

Urgent and Emergency Care Reconfiguration in Ireland: Drivers and Impact

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SIREN

Study of the Impact of Reconfiguration on Emergency and Urgent Care Networks



Structure of talk

1. Background
2. Qualitative study
3. Case-fatality study

What is an 'urgent and emergency care system'?

- All services which contribute to the management/referral of people when immediate healthcare is sought.
 - Chemist/pharmacy
 - General Practice in hours
 - General Practice out-of-hours
 - Emergency Department in a Public or Private Hospital
 - Acute Medical Assessment Unit in a Public or Private Hospital
 - 999 Ambulance
 - Public Local Injuries Unit or a private Local Injuries/Illness Unit such as Swiftcare
 - Mental Health Service
 - Public Health Nurse

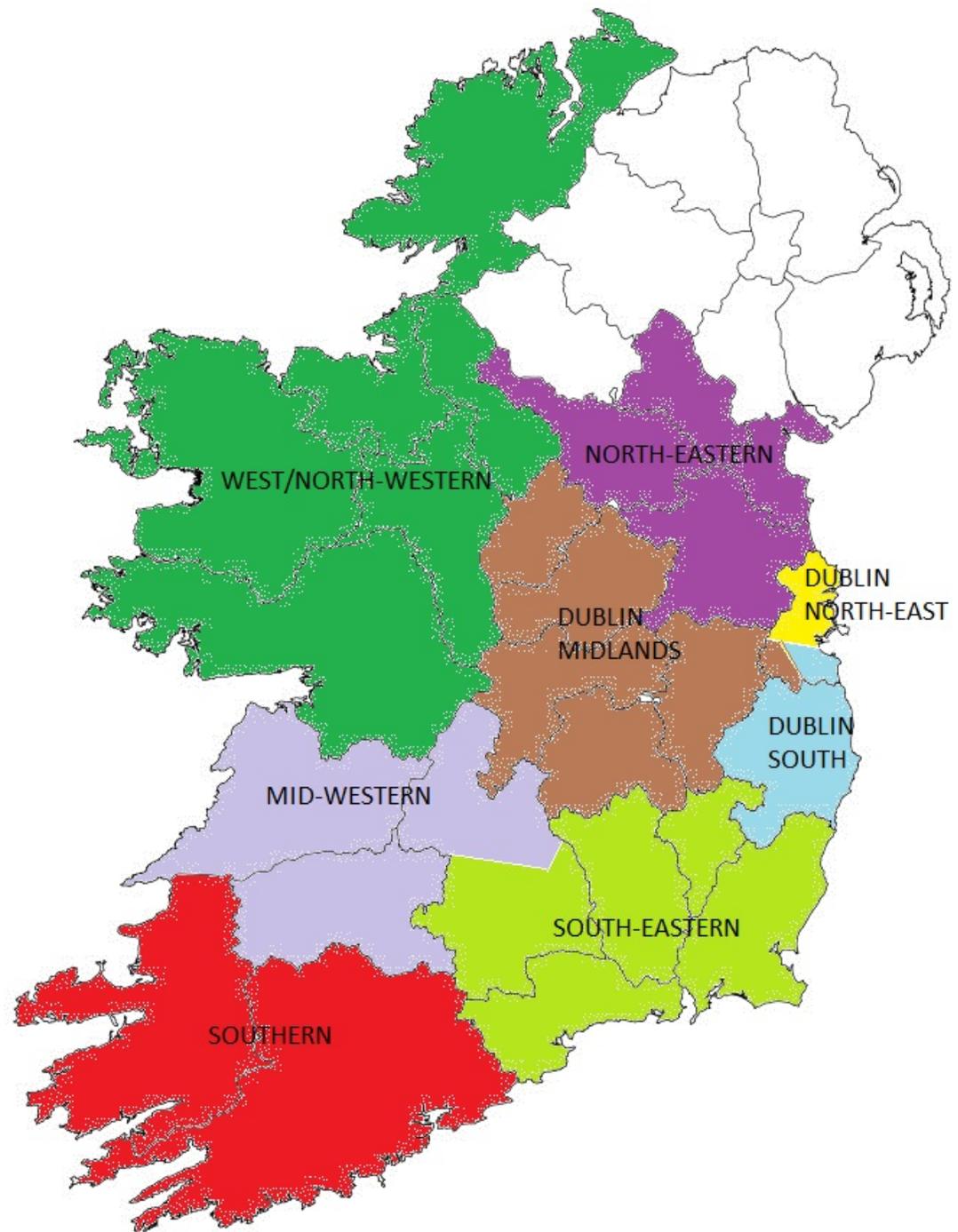
Reconfiguration of emergency care systems in Ireland

- Emergency care systems have been reconfigured to varying degrees across the Republic of Ireland from 2006 to 2011.
- These initiatives were planned at a regional level and, where implemented, have attempted to direct patients to settings that are “appropriate to the severity of their condition”.
- Some whole system integration (e.g. bypass protocols for stroke, STEMI, major trauma) but largest initiatives have been closure of small EDs.
- Happened at a time of economic stress when other conflicting, policies (e.g. bed closures) were introduced.
- Reconfiguration has largely occurred in the Southern and Mid-Western regions of the country which are also the most rural.

What do we know about emergency care for rural populations?

- Rural areas are associated with a higher risk of poor outcomes:
 - older
 - more socioeconomically disadvantaged populations
 - longer travel times which are associated with worse outcome (Nicholl 2007)
 - concerns about the safety of EDs and related services (e.g. acute surgery, ICU which are low volume and sometimes absent) at smaller rural hospitals.
- Measures to address these problems are controversial.
- One approach is to close small EDs: all emergency care carried out in large hospitals with all specialist services available/high volume.
- This lengthens emergency journey times and usually takes acute beds out of the system (spillover effects on trolleys).
- Disproportionate impact on older and poorer patients.

