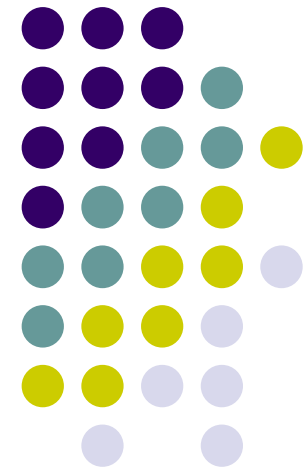


Optimising Healthcare Transitions for Young People

Analyses of English Hospital Data

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Background



“Transition is the purposeful planned movement of adolescents and young adults with chronic physical and medical conditions from child-centred to adult-orientated health care systems”

Blum et al, 1993

- Paediatric services → Adult Services: What about adolescence?
- Increasing awareness of transition from paediatric services as a problematic time in young people with chronic conditions (CQC, 2014; Kipps, 2002)
- It tends to occur at a time of rapid life changes including upheavals including leaving school, often leaving home and moving city.

Background



- There is clear evidence that poor transitions result in poor health outcomes, particularly related to drop-out from healthcare at a key time in chronic disease management.
 - Disengagement
 - 'Bouncing'
- Policy goal of successive governments to improve transition
- Yet despite DH initiatives, there appears to have been little change in the majority of health services in England.



CareQuality Commission:

- › **Having consistent staff members who knew about the conditions and the young person's history**
- › **Providing adolescent clinics (adolescence is defined as ages 10-19)**
- › **Good communication with young people, their parents and each other**
- › **Providing good information about what to expect**



NICE Guidelines

- Involving young people in transition
- Developmentally appropriate transition support
- Integrated adult/paediatric services, joint clinics
- Adequate planning
- Named transition worker, 6 months post-transition support
- Education re. condition-management, services
- Involvement of parents/carers
- Research into improving transition and outcomes of poor transition

Aims



- Identify predictors of age of transition and “successful” transition
- Examine time-trends over the past decade in age at transition and proportions who transition successfully.
- Examine associations between pre-transition service use and retention and subsequent health service use and mortality.
- Investigate the utility of routinely collected hospital data (HES) to define metrics of transition

Hospital Episodes Statistics



- Inpatient, Outpatient, Critical Care, A&E, ONS Mortality data
- All hospital use, diagnostic codes, specialty codes, Sociodemographic data
- Area, provider data

Defining cohorts



- Data on all patients with any health service contact who were between 10-18 in April 2004
- At least one inpatient appointment
- At least one contact with a paediatric specialty code
- Conditions (using ICD codes)
 - Any NCD (N: 114,660; 3,883,995 appointments)
 - Asthma (N: 9,740; 176,241 appointments)
 - Diabetes (N: 9,176; 318,425 appointments)
 - Epilepsy (N: 10,601; 285,292 appointments)
 - Sickle cell disease (N: 615; 40,711 appointments)
 - Any mental health condition (N: 13,590; 231,038 appointments)
- Considered all contacts with specialty codes relating to condition (and those relating to mental health conditions)

E.g. Diabetes diagnostic and specialty codes



- Diagnostic codes: Diabetes mellitus (E10-14)
- Specialty codes
 - Paediatric
 - General Paediatrics
 - Paediatric Endocrinology
 - Adult codes
 - General Medicine
 - Endocrinology,
 - Diabetic Medicine
 - Dietetics



Overview of research

- Descriptors of transition
 - Drop-out
 - Age of transition
 - Health service use pre/post transition
- Examined two conceptualisations of “successful transition”
 - Transitioning to adult services within 6 months
 - Retention in adult services: two subsequent adult appointments within two years



Overview of research

- Predictors
 - Sociodemographics
 - Area
 - Pre-transition health service use
 - Year (examine trends over time)
- Outcomes
 - Post-transition health service use
 - Unplanned contacts
 - Critical care appointments
 - Mental health service use
 - Mortality



