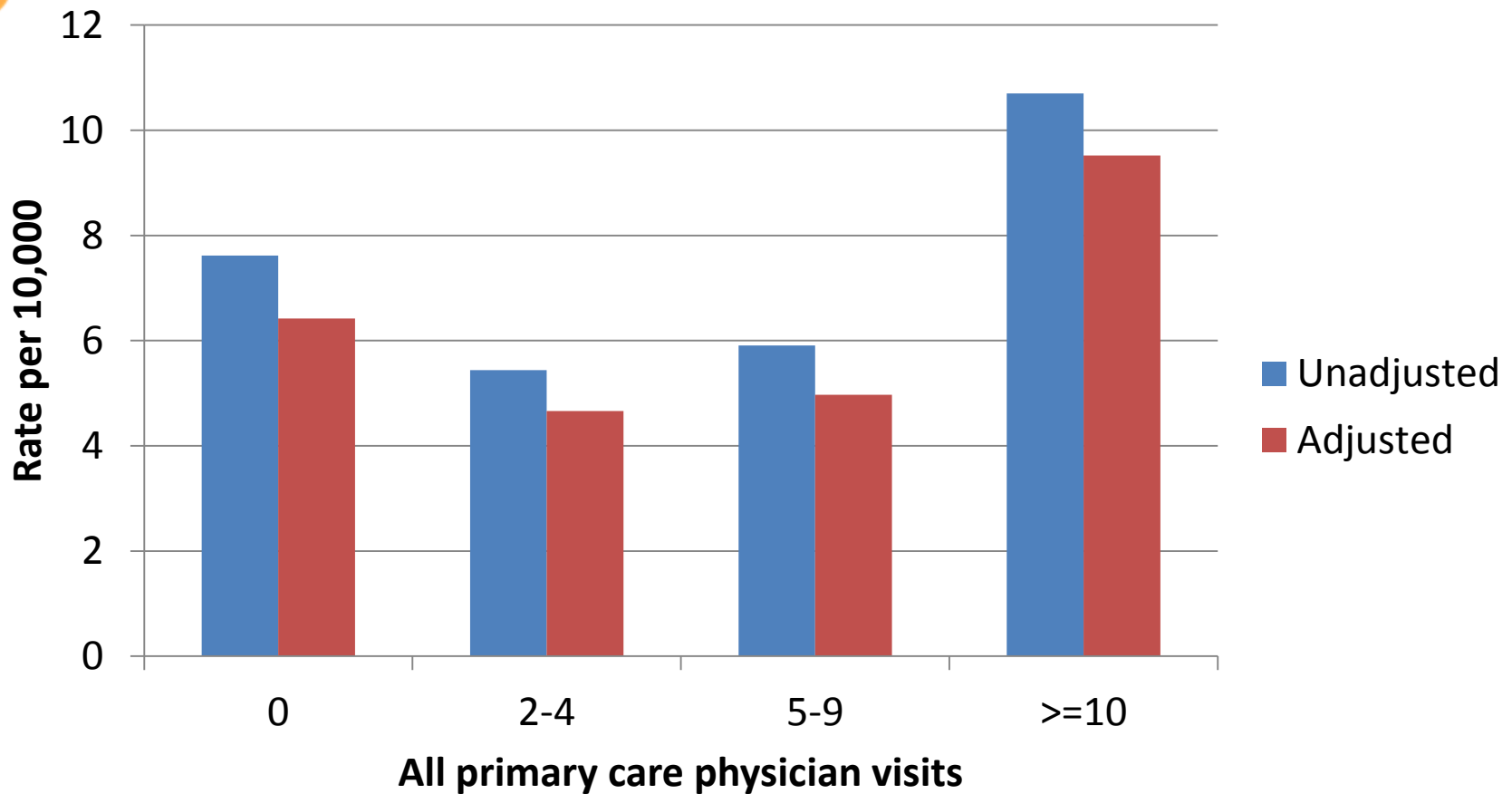


Sex

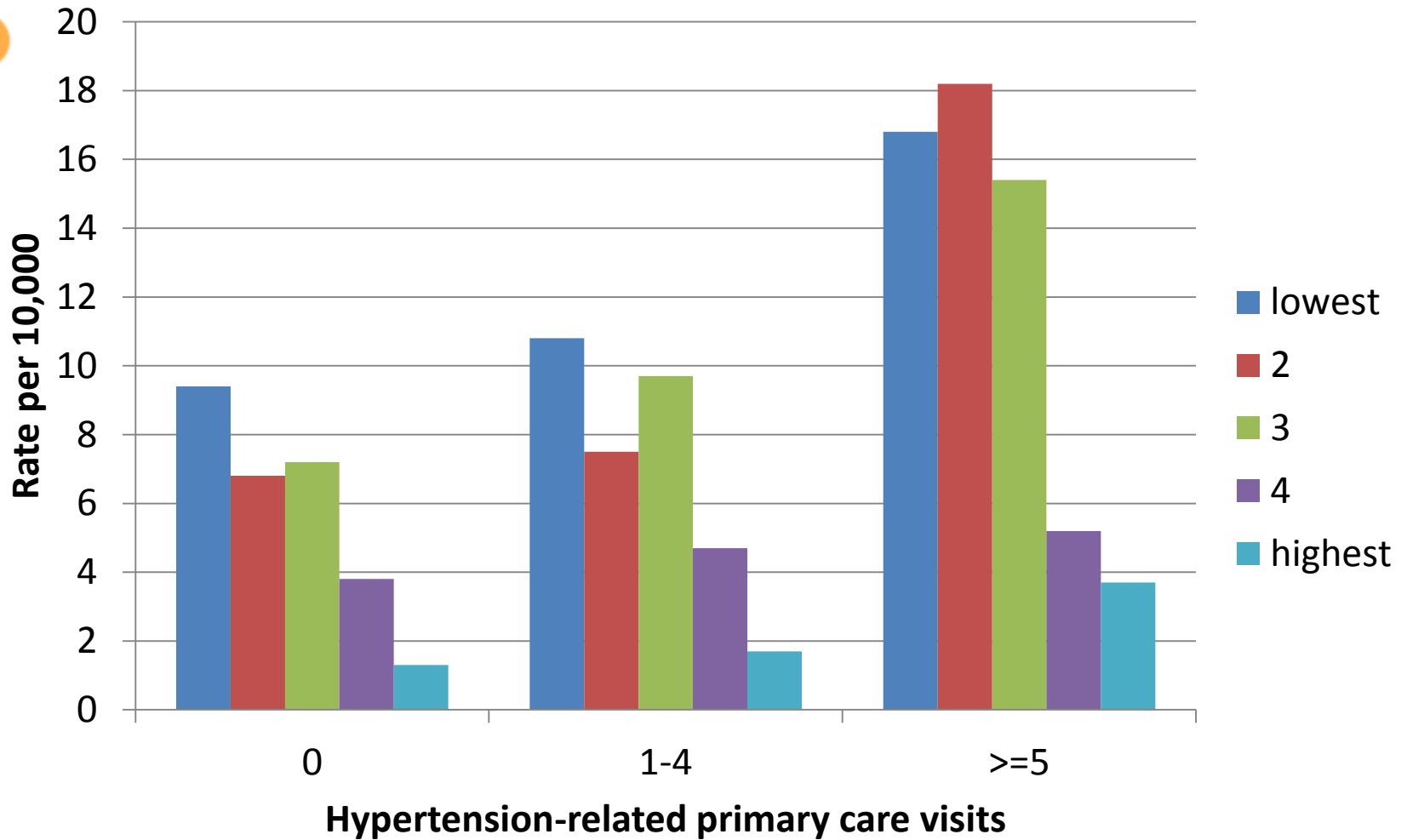
Rate of ACSC Hospitalization for Hypertension



