

Supplementary Table: Estimates of B-coefficients from multivariable regression models for the association between GP characteristics, socio-demographic profile of patients, local availability of alternative health care services and self-referred discharged ED attendance rates in England, April 2012 – March 2013, taking into account clustering at PCT level.

Adjusted R square	0.3472		
	B-coef.	95% CI	P
<i>GP COMPOSITION OF PRACTICE</i>			
% GP staff younger than 40	-.016	-.067;.033	0.510
% Female GP staff in practice	-.037	-.091;.015	0.162
% GP staff qualified in UK	-.135	-.197;-.072	0.000
<i>POTENTIAL ACCESS</i>			
FTE GP per 1000 practice population	4.813	-3.552; 13.179	0.257
Practice in town/city (ref. is urban conurbation)	-17.352	-28.122; -6.582	0.001
Practice in rural area (ref. is urban conurbation)	-17.947	-28.884; -7.010	0.001
Difference in travel time hospital-GP (extra minutes to go to hospital)	-.211	-.439;.015	0.068
<i>REALIZED ACCESS</i>			
% registered patients satisfied with phone access	-.150	-.292;.007	0.040
% registered patients satisfied with opening hours	-.019	-.228;.189	0.852
% registered patients able to make an appointment	-.334	-.632;-.036	0.028
% of patients not able to speak GP/nurse within 2 workdays when wanted	.228	.045;.411	0.015
<i>CONTINUITY OF CARE</i>			
% registered patients having a pref. GP	-.008	-.128;.111	0.890
% could speak preferred GP always or a lot of the time	.092	.004;.188	0.062
<i>SOCIO-DEMOGRAPHIC CHARACTERISTICS OF PRACTICE POPULATION</i>			
% registered patients unemployed	1.103	.714; 1.492	0.000
% registered patients UK-white ethnicity	.316	.119;.514	0.002
Male life expectancy	-4.178	-5.667; -2.688	0.000
<i>MIU & WIC ATTENDANCE</i>			
Standardised self-referred MIU attendance per 1,000 practice population	-.403	-.508; -.297	0.000
Standardised self-referred WiC attendance per 1,000 practice population	-.098	-.163; -.034	0.003
Standardised self-referred MIU attendance per 1,000 practice population squared	.001	.000;.001	0.000
local availability of MIU	-3.125	-13.316; 7.065	0.545
local availability of WiC	8.801	-1.257; 18.861	0.086

Ref.=reference category

Supplementary Box 1: A&E department types in England

A&E department types following the definitions used in the NHS England data dictionary.

Type 1 A&E department (Major A&E)

Emergency departments are a consultant led 24 hour service with full resuscitation facilities and designated accommodation for the reception of accident and emergency patients.

Type 2 A&E department (Single Specialty)

Consultant led mono specialty accident and emergency service (e.g. ophthalmology, dental) with designated accommodation for the reception of patients.

Type 3 A&E department (Other A&E / Minor Injury Unit)

Other type of A&E/minor injury activity with designated accommodation for the reception of accident and emergency patients. The department may be doctor led or nurse led and treats at least minor injuries and illnesses and can be routinely accessed without appointment. Excludes NHS walk-in centres.

Type 4 A&E department

NHS walk-in centres

Supplementary Box 2: Data sources

Data sources	Indicators
<p>The GP Patient Survey (GPPS) is an independent survey carried out on behalf of NHS England. The survey has been sent out to over a million people every year across the UK since 2007. The results show how people feel about their GP practice. (See https://gp-patient.co.uk)</p>	<ul style="list-style-type: none"> • Pct. of patients satisfied with opening hours • Pct. of patients satisfied with phone access • Pct. of patients able to make an appointment • Pct. of patients unable to speak GP/nurse within 2 workdays when wanted • Pct. having a preferred GP • Pct. speak always/often to preferred GP • Pct. of unemployed patients • Pct. of patients UK white ethnicity
<p>Health and Social Care Information Centre (HSCIC) is the trusted national provider of high-quality information, data and IT systems for commissioners, analysts and clinicians in health and social care. Priorities are among others creating national information that can be used by all, and producing fair statistics to help health and care services, in particular concerning population demographics and mortality statistics. (See http://www.hscic.gov.uk/home)</p>	<ul style="list-style-type: none"> • Pct. of GP staff younger than 40 • Pct. female GP staff in practice • Pct. of staff qualified in UK
<p>NHS Comparators was a free website (until 31 March 2015) providing comparative information on 200 health indicators to NHS users. It was part of the Secondary Uses Service and jointly delivered by the NHS Information Centre and NHS Connecting for Health.</p>	<ul style="list-style-type: none"> • Self-referred discharged ED attendance rate • Self-referred MIU attendance rate • Self-referred WiC attendance rate
<p>The Office for National Statistics (ONS) is the UK's largest independent producer of official statistics and is the recognised national statistical institute for the UK. It is responsible for collecting and publishing statistics related to the economy, population and society at national, regional and local levels. (See http://www.ons.gov.uk/ons/index.html)</p>	<ul style="list-style-type: none"> • Location (rural, urban, urban conurbation)
<p>ONS & Department for Transport. This department supports the transport network that helps the UK's businesses and gets people and goods travelling around the country. It produces statistics on transport, traffic and related areas. (See http://www.ons.gov.uk/ons/index.html)</p>	<ul style="list-style-type: none"> • Difference in travel time between hospital-GP
<p>Public Health England aims to protect and improve the nation's health and wellbeing, and reduce health inequalities. It is an executive agency, sponsored by the Department of Health. (See http://fingertips.phe.org.uk/)</p>	<ul style="list-style-type: none"> • Male life-expectancy