



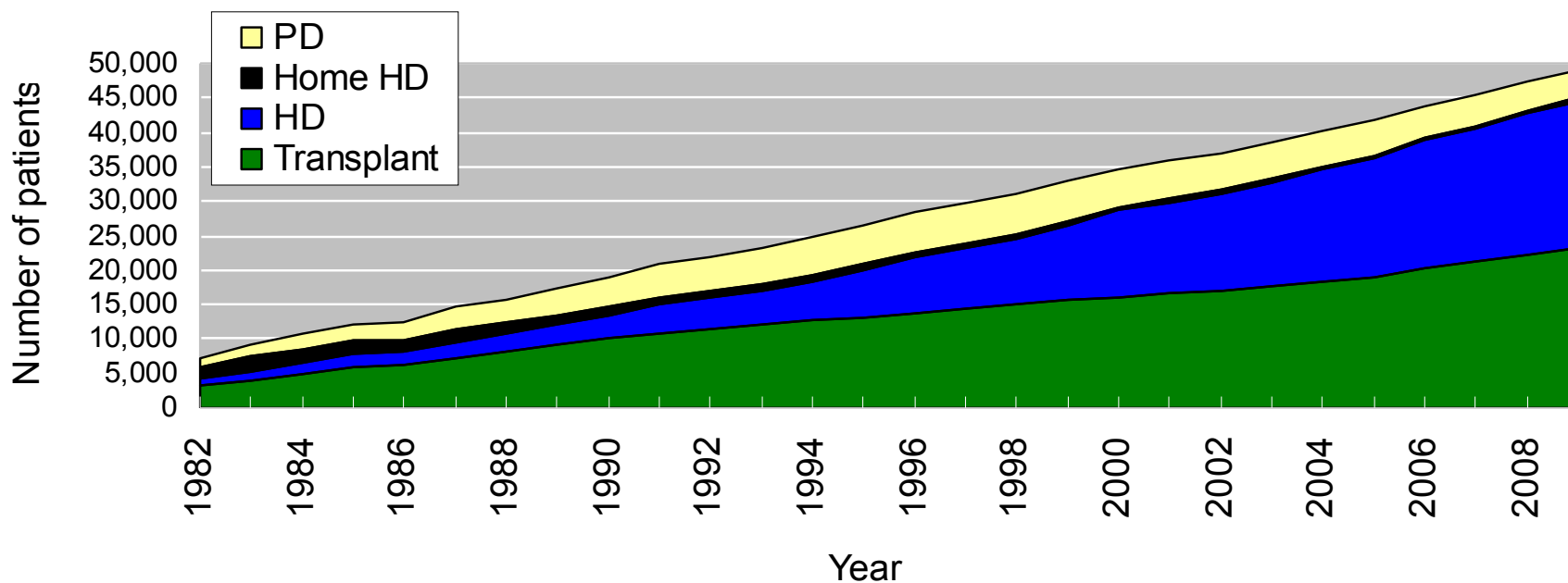
Variation in home dialysis in the UK

Dr Clare Castledine
Registrar UKRR

UK Renal Registry
2011 Annual Audit Meeting



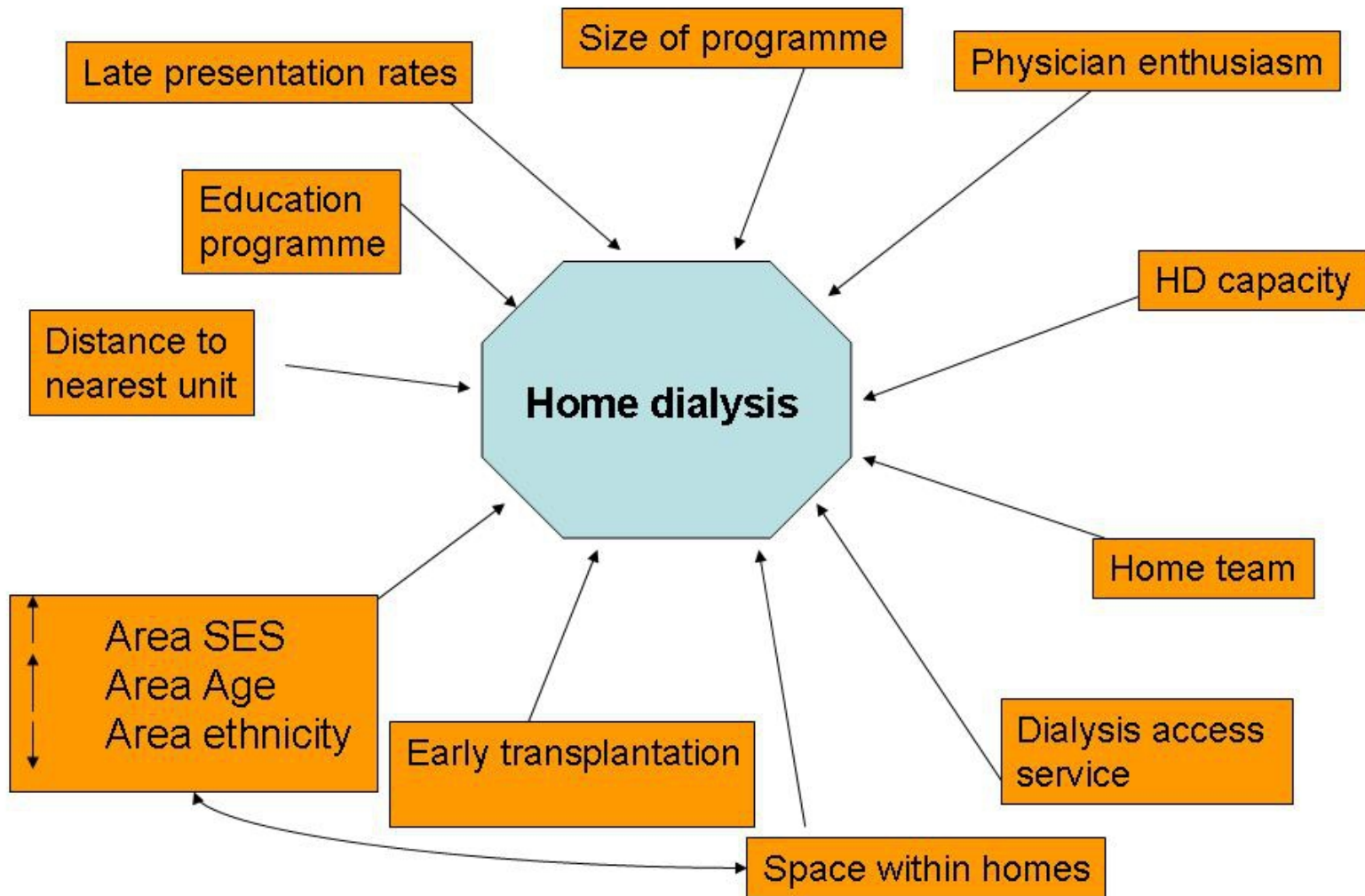
: Growth in prevalent patients, by treatment modality at the end of each year 1982-2009



Background

- NSF 2004 “People with ERF... given information about all forms of treatment so an informed choice can be made”
- NICE 2002 “all suitable patients should be offered the choice between home haemodialysis or haemodialysis in a hospital/satellite unit....assume 10-15% patients will choose home HD”
- Development of “best practice tariff” for dialysis