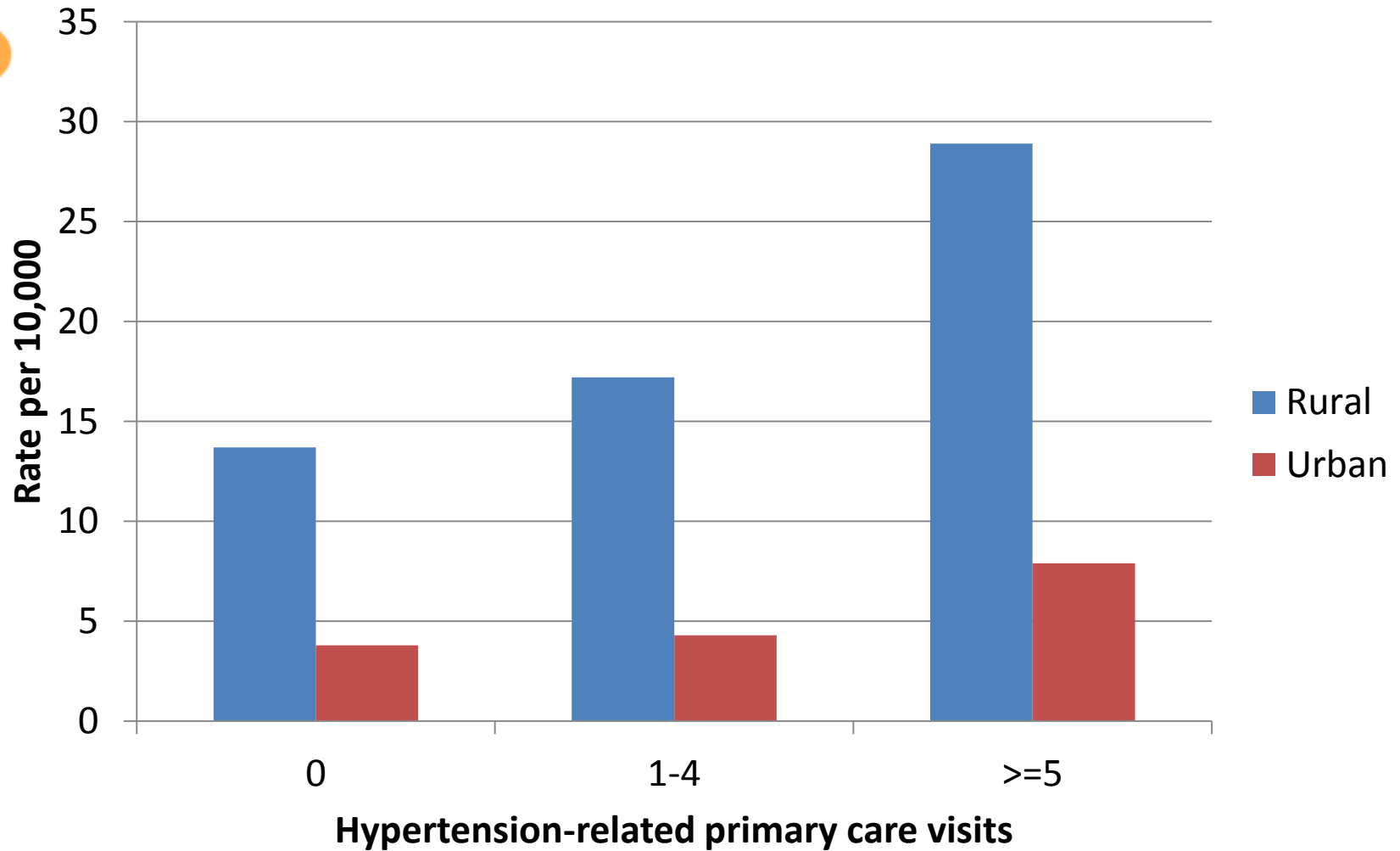
Rate of ACSC Hospitalization for Hypertension



