

# Epidemiology and Burden of Acute Infectious Gastroenteritis Among Adult Outpatients Treated in US Health Systems

Rena Moon<sup>1</sup>, Tammy C. Bleak<sup>2</sup>, Ning Rosenthal<sup>1</sup>, Brianne Couturier<sup>2</sup>, Rachael Hemmert<sup>2</sup>, Tristan T. Timbrook<sup>2</sup>, Harold Brown<sup>1</sup>, Ferric C. Fang<sup>3</sup>

<sup>1</sup>PINC AI Applied Sciences, Premier Inc, <sup>2</sup>Global Medical Affairs, bioMerieux Inc,

<sup>3</sup>Department of Laboratory Medicine and Pathology, University of Washington



## BACKGROUND

Acute infectious gastroenteritis (AGE) is a common reason for outpatient visits and hospitalizations in the United States (US). This study aimed to understand the demographics and clinical characteristics, common pathogens detected, healthcare resource use (HRU), and cost among AGE adult outpatients visiting US health systems.

## METHODS

### Study Design and Data Source

- Retrospective cohort study using the Premier PINC AI™ Healthcare Database (PHD)

### Study Population

- Adults (aged ≥ 18 years) who had an outpatient visit with a principal discharge diagnosis of AGE between January 1, 2016 – June 30, 2021
- Patients with a history of AGE within 30 days prior to the visit and visits for diagnostic testing or surgery were excluded
- If the patient had multiple AGE-related outpatient visits, first visit during the study period was considered as “index” visit
- Pathogen detection analysis was performed among those with microbiology data available

### Outcomes

- HRU (e.g., stool testing and emergency room [ER] use during index visit, post-discharge services, ancillary diagnostic tests and hospitalization during 30-day follow-up period)
- Healthcare cost for index visit and 30-day follow-up visit (adjusted to 2021 US dollars per Consumer Price Index)

### Statistical Analysis

- Descriptive statistics
- Continuous variables were reported as mean (standard deviation) or median (1<sup>st</sup> quartile, 3<sup>rd</sup> quartile)
- Categorical variables were reported as counts and percentages

## RESULTS

- More women (>60%) visited hospitals as outpatients for AGE than men**
- Only 15% underwent stool work-up at the hospital**
- Clostridioides difficile* was the most common pathogen detected in the outpatient setting**