Background



Study cohort

Start RRT
2007+2008

13, 496

3, 251

1, 487

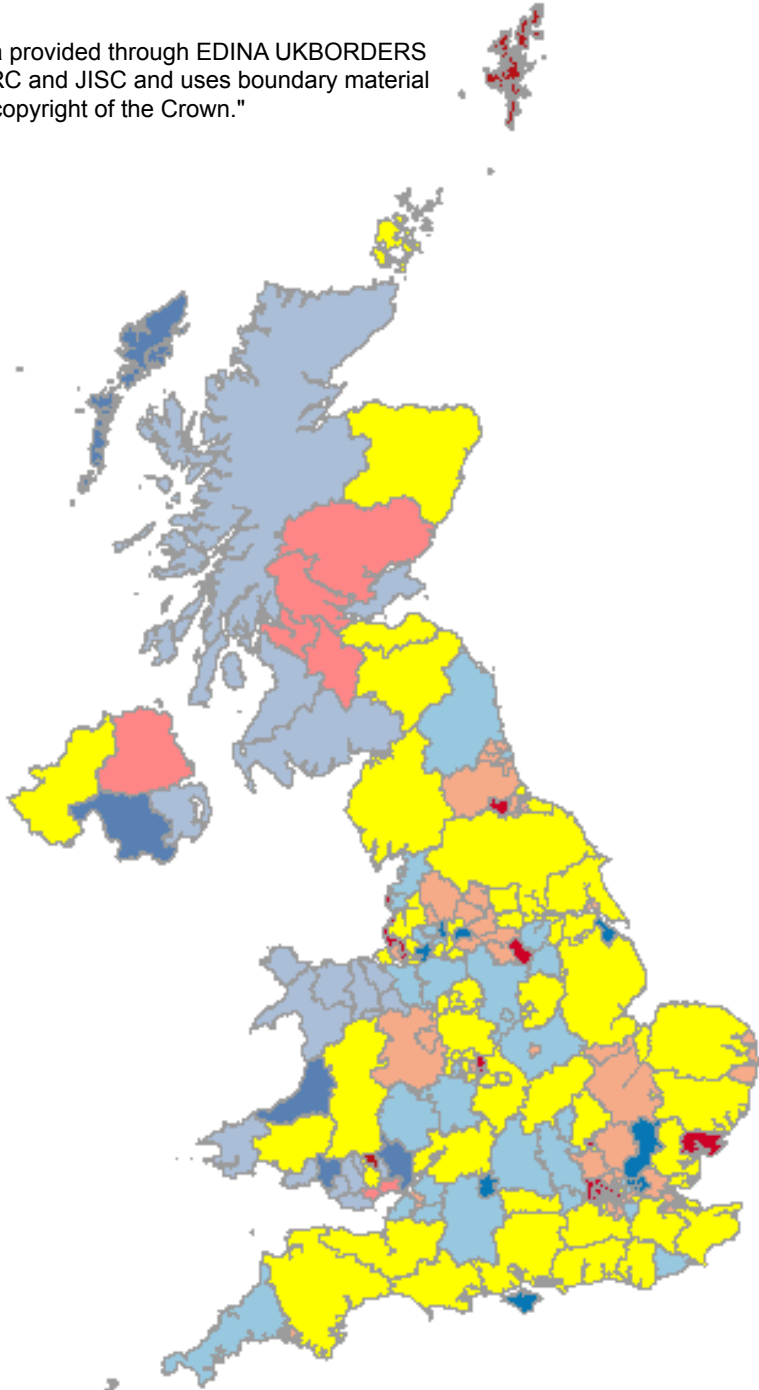
855

HHD or PD within 365 days

Transplant within 365 days

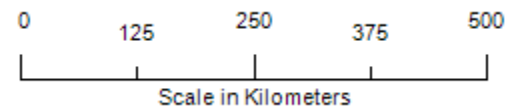
Died/stopped treatment
within 90 days

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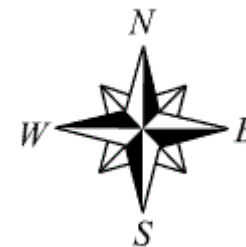