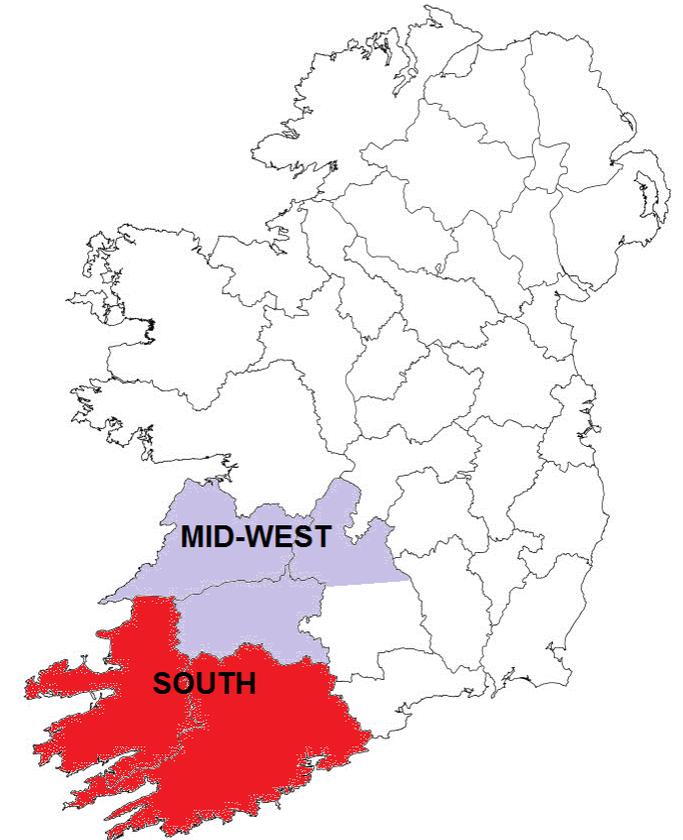
**Irish health
regions at the
time of
reconfiguration
(2006 to 2011)**



Regional hub and spoke

Large-scale regional system reconfiguration completed or in progress.

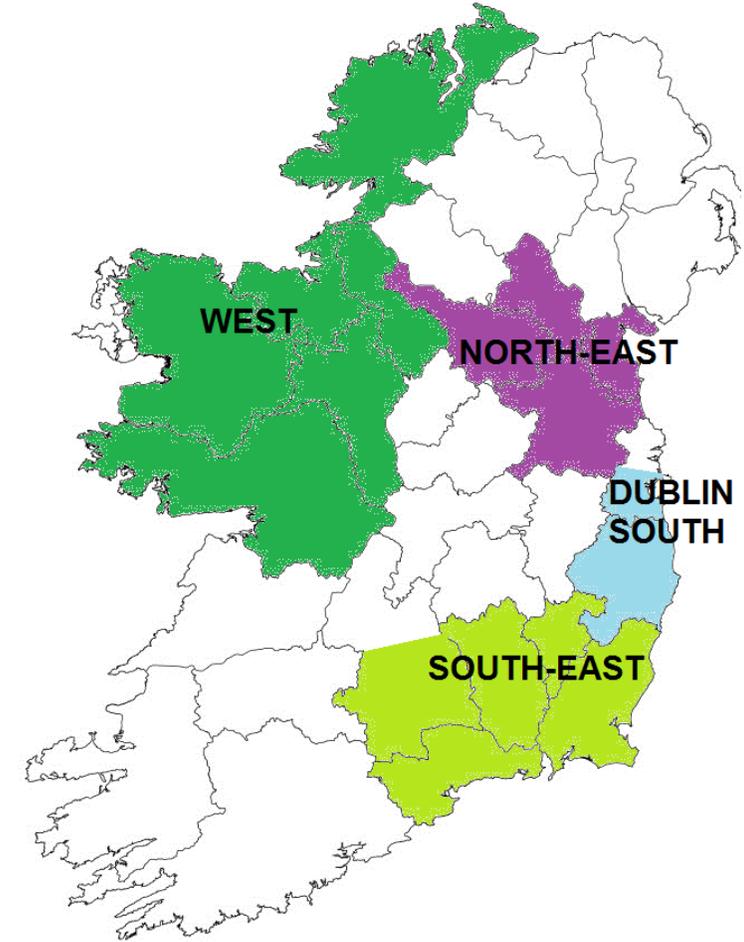
- Evidence of centrally-planned system reconfiguration, either completed or well underway.
- Identified hub hospital with defined ambulance bypass protocols and referral pathways from other hospitals/services.
- Clinical and corporate governance structures in place or in advanced stage of development.
- South, Mid-West.



Partial hub and spoke

Some regional system reconfiguration carried out.

