Impact of the COVID-19 Pandemic on Emergency Care for Severe Non-COVID Patients: A Nationwide Retrospective Analysis by Phase

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IARIA

Hyo Jin Kim

- ✓ Professional Experience
  - Researcher at National Emergency Medical Center(2018~)
  - Researcher at Korea Disease Control and Prevention Agency(2014~2018)
- ✓ Publications
  - An update of the severe trauma scoring system using the Korean National Emergency Department Information System (NEDIS) database, AJEM, 2024
  - Epidemiology of stroke in emergency departments: a report from the National Emergency Department Information System (NEDIS) of Korea, 2018–2022, CEEM, 2023
  - National Follow-up Survey of Preventable Trauma Death Rate in Korea, JKMS, 2022

contents

01 Background

- ✓ Korea's COVID-19 response globally recognized
  - High testing, tracing, centralized coordination
  - Hospital bed capacity: **12.8/1,000 pop. vs OECD 4.3/1,000**
- ✓ BUT: Possible indirect impact on **non-COVID critical patients**
- ✓ In emergency medicine, **timely care = survival**
- ✓ Question: Did pandemic policies compromise ED care for severe non-COVID cases?

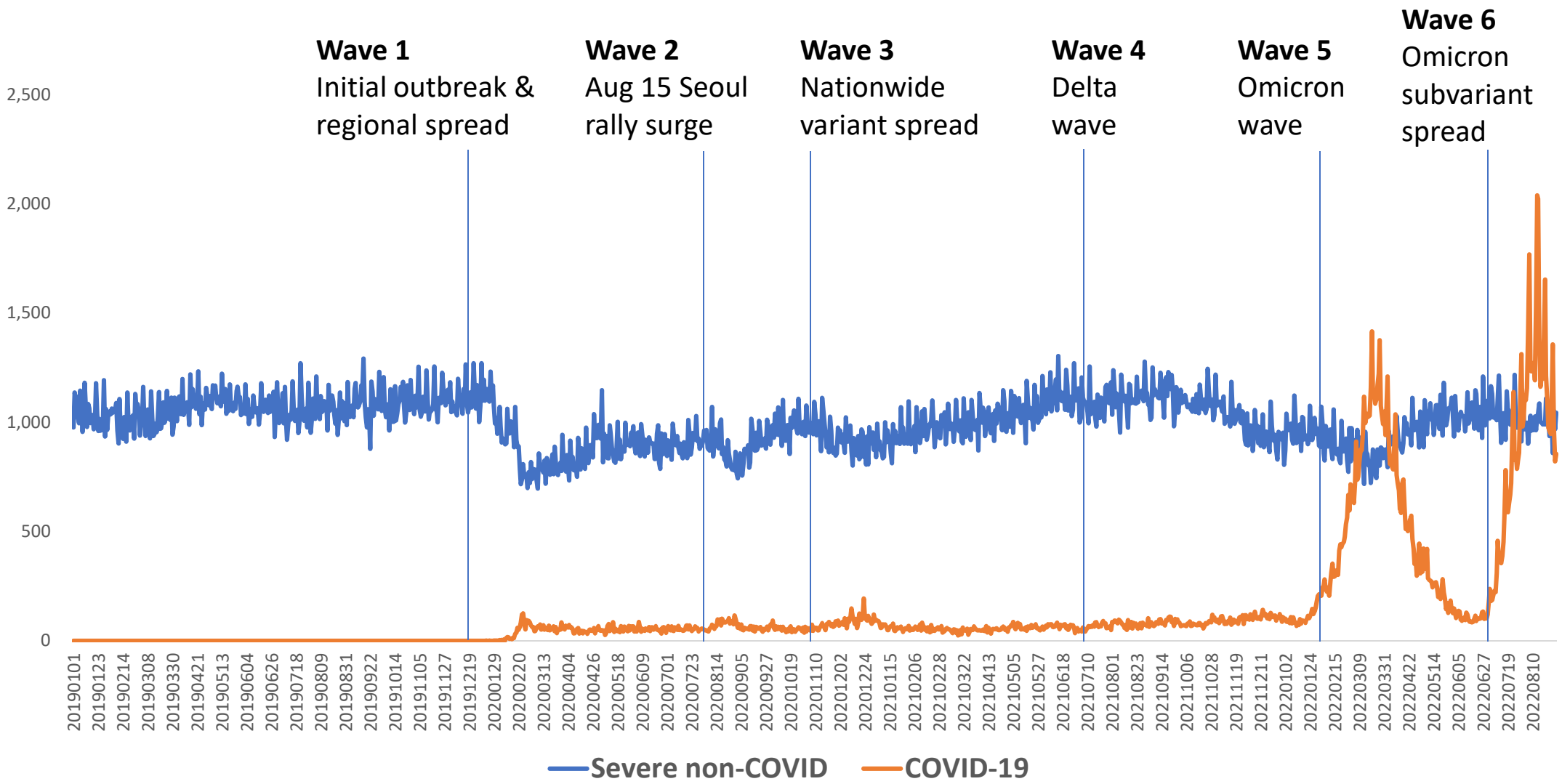
02 Study Objective

- ✓ **Objective:**
  To evaluate how emergency care delivery for severe non-COVID patients changed during the pandemic
- ✓ **Comparison groups:**
  COVID-19 patients vs severe non-COVID patients (KTAS Level 1–2)
- ✓ **Key indicators:**
  Onset-to-ED arrival time
  ED mortality
  ICU admission

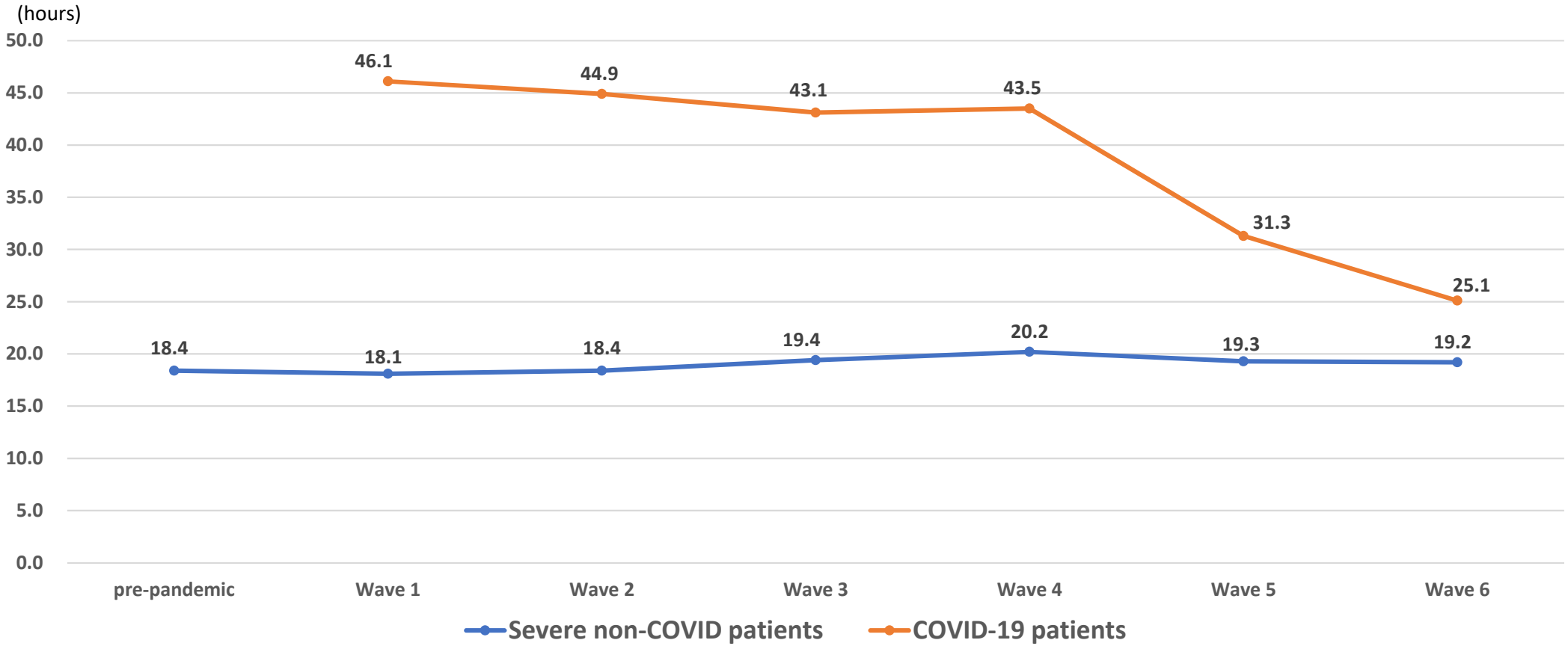
03 Methods

- ✓ **Design:** Nationwide retrospective analysis
- ✓ **Data source:** National Emergency Department Information System (NEDIS)
- ✓ **Period:** Jan 2019 – Aug 2022
- ✓ **Sample size:**
  - COVID-19 patients: **176,650**
  - Severe non-COVID patients: **1,317,624**
- ✓ **Analysis:** Chi-square, Kruskal-Wallis, $p<0.05$