Percentage on home dialysis

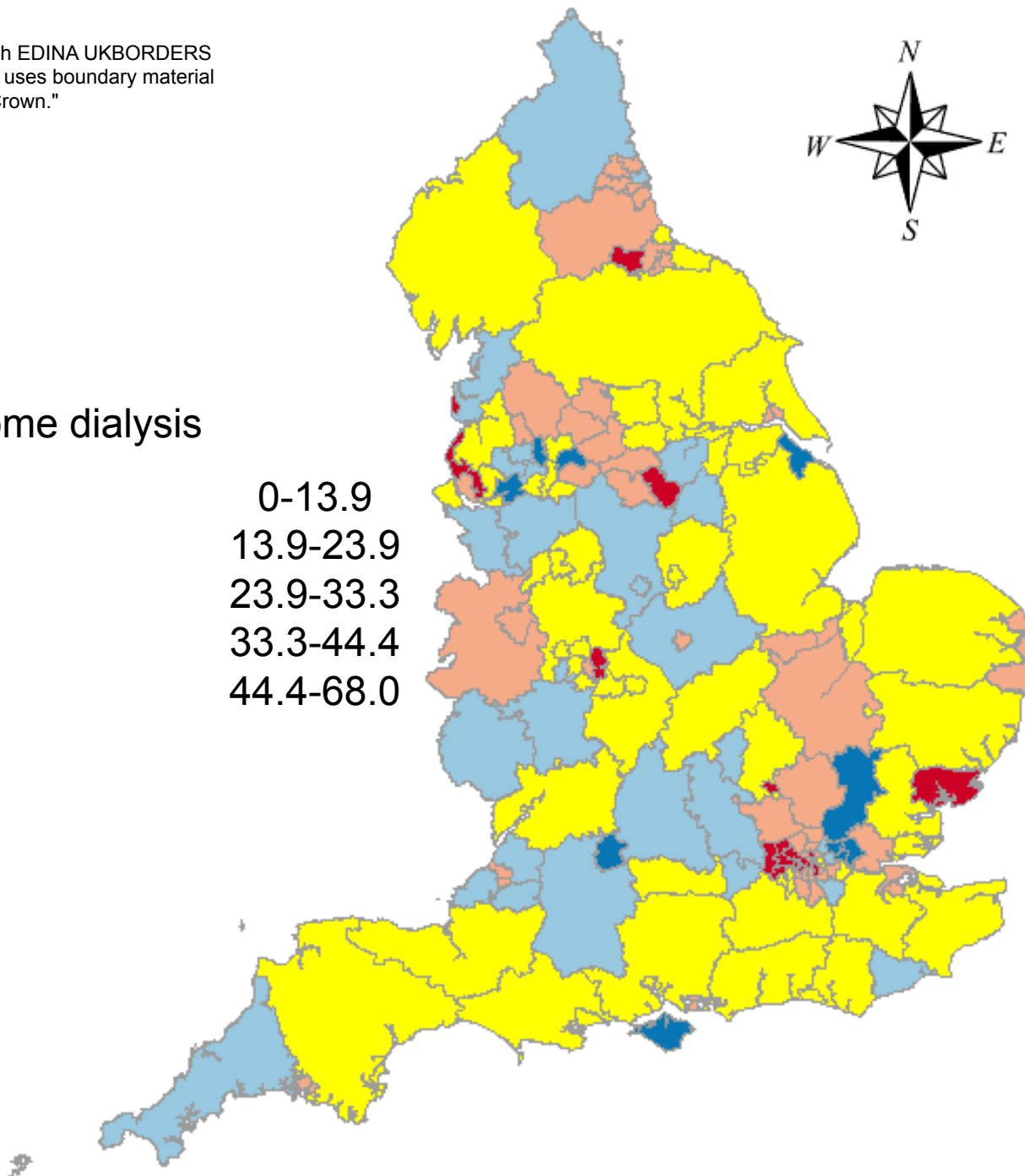
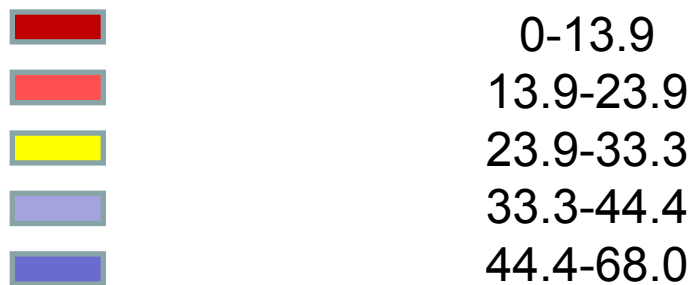
- 0-13.9
- 13.9-23.9
- 23.9-33.3
- 33.3-44.4
- 44.4-68.0