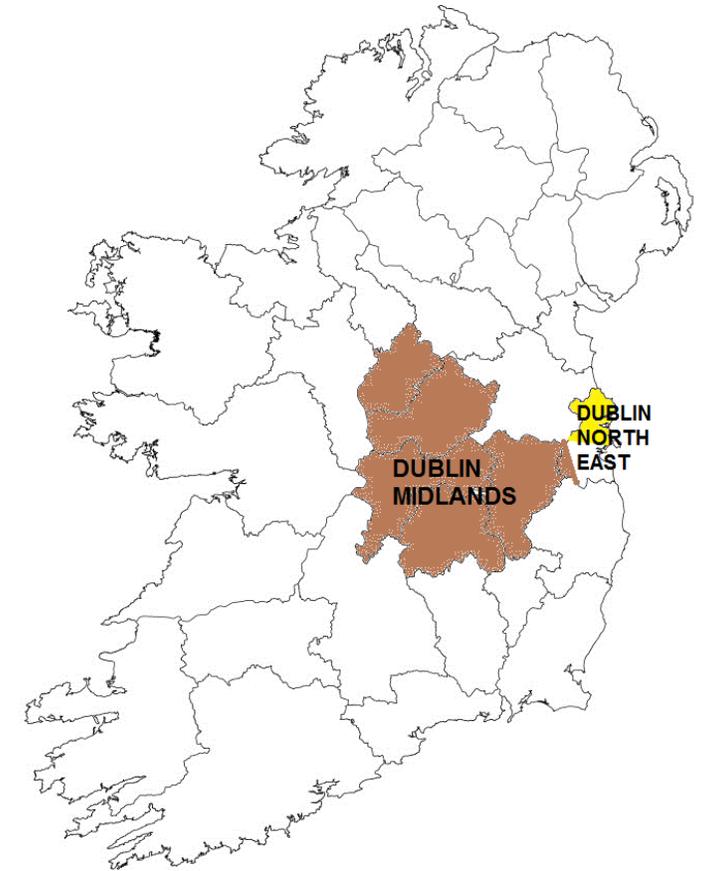
- Identified hub hospital with defined patient pathways for some services.
- Ambulance bypass protocols in place locally but not specified by regional planning document.
- Limited integration of clinical and corporate governance structures.
- Subject to boundary changes potentially affecting network of care.
- North East, South East, Dublin South, West.



Loosely defined

No specific plan to re-design regional model of care.

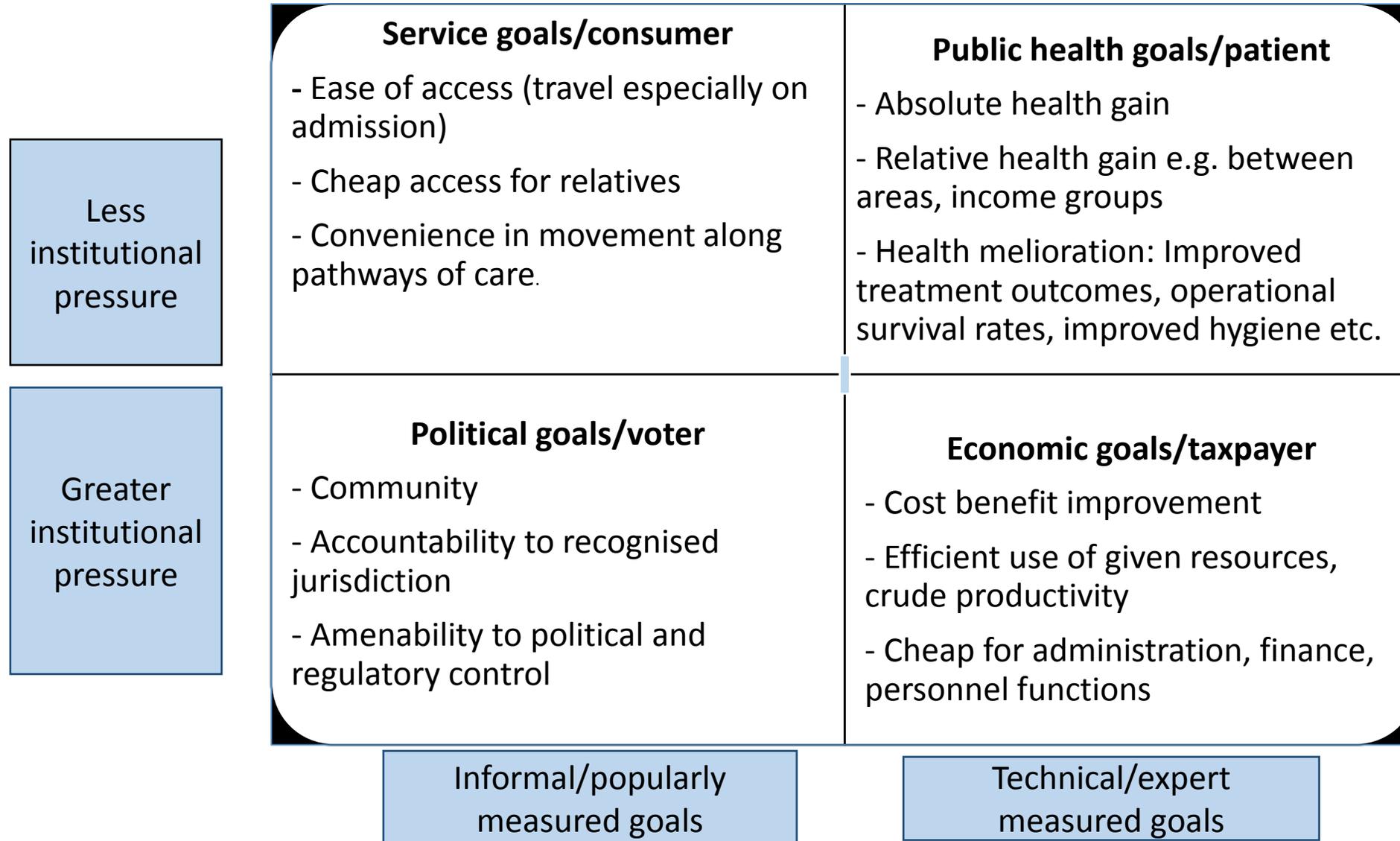
- Limited hospital hierarchy in place. Patient pathways loosely defined but well understood by stakeholders.
- Ambulance bypass protocols in place for some conditions.
- Limited integration of governance structures at regional level.
- Dublin Midlands, Dublin North East.



