Overview of ED overcrowding in ASIA

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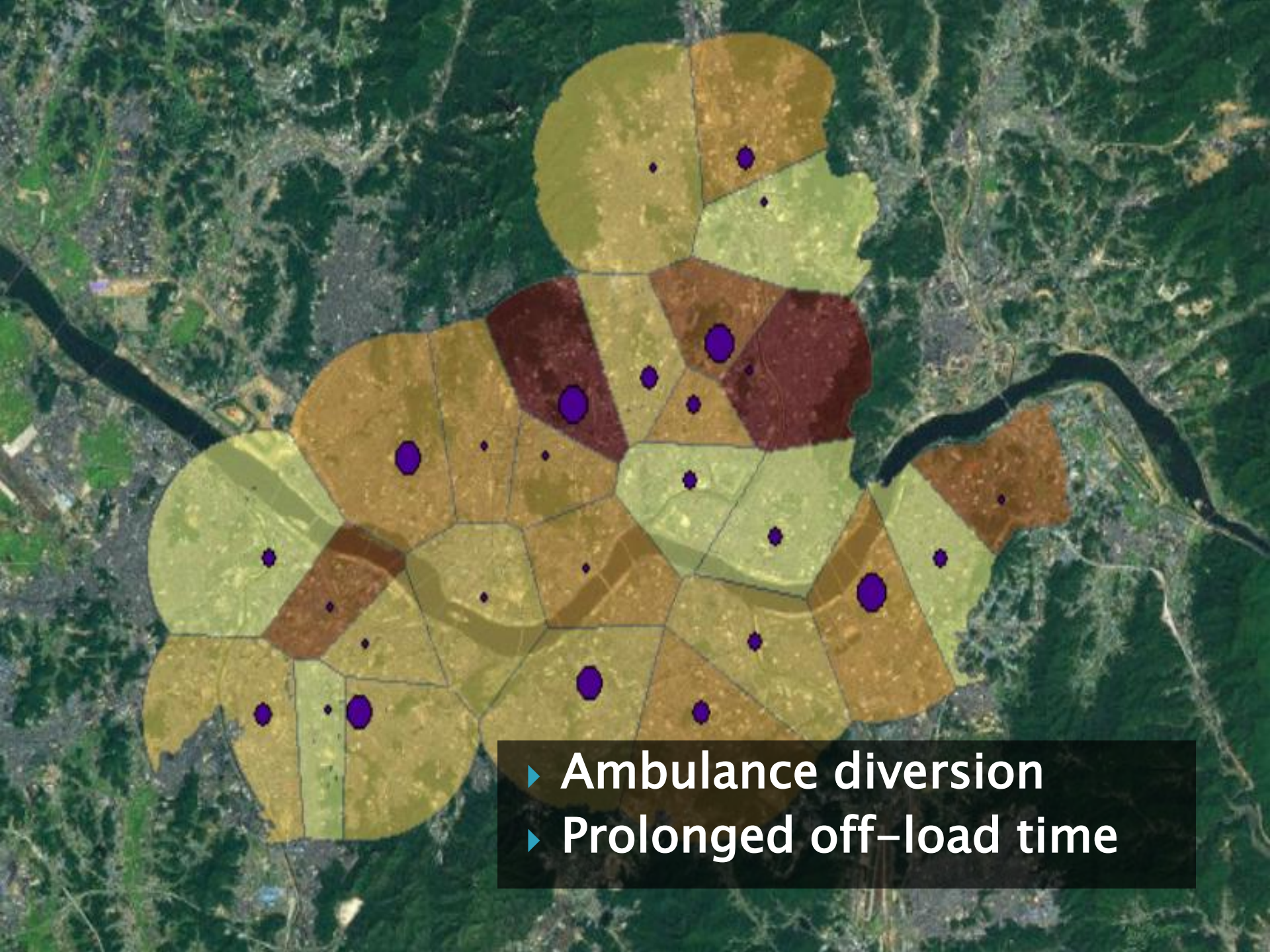# Outline of Proposal

- Introduction

- Aims/Hypotheses

- Methods

- Significance

Introduction

- Safety
- Satisfaction
- Quality of care

▸ **Ambulance diversion**
▸ **Prolonged off-load time**

- Problematic
- Unclear epidemiology
- Appropriateness of Model

Objective

- Primary
  - To describe ED overcrowding in Asian countries
    - Input factors
    - Throughput factors
    - Output factors

- Secondary
  - To compare physician perception on overcrowding
    - Definition
    - Effect
    - Solution

Methods

- Inclusion
  - Hospital unit : PAROS PIs

- Study design
  - Structured questions : survey

- Statistics
  - Demonstration of demographic data

Survey (I) : Hospital Demographics

- Teaching hospital ? (y/n)
- Hospital total bed (   )
- Hospital ICU bed (   )
- Number of doctors (faculty) (   )
- Number of nurses (Registered nurses) (   )

- Number of admissions during last year (   )
- Number of OPD visitors during last year (   )
- Number of surgery during last year (   )

- PCI available? (24 hr / office hour / none)
- Open heart surgery? (24 hr / office hour / none)

Survey (II) : Input Factors

- Total ED visitors in 2009 (   )
  - Female % (   )
  - Age distribution % (<15, 15~65, >65) (,   ,   )
  - Age (mean/SD) (/   )
- Pts transferred via EMS % (   )
- Pts with governmental aid % (   )
- Pts with injury (or trauma) % (   )
- Pts disposition
  - DOA or death in ED % (   )
  - Ward admission (   )
  - ICU admission (   )
  - Emergency surgery (   )

Survey (III) : Throughput Factors

- Is there a Fast track (walk-in clinic)? (24hr/office hour/none)
- Is there a triage nurse in ED?
- Are there critical pathways for certain illness?
- How many beds are there in ED? (   )
- How many ventilators are therein ED?
- Is there POCT for ABGA in ED?
- Is there POCT for cardiac markers, d-dimer in ED?
- Is there a separate x-ray facility and personnel in ED?

- How many doctors (including residents and interns) are there in ED (overall registered/per shift)? (/   )
- How many nurses are there in ED? (overall registered/per shift)? (/   )
- How many EMTs are there in ED? (overall registered/per shift)? (/   )

Survey (IV) : Output Factors

- How many beds in the wards are exclusively reserved for ED? (   )
- How many beds in the ICUs are exclusively reserved for ED? (   )
- Are there designated hospitals that will receive your patients when your hospital is full?

Survey (V) : Overcrowding State

- How many hours was your ED in ambulance diversion state last year?
- What was the average LOS of overall patients in ED last year? (mean, SD)
- What was the average LOS of admitted patients in ED last year? (mean, SD)
- What was the average LOS of surgical patients in ED last year? (mean, SD)

Survey (VI) : Physician's Perception

- How many days a week do you think your ED is crowded? (scale)
- What do you think is the definition of overcrowding? (scale)
  - Patient-bed ratio
  - Boarding time > 6 hours
  - Ambulance diversion
  - Leave without being seen
  - Ambulance stretchers waiting for bed
- What do you think is the cause of overcrowding? (scale)
  - Input overflow
  - Throughput bottleneck
  - Output bottleneck

Significance

- PAROS' first step to extend interest to hospital system

- First step towards solution to ED overcrowding
  - Modeling and statistical analysis should follow
  - Simulation method will help

TEAMWORK
When there's a will, there's a way