04 Pandemic Phases (6 phases)



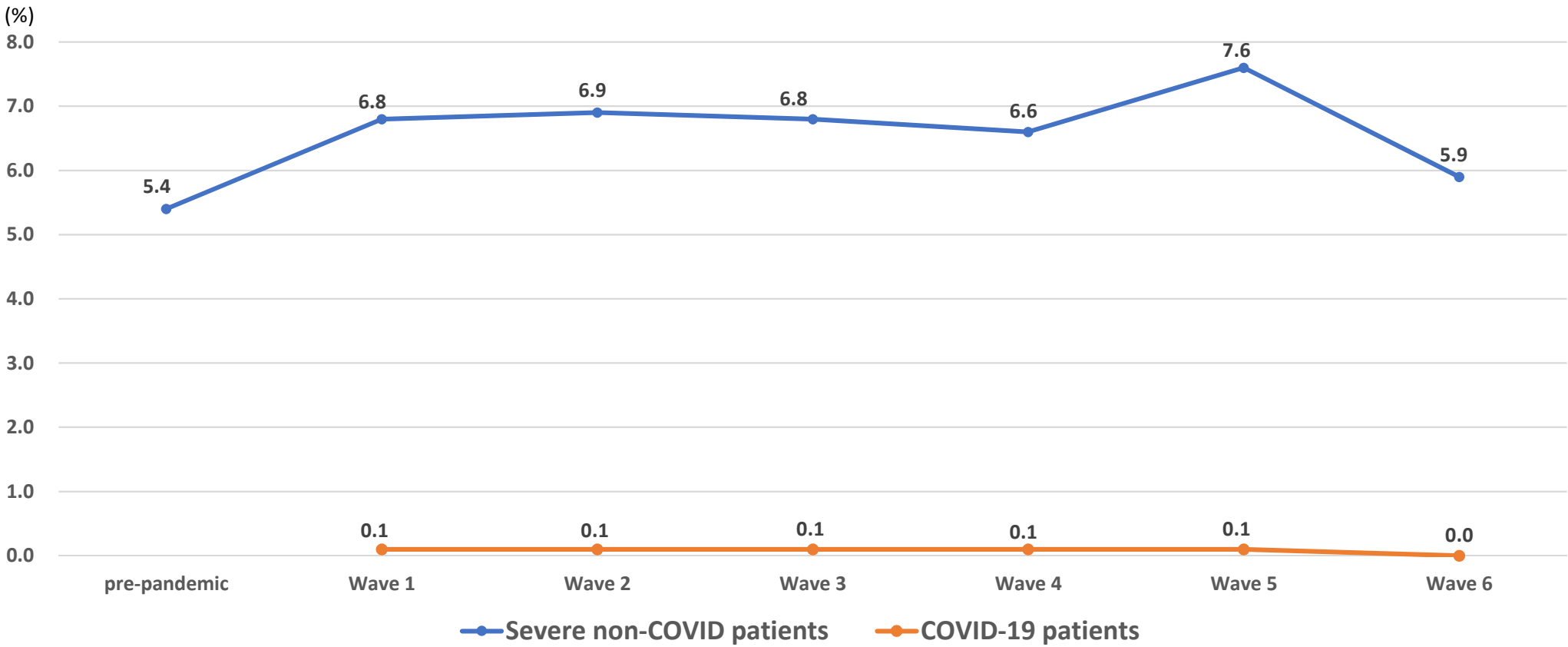
05 Results – Onset to ED Arrival Time



- ✓ **COVID-19 patients:**
  46.1h → 25.1h (significant decrease)
- ✓ **Severe non-COVID patients:**
  18.4h → 20.2h (delays increased)