Why has reconfiguration happened? What was it supposed to achieve?

- 175 internal and external stakeholders interviewed across all regions.
- Asked to identify key drivers of reconfiguration.
- Framework developed by Spurgeon et al in UK used to classify claims.

Perspectives on drivers of reconfiguration



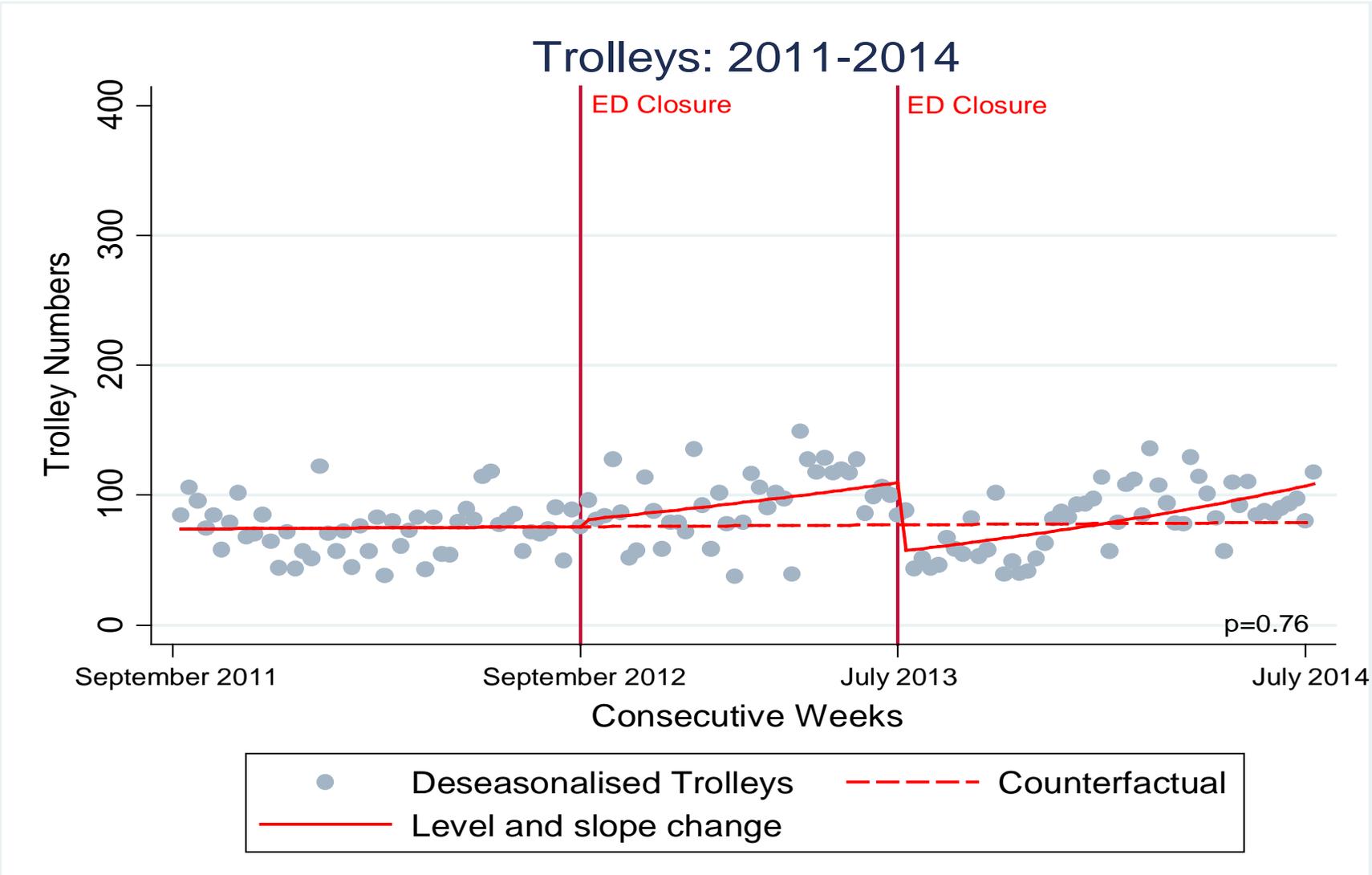
Summary of qualitative findings

- Confused public discourse is obvious.
- Internal and external stakeholders construct their own lines of argument and disagree fundamentally in many respects.
- Safety and efficiency are key drivers for internal stakeholders.
- External stakeholders emphasise access, but also dispute the way that safety and efficiency are framed by internal stakeholders.
- External stakeholders point out important contradictions in claims made by proponents of reconfiguration.

Points of conflict

- If efficiency is important, why do we still have 9 EDs in Dublin?
- If safety is important, why is reaction to safety incidents at large and small EDs so different?
- The volume-outcome literature that underpins the safety argument only applies to 3% of ED patients. What about the rest?
- External stakeholders do not trust the bona fides of planners.
 - Suspicion of the role that medical schools, teaching hospitals and training bodies play.
- Is access/safety trade-off taken seriously by policy makers?
 - Hubs do not seem to be located in places that minimise access difficulties.
 - Hub hospitals are often overloaded when small EDs close, making them less safe.

Impact of ED closures on trolley numbers in Mid-Western region



How has mortality risk for conditions requiring emergency care changed in Ireland over the period 2002-2014?

Focus is on populations, to inform service planning.

Is there geographical variation in survival?

- Case-fatality ratios constructed for 3 groups containing 16 serious emergency conditions (SECs).