Findings in Diabetes

Drop-out and successful transition

- Drop-out: 13.8%
- Approximately half transition within six months
- 45% successfully retained in adult services

Age of transition

- Overall mean age of last paed. contact: 17.42
- Mean age if transitioned within 6 Months: 17.58

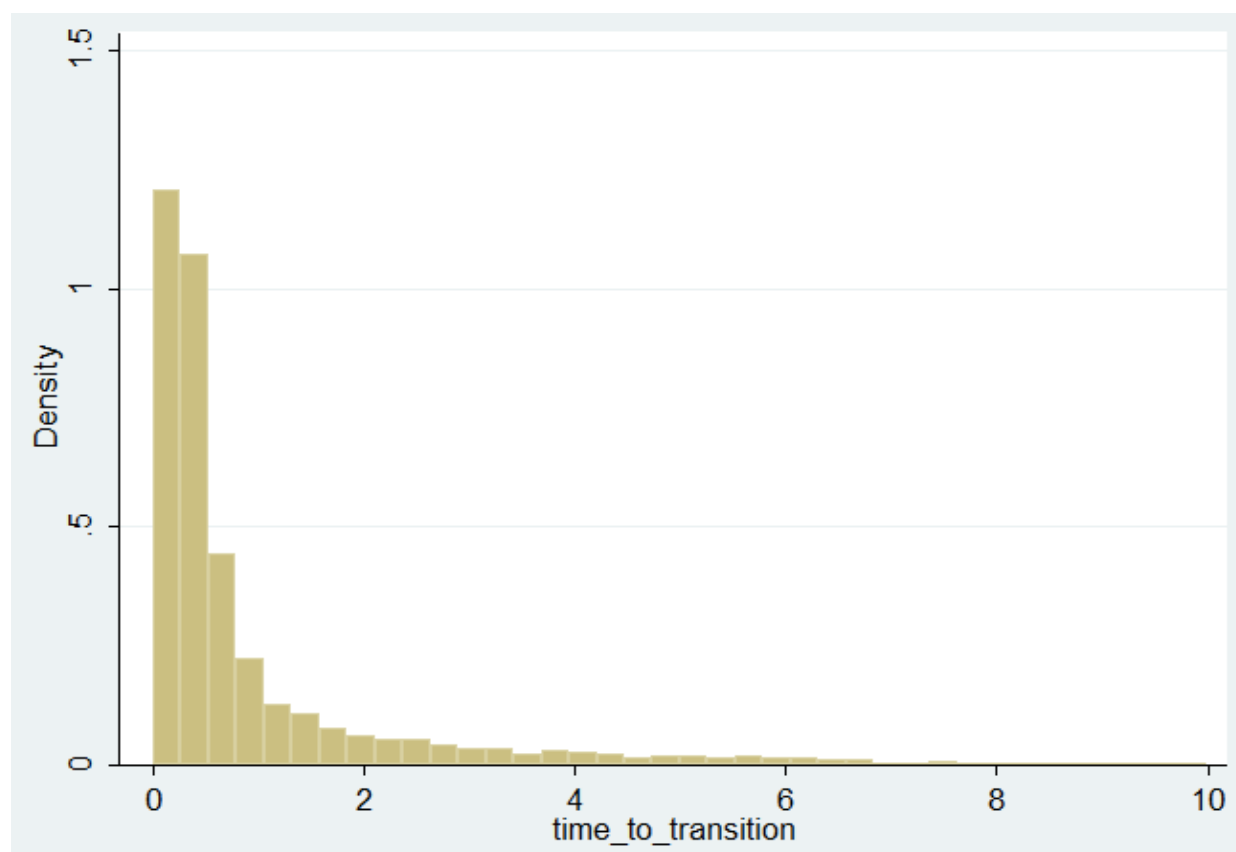
Frequency of contact

- More frequent contact within paed (e.g. 3.8/year vs. 2.1/year); over $\frac{3}{4}$ had more paed contacts than adult