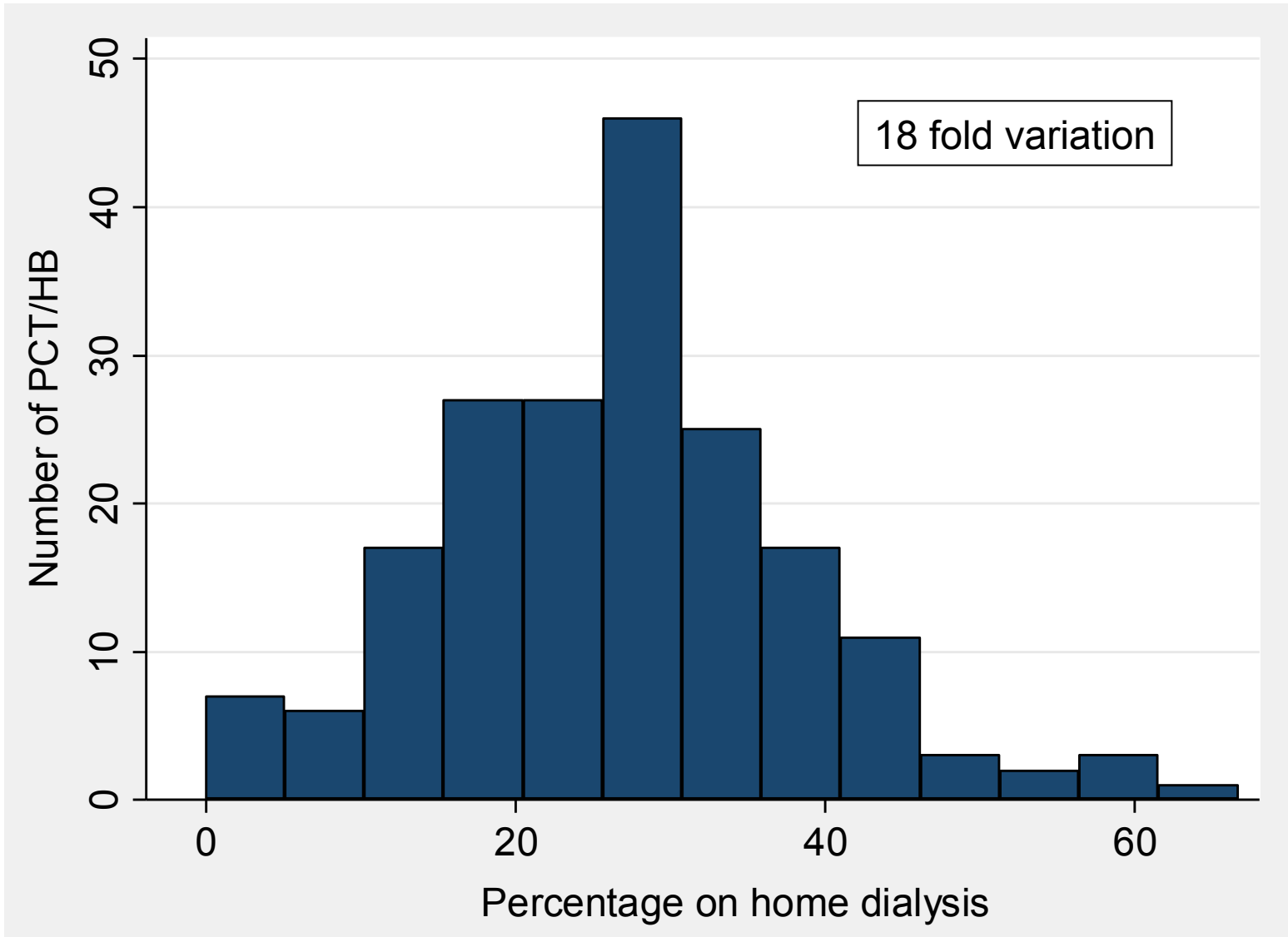
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Percentage on home dialysis