→ Severe non-COVID patients arrived **later** despite urgent need

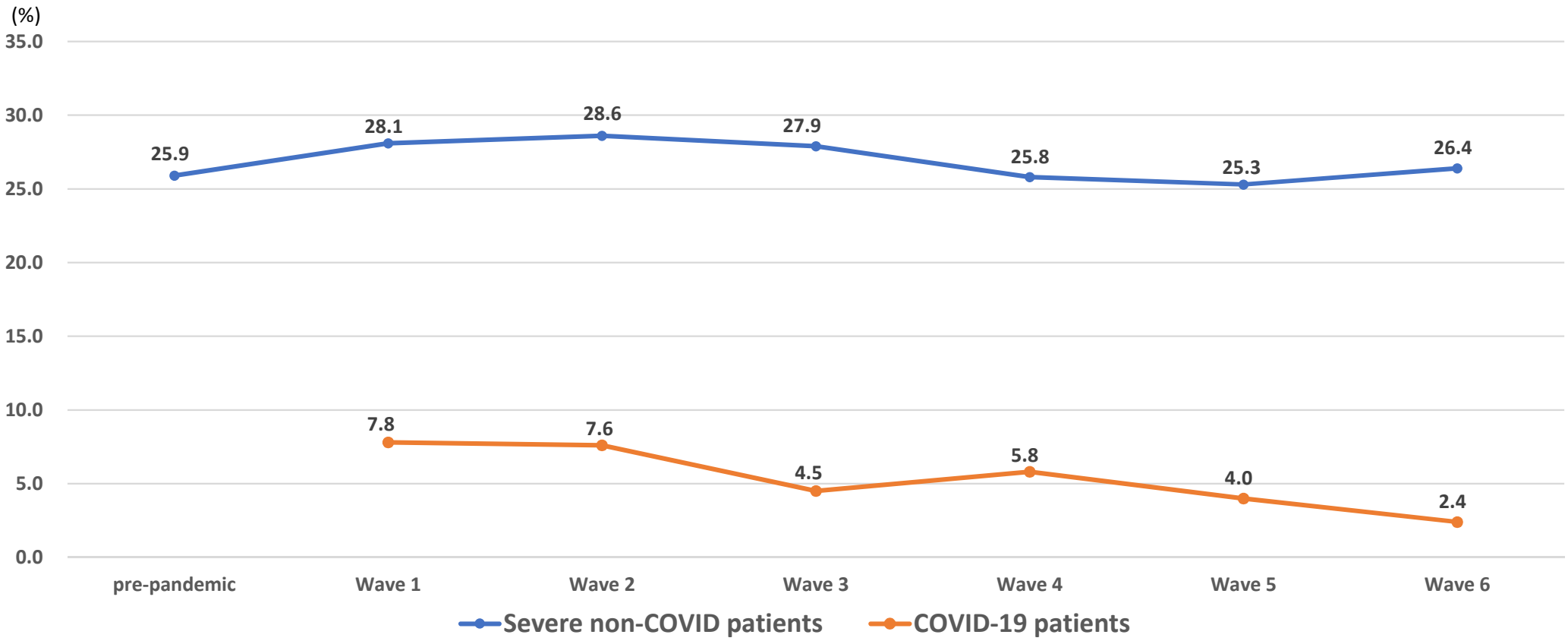
06 Results – ED Mortality



- ✓ **COVID-19 patients:** stable, ~0.1%
- ✓ **Severe non-COVID patients:**
  - Pre-pandemic: 5.4%
  - Pandemic: 6.6–7.6%

→ ED Mortality **rose significantly** among severe non-COVID patients

07 Results – ICU Admission



- ✓ **COVID-19 patients:** peaked 5.8% (Delta wave)
- ✓ **Severe non-COVID patients:** dropped to 25.8% (same period)

→ ICU admission declined during pandemic peaks,
despite severe patient conditions

08 Discussion

- ✓ Divergent trends in emergency care access
  - Faster ED visits, stable ED mortality for COVID-19 patients
  - Delays, rising ED mortality, fewer ICU admissions for severe non-COVID patients
- ✓ Resource prioritization → inequity in care delivery
- ✓ Policies focused heavily on infectious disease response (beds, isolation, reimbursement)

09 Conclusion

- ✓ Korea's COVID-19 response was **successful overall**
- ✓ BUT: Severe non-COVID patients faced
  - ↑ Onset-to-ED arrival time
  - ↑ ED Mortality
  - ↓ ICU admission

- ✓ **Lesson & Future:** Pandemic preparedness must ensure balanced resource allocation and build resilient systems that safeguard all critically ill patients.

Thank you

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