Fig. Outpatient type and discharge status of AGE outpatients

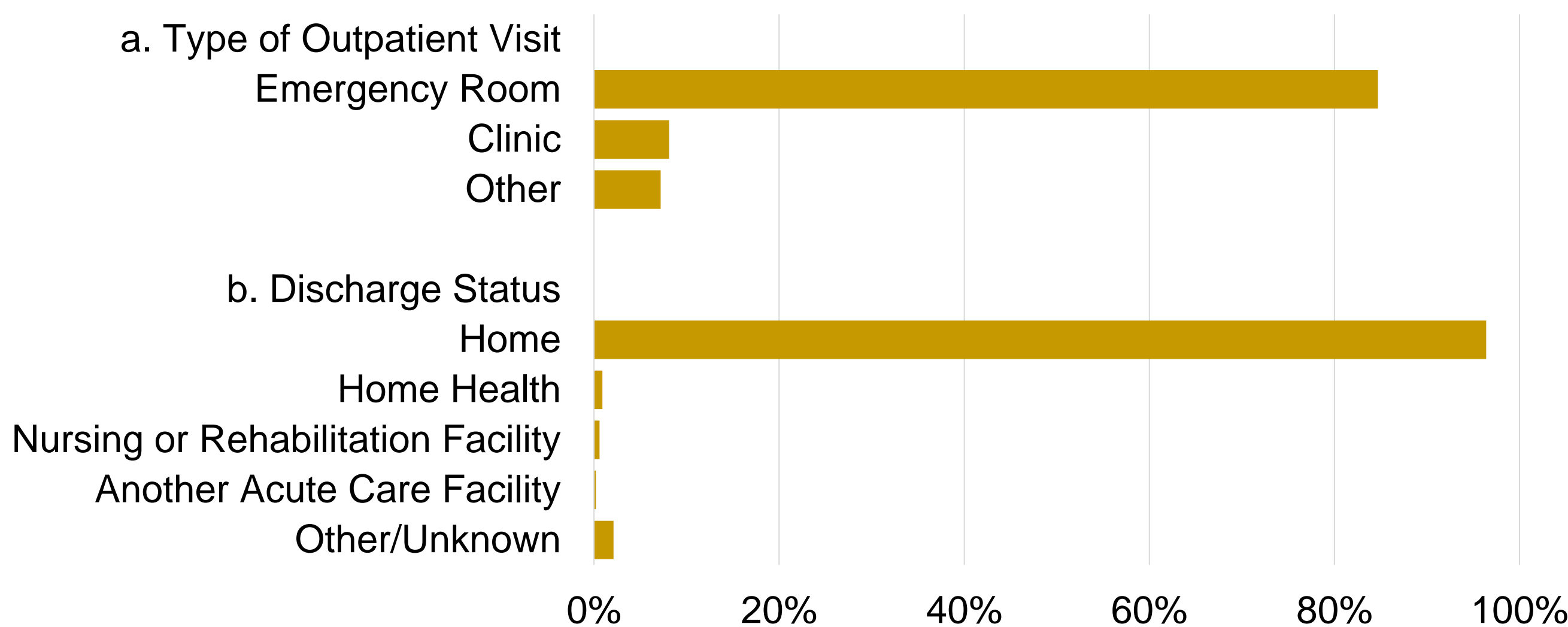


Table. Results among patients with a stool test and microbiology data during index visit

Patients with available stool testing results (n=12,469)		
Number of detected pathogens, n(%)		
None	5922	47.5%
One	6044	48.5%
More than one	503	4.0%
Patients with a detected pathogen (n=6,547)		
Common pathogens, n(%)		
<i>Clostridioides difficile</i>	4014	61.3%
Norovirus	785	12.0%
<i>Campylobacter spp.</i>	494	7.5%
Rotavirus	260	4.0%
<i>Giardia lamblia</i> or <i>Cryptosporidium</i>	214	3.3%

- Among 248,896 eligible patients, mean age was 44.3 (range 18-89+) years, 63% were women, and 69% were White
- Common comorbidities were hypertension (28%), chronic pulmonary disease (19%), diabetes (16%)
- Most patients (62%) did not have any pre-existing comorbidity
- Most patients were seen in the ER (85%) and were discharged home (96%) (Fig)
- Within 30-day of discharge, <1% underwent ancillary abdominal/gastrointestinal diagnostic testing (e.g., computed tomography, ultrasound, fluoroscopy)
- Within 30-day of discharge, 1% were hospitalized, and 3% had another outpatient visit due to AGE
- Mean cost of index plus 30-day follow-up visit was US \$1,338 per patient
- Among subgroup of patients with microbiology data available (n=12,469), nearly half (47.5%) had no pathogen detected and common pathogens detected were *Clostridioides difficile*, norovirus, and *Campylobacter spp.* (Table)

## CONCLUSIONS

- AGE is a common disease affecting adults of all ages, including young and healthy adults
- AGE is considerably more common in women than in men and is associated with a substantial economic burden, exceeding US \$330 million for the study population

Presentation number 1997, Session: Enteric Infection  
IDWeek 2022 | October 19-23, 2022

### References

- Bresee JS, et al. *J Inf Dis* 2012;205:1374-81
- Scallan E, et al. *Emerg Inf Dis* 2011;17:7-15
- El Bcheraoui C, et al. *JAMA* 2018;319:1248-60
- Chen Y, et al. *BMJ Open* 2015;5:e010161

### Disclosures

This work was funded by bioMerieux, Inc. RM, NR, and HB are employees of and hold shares in PINC AI Applied Sciences, Premier Inc., who received funding from bioMerieux for the completion of this study. TCB, BC, RH, and TTT are employees of bioMerieux, Inc. FCF is a paid consultant to bioMerieux, Inc.