Findings in Diabetes

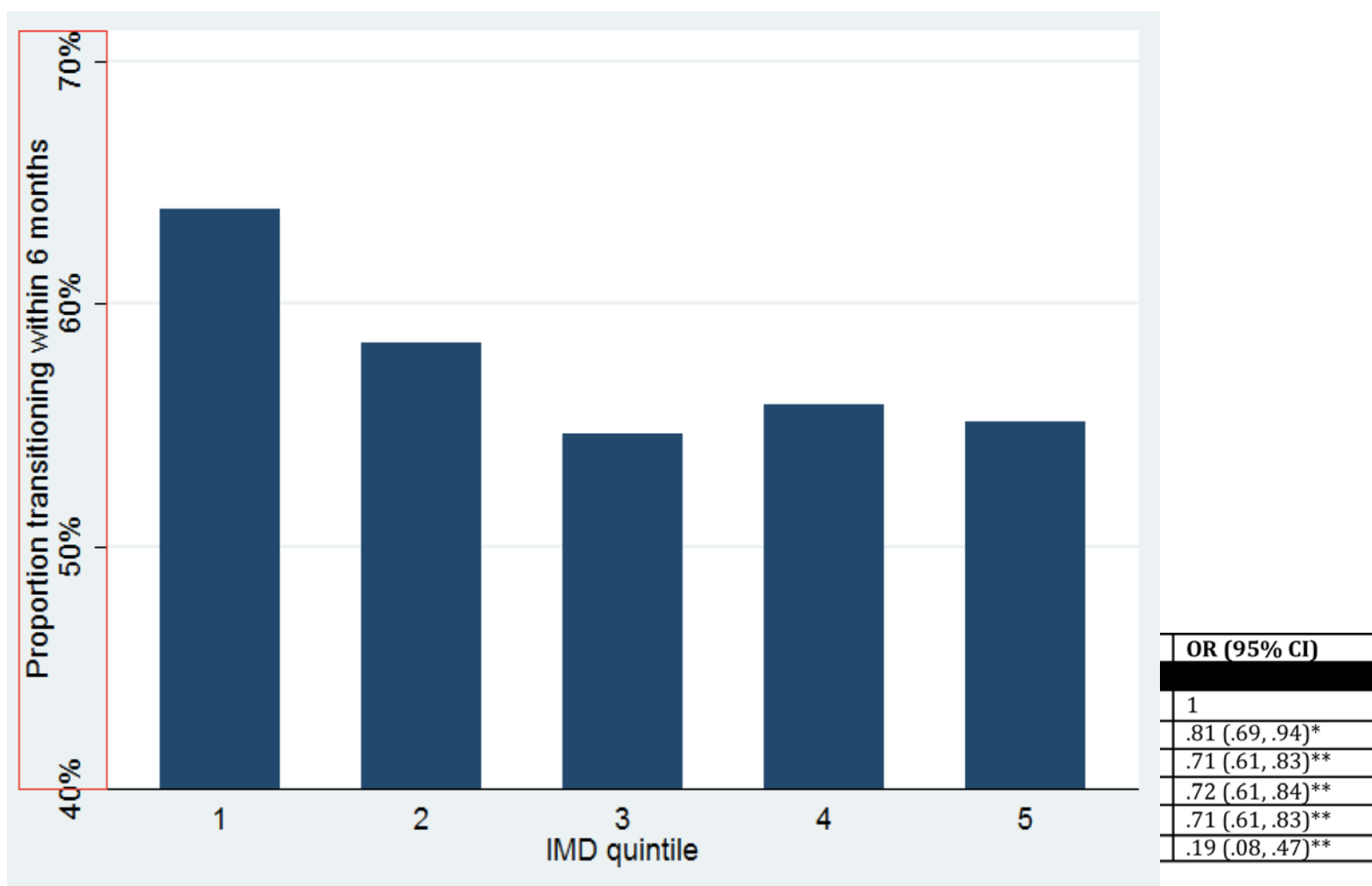
- Mean gap: .94 years (median .40)