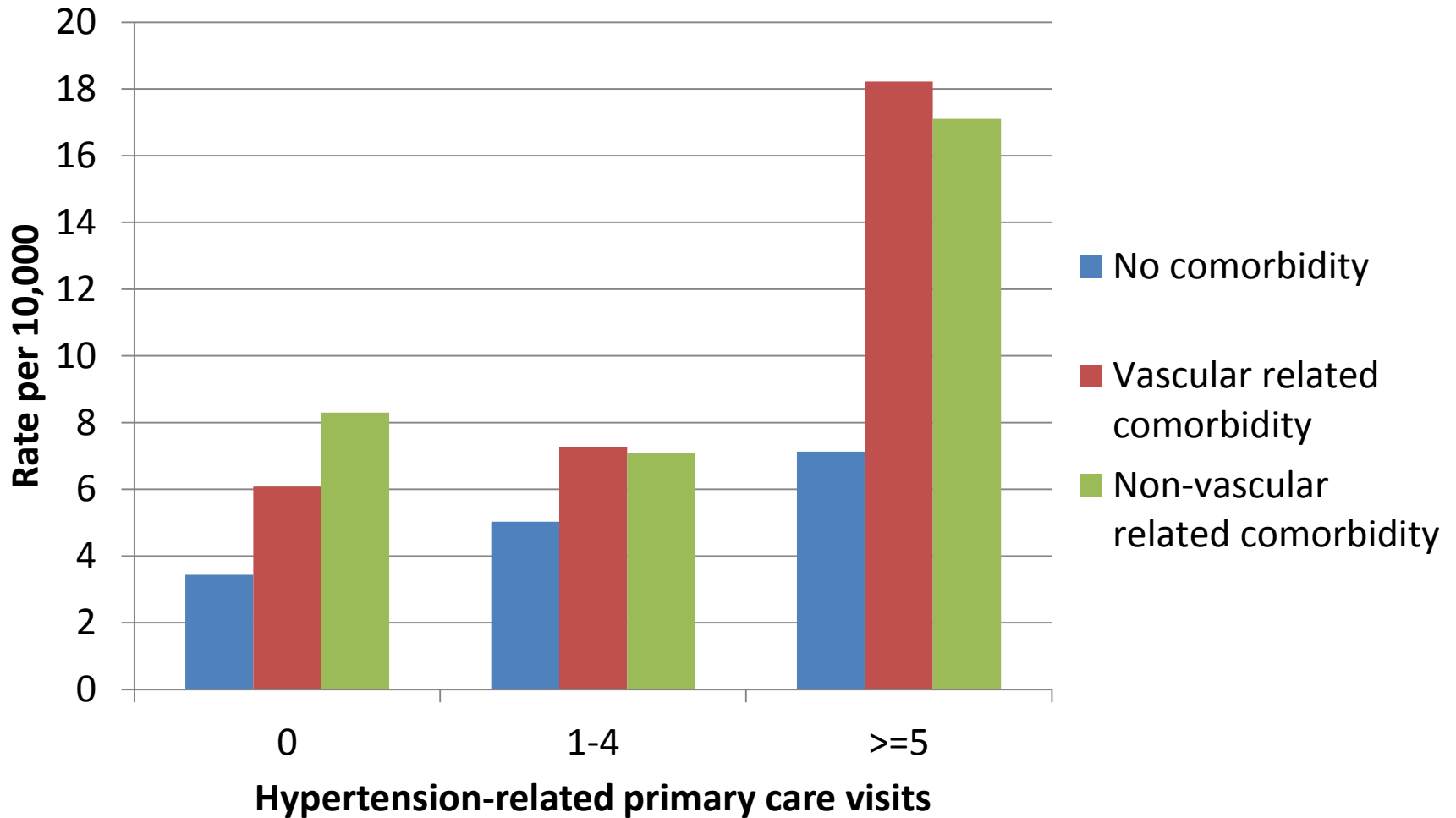
Income Quintile



Region



Comorbidity



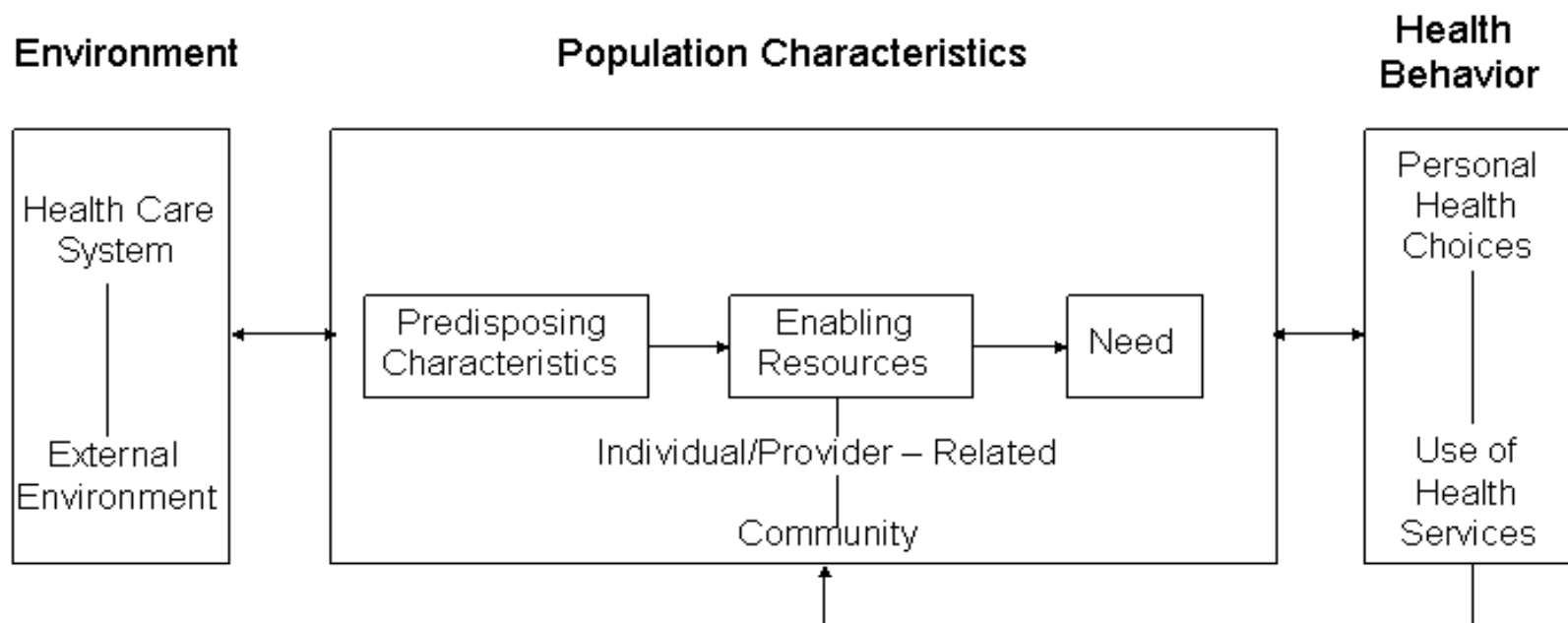


Discussion Points

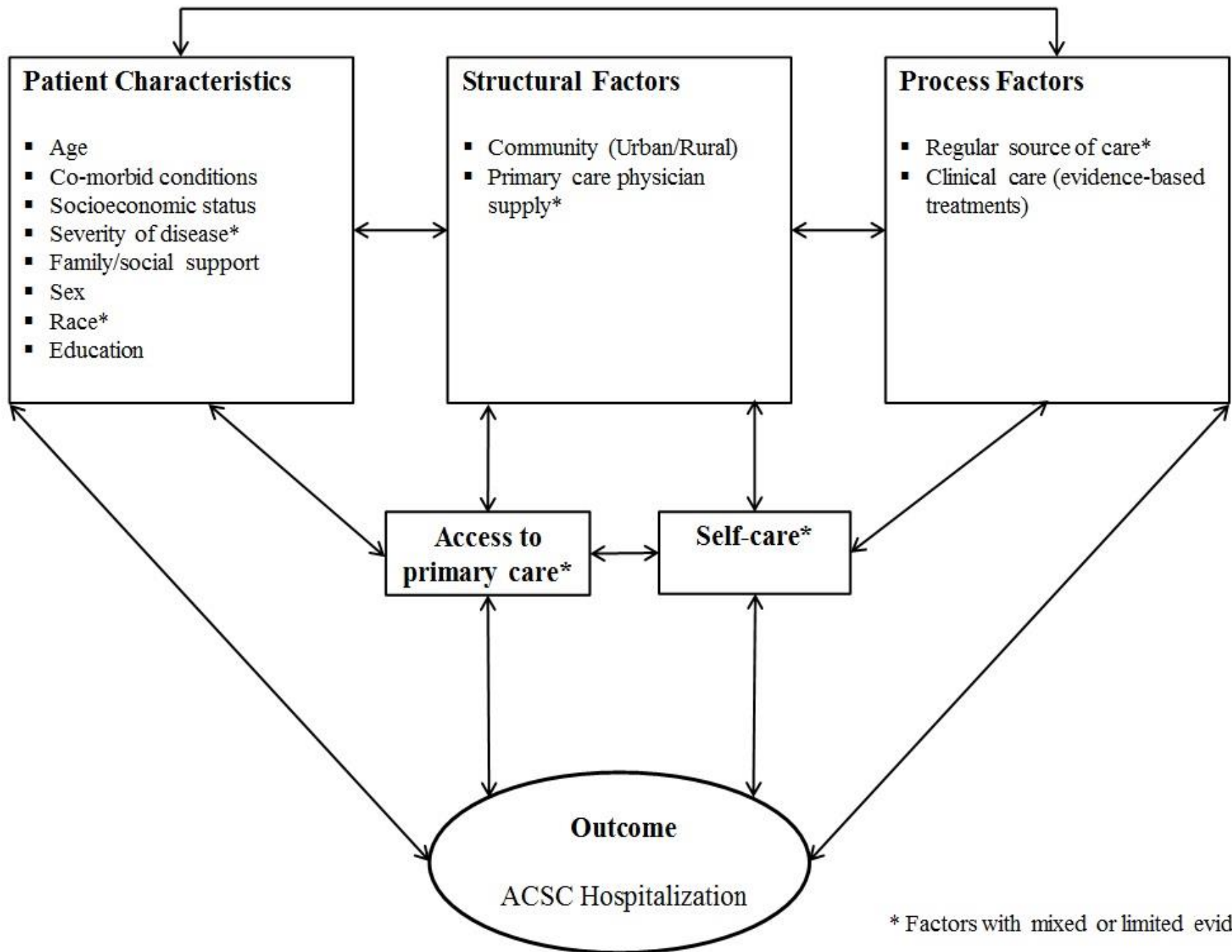


- Rate is very low
- The more hypertension-related primary care visits the more ACSC hospitalizations for uncomplicated hypertension
 - hospitalization for uncomplicated hypertension is not reduced by increased frequency of PCP visits
 - May not be a good indicator for assess to primary care
 - ambulatory care sensitive?
- Anderson Model of Health Care Utilization

The Anderson Model of Health Care Utilization



RM Anderson. Revisiting the behavioral model and access to medical care: does it matter?
J Health Social Behavior 1995;36: 1-10.



