COVID19: The Benefits and Consequences of Non-Pharmaceutical Intervention Strategies

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INTRODUCTION
• Emerging research shows benefits of non-pharmaceutical interventions (NPIs) on slowing down spread of COVID19
• NPIs include shelter-in-place (SIP), school closure (SC), and voluntary quarantine (VQ) (entire household staying home if someone in the household is experiencing symptoms)

GOAL, METHODS, AND MAIN RESULTS
GOAL: Evaluate trade-offs between public health impact (e.g., number of cases and deaths) and number of homebound people in the state of Georgia under NPI scenarios.

METHODS
• Agent-based simulation model with heterogeneous mixing
• Contact network of interactions in peer groups (e.g., household, workplaces) with different rates of transmission
• Model includes COVID19-specific parameters and Georgia data
• Population: children (0-9), youth (10-19), adults (20-64), and elderly (65+)

RESULTS

DISCUSSION
• SC (Scenario 2) reduced percentage of infected population by less than 10% but more than doubled peak number of adults homebound
• SIP (Scenarios 5a-c) caused a significant number of adults homebound with minimal reduction in infections/deaths
• VQ (Scenarios 3a-c, 4a-c) compliance provided greatest benefits in terms of reduction in infections/deaths compared to number of adults homebound

ACKNOWLEDGMENTS AND FUNDING
The authors are thankful to state representatives for sharing data and members of the Georgia Tech community for supporting various parts of the project. The research was supported by the William W. George and by the Virginia C. and Joseph C. Mello endowments at Georgia Tech, NSF GRFP under Grant No. DGE-1650044, NSF grant MRI 1828187 and research cyberinfrastructure resources and services provided PACE at the Georgia Tech

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