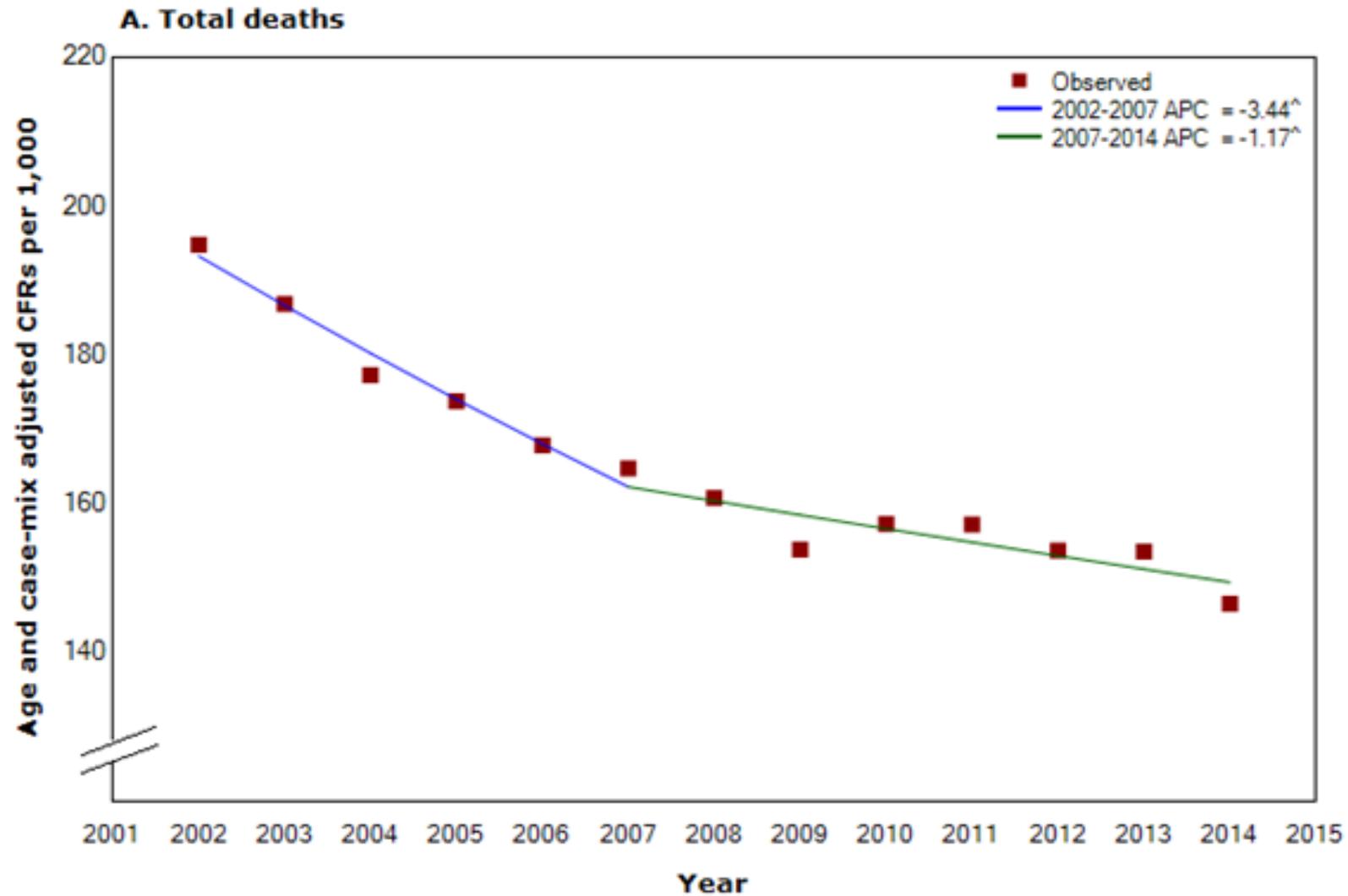
Group	Condition
1	Stroke
2	Acute Myocardial Infarction and Cardiac Arrest (AMI&CA)
3	Other: Acute Heart Failure, Anaphylaxis, Asphyxiation, Asthma, Falls under 75, Fractured Neck of Femur, Meningitis, Pregnancy, Road Traffic Accident, Ruptured Aortic Aneurysm, Self-harm, Septic Shock, Serious Head Injury

- CFR = ratio of deaths to cases, standardised by age/case-mix at county level.
- Deaths derived from CSO mortality data.
- Cases based on the number of condition events (deaths + emergency admissions recorded in HIPE).