* Factors with mixed or limited evidence



Future Studies



- Examine the relationship between quality of primary care for patients with HTN and rates of ACSC
 - Using datasets that include blood pressure measurements to adjust for severity of hypertension

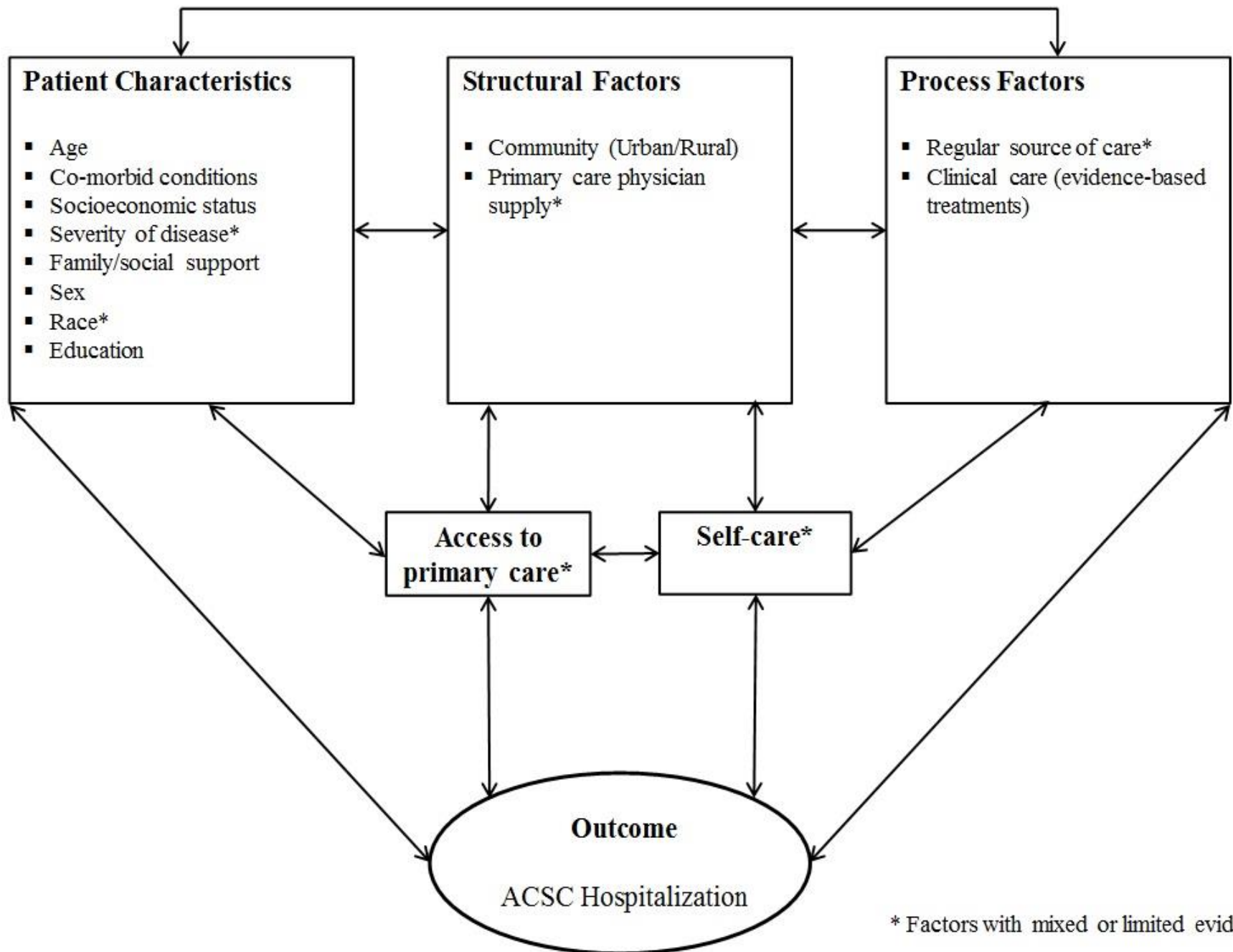
Acknowledgements

- The Hypertension Outcomes and Surveillance Team (HOST)
- Funding: CIHR and Libin Cardiovascular Institute of Alberta

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* Factors with mixed or limited evidence

Hospitalization due to Uncomplicated Hypertension

in AB, BC, MB and NFL

1/1000