Findings in Diabetes

- Clear SES gradient in successful transition



Successful Transition: Diabetes



- Females more likely to transition successfully
- Clear LAA-level effects (7% intra-class correlation)
- Government Office Regions: poor in London and North-East
- Later = more successful: 17.32 (17.27, 17.37) vs. 17.59 (17.55, 17.63)
- Disease severity (IP appointments) predicted poor transition
- Pre-transition contact

Health service contact in 1 year pre-transition		
5	57.3 (55.4, 59.2)	1.43 (1.25, 1.62)**
4 (ref)	50.9 (48.7, 53.1)	1
2-3	36.0 (34.4, 37.7)	.53 (.47, .60)**
Less than 2	20.5 (17.7, 23.6)	.26 (.21, .33)**

- No differences based on ethnicity, mental health contacts pre-transition



Age of Transition: Diabetes

- SES gradient
- Pre-transition health service use predicts later transition
- London: earlier transition
- Severity associated with later transition
- No other significant associations

Trends

- Transition getting later (by .10 years per year) from 2006-2011
- But no differences in successful transition

Outcomes of successful transition: Diabetes



- Pre-transition health service use protective against post-transition unplanned service use, critical care and post-transition mental health

- Mortality

	Death post-transition OR (95% CI)
Health service contact in 1 year pre-transition	
5	2.03 (1.32, 3.11)*
3.5-4.5 (ref)	1
2-3	.82 (.50, 1.35)
Less than 2	1.85 (1.02, 3.37)*

- Successful transition: protective against mortality
 - OR (95% CI) for transitioning within 6 months: .65 (.49, .88)*
 - OR (95% CI) for retention: .58 (.40, .82)*
- Successful transition predicts less frequent A&E visits

What about other conditions?



Condition	Drop-out	Six months transition	Successful retention	Average gap (years)	Age of transition
Asthma	75.8%	6.3%	4.1%	2.43	17.07
Diabetes	13.8%	50.2%	44.6%	.94	17.42
Epilepsy	23.4%	34.0%	26.4%	1.42	17.22
Mental Health	61%	9.7%	6.7%	2.36	16.39
Sickle cell disease	13.5%	51.6%	45.5%	.92	17.31
Any NCD	16.6%	39.3%	30.7%	1.50	16.39

Predictors and outcomes of transition: other conditions



- SES gradient ✓ (weaker)
- Ethnicity ✓
- Gender ✓
- Pre-transition service use ✓
- Area ✓
- Age of last paediatric contact ✓
- Disease severity ✗
- Trends ✓
- Outcomes
Epilepsy: ✓
Others: ✗

Predictors of transition: other conditions



- Pre-transition service use: moderate use predicts best outcomes
- Successful transition = worse outcomes: severity effect
- Not conducted in sickle cell disease



Summary of Results

- Dropout ranges dramatically by condition
- Health service use decreases after transition (unlike in Canada; Cohen)
- Deprived young people at risk for poor transition
- Males at risk for poor transition
- Later transition associated with success
- Pre-transition service use associated with success
- Don't move to London (later but worse)
- Getting later, not getting better
- Severity effect for most conditions



Implications

- Inequalities in transition
 - Especially concerning in diabetes
 - Targeted intervention?
 - By area/provider: measuring/assessing transition
- Delaying transition age may be one way to improve transition (in the US, median age is 22).
- Increasing pre-transition service frequency
- Improving transition is a clear means of reducing mortality (in diabetes) and A&E attendance, unplanned attendance (in epilepsy).

Issues in using HES to measure transition



- Severity effect
- Poor diagnostic coding in outpatient data
- Other markers of successful transition not available

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