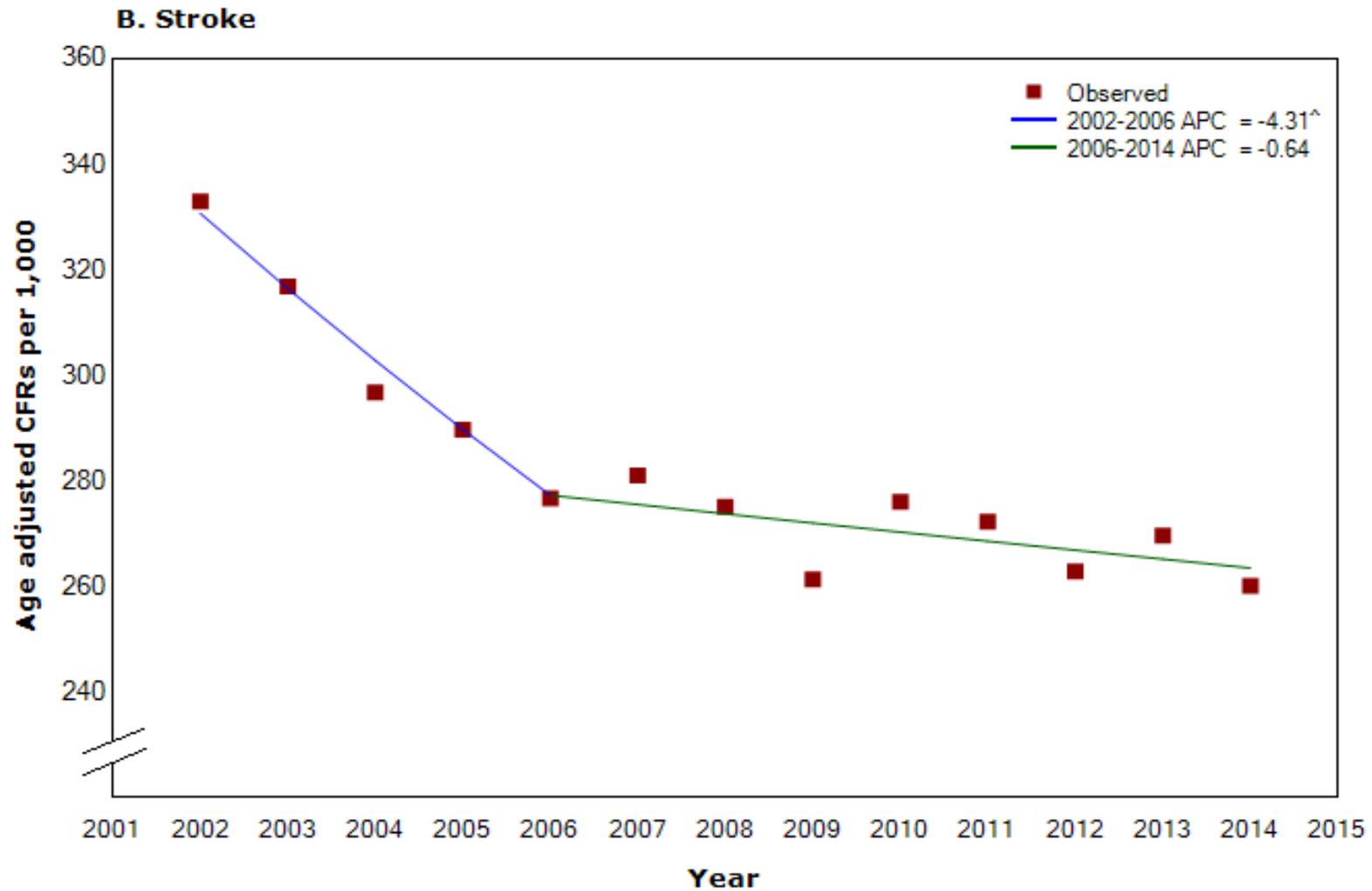
Analysis

- Joinpoint analysis was conducted on the annual adjusted national CFRs from 2002 to 2014 for the three condition groups and the total age/case-mix adjusted results.
- This identifies possible points where a significant change in trend occurs.
- Regional trends for 2007 onwards were compared to national trend using a generalized linear model that adjusted for age and gender.
- Regional trends compared to national average using a funnel plot.

Large improvements in survival at national level

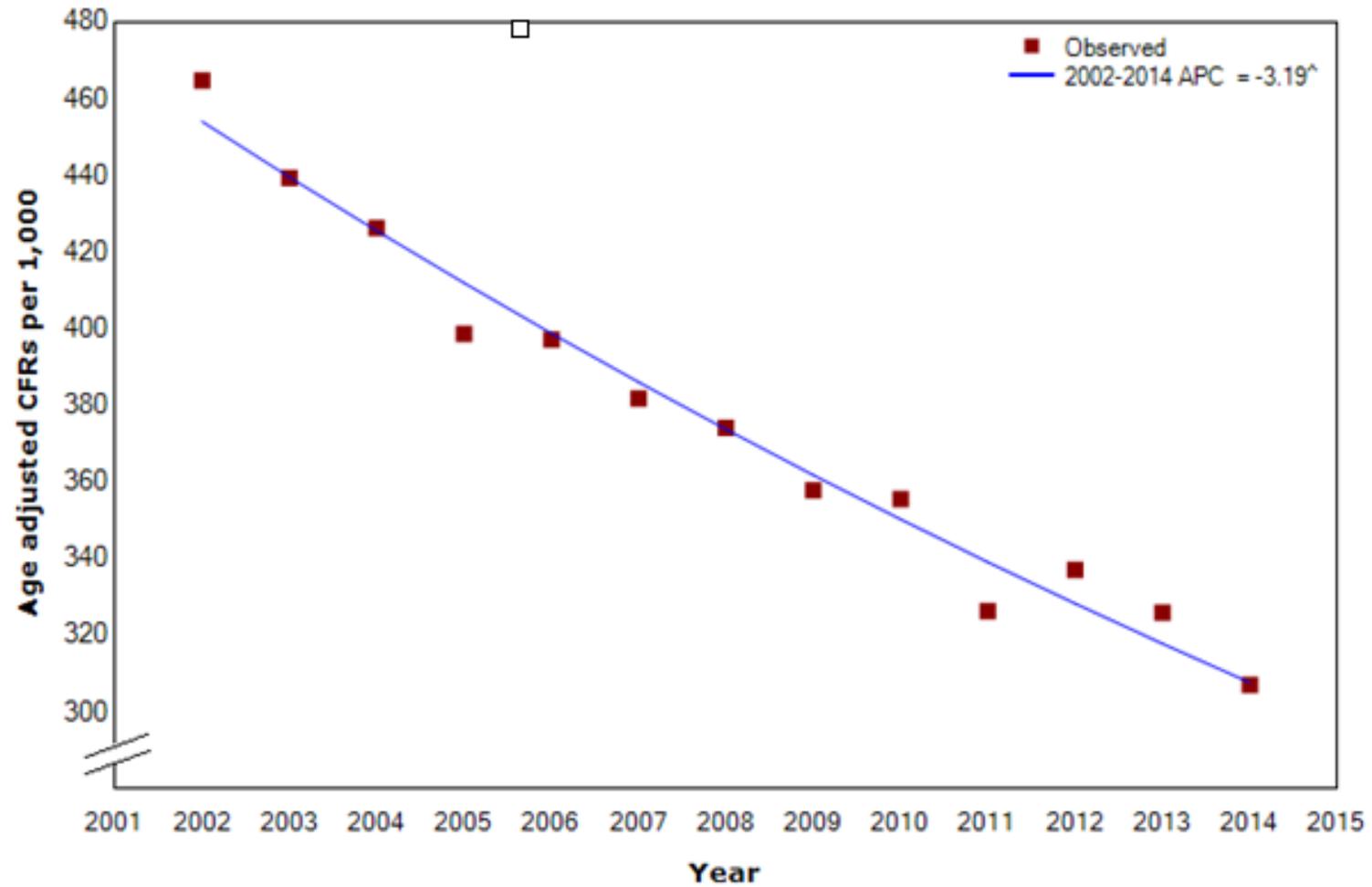


Joinpoint analysis: stroke

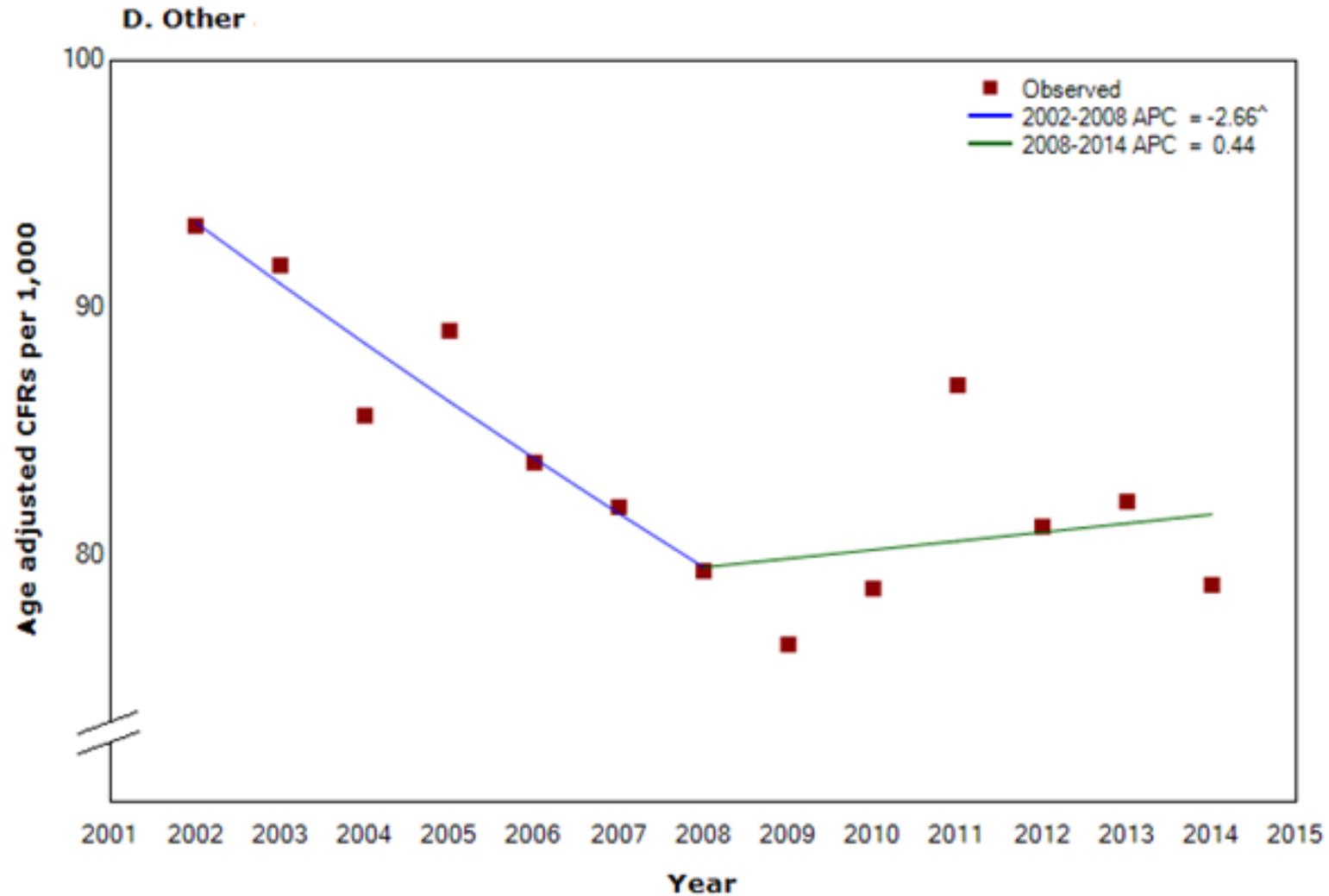


Joinpoint analysis: AMI/CA

C. AMI and cardiac arrest

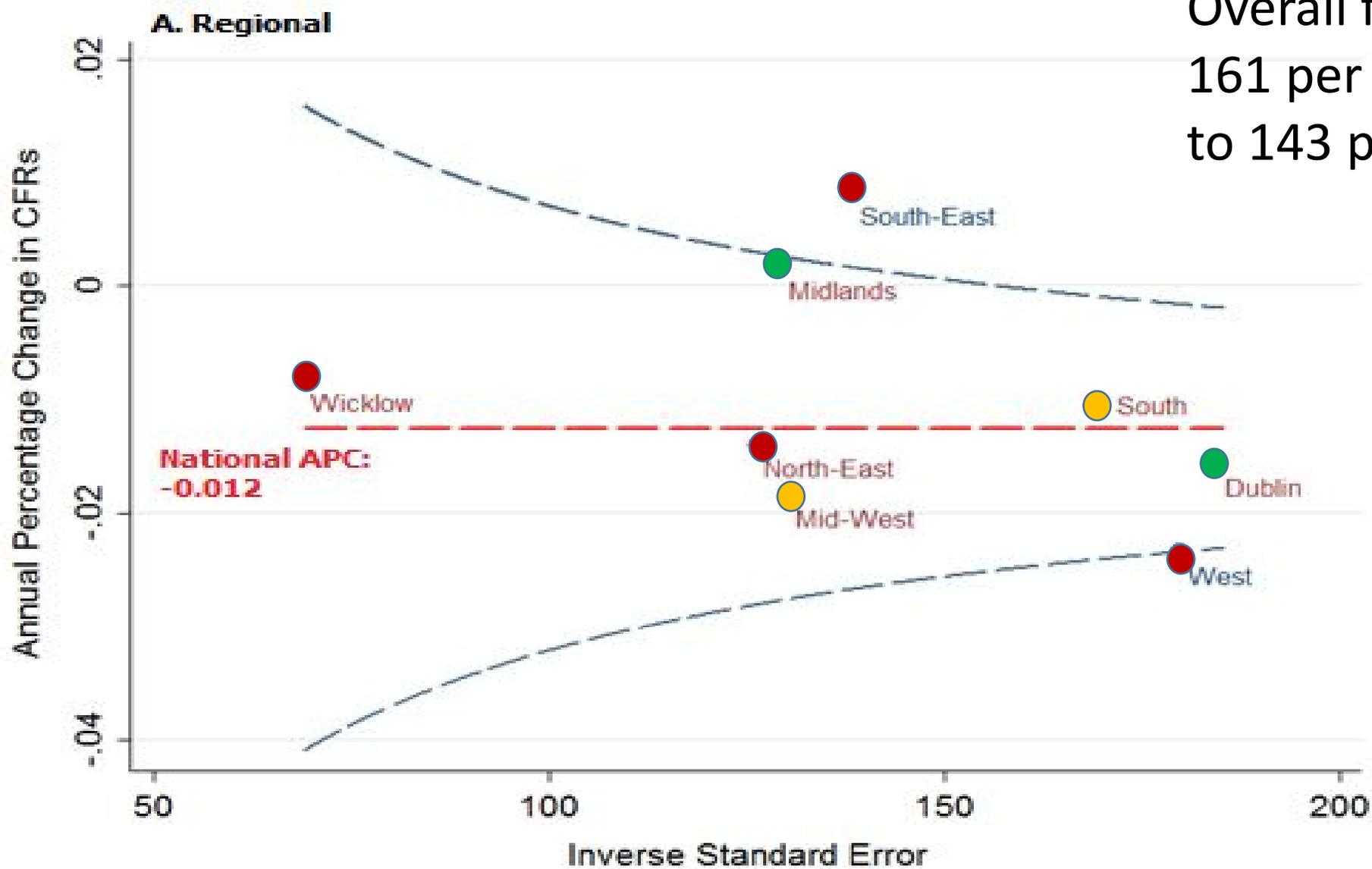


Joinpoint analysis: other conditions



Regional trends: 2007-14

Overall fall in CFRs:
161 per 1,000 in 2007
to 143 per 1000 in 2014.



County results: weak signal in favour of retaining local EDs.

- Since 2007 the best performance in survival improvement has been in counties that retained a level 3 ED (all $p < 0.05$):
 - Mayo (-4.6% APC)
 - Sligo (-3.3% APC)
 - Louth (-2.5% APC)
 - Donegal (-2.1% APC)
 - Kerry (-2.0% APC)
 - National (-1.2% APC)
- Dublin was only other county with significant improvement (-1.6% APC).
- Counties that lost their only ED had mixed results but findings not significant:
 - Monaghan (+1.5% APC, $p = 0.32$)
 - Roscommon (-0.4% APC, $p = 0.78$)
 - Clare (-2.1% APC, $p = 0.07$)

Summary

- The likelihood of surviving a serious emergency condition has increased in Ireland over the period 2002-2014.
- Some evidence of trend flattening from 2007 onwards, especially for stroke survival.
- No evidence that reconfiguration has improved outcomes, but design is not perfect to test this hypothesis.

Discussion 1

- Unclear why stroke outcomes have flattened.
- Ceiling effects should be considered – less room for improvement.
- The Western region has three counties with excellent performance in recent years (Donegal, Mayo, Sligo): lessons may be transferable to other regions?
- Good reasons to be sceptical about the safety claims made by proponents of reconfiguration.
 - Isn't ED closure supposed to make things better (small EDs supposed to be clearly unsafe)?
 - Monaghan and Roscommon?

Discussion 2

- Implementation of reconfiguration has been limited, coincided with period of extreme cutbacks.
- May be too soon to judge impact?
- Health system configuration may not be that important: key driver of outcome is deprivation (which is often higher in rural areas).
- Evidence does not paint a clear picture: policy direction is not obvious.

Acknowledgements

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