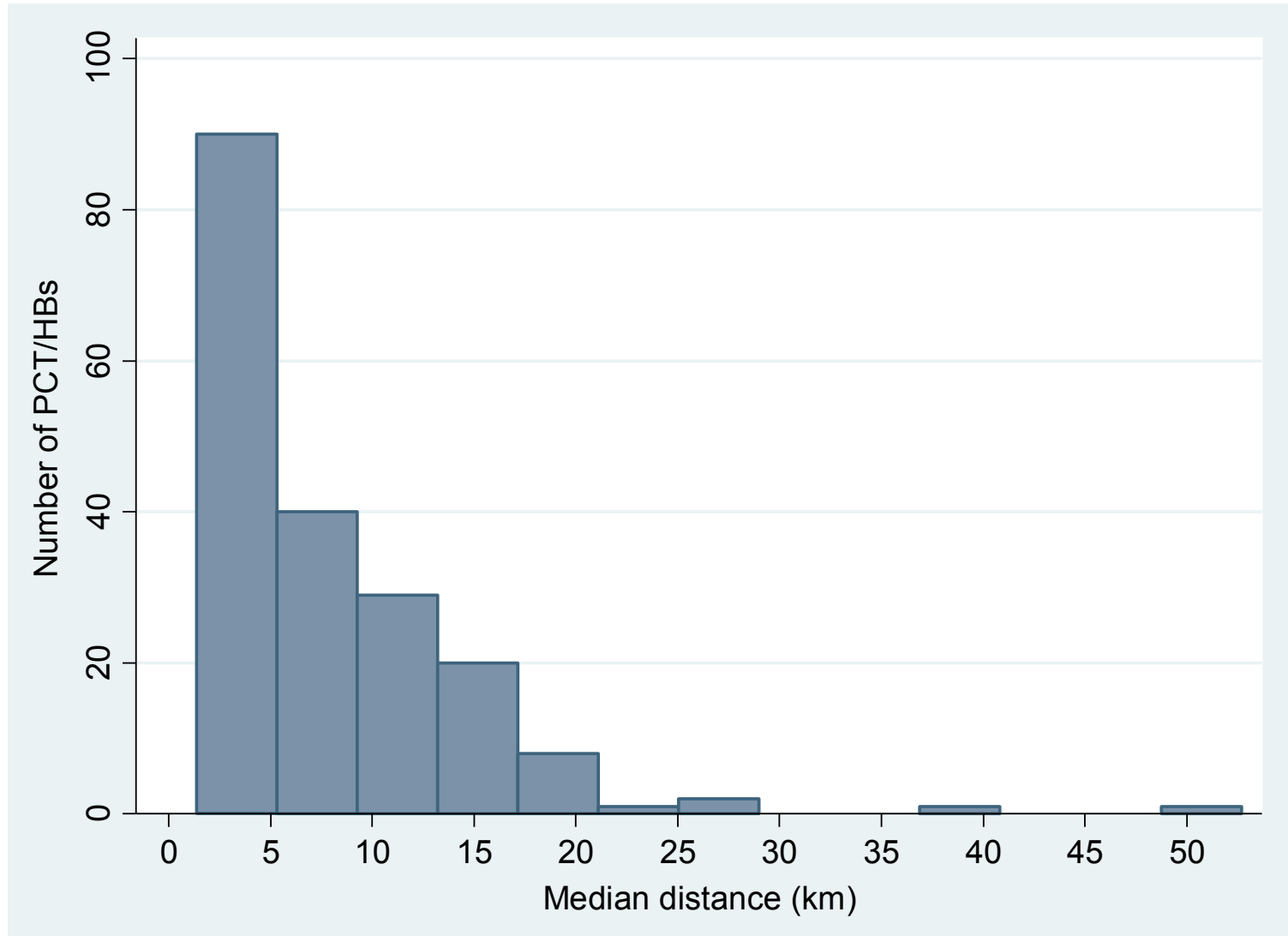
PCT home dialysis rate: Mean 26.8% Range 0% to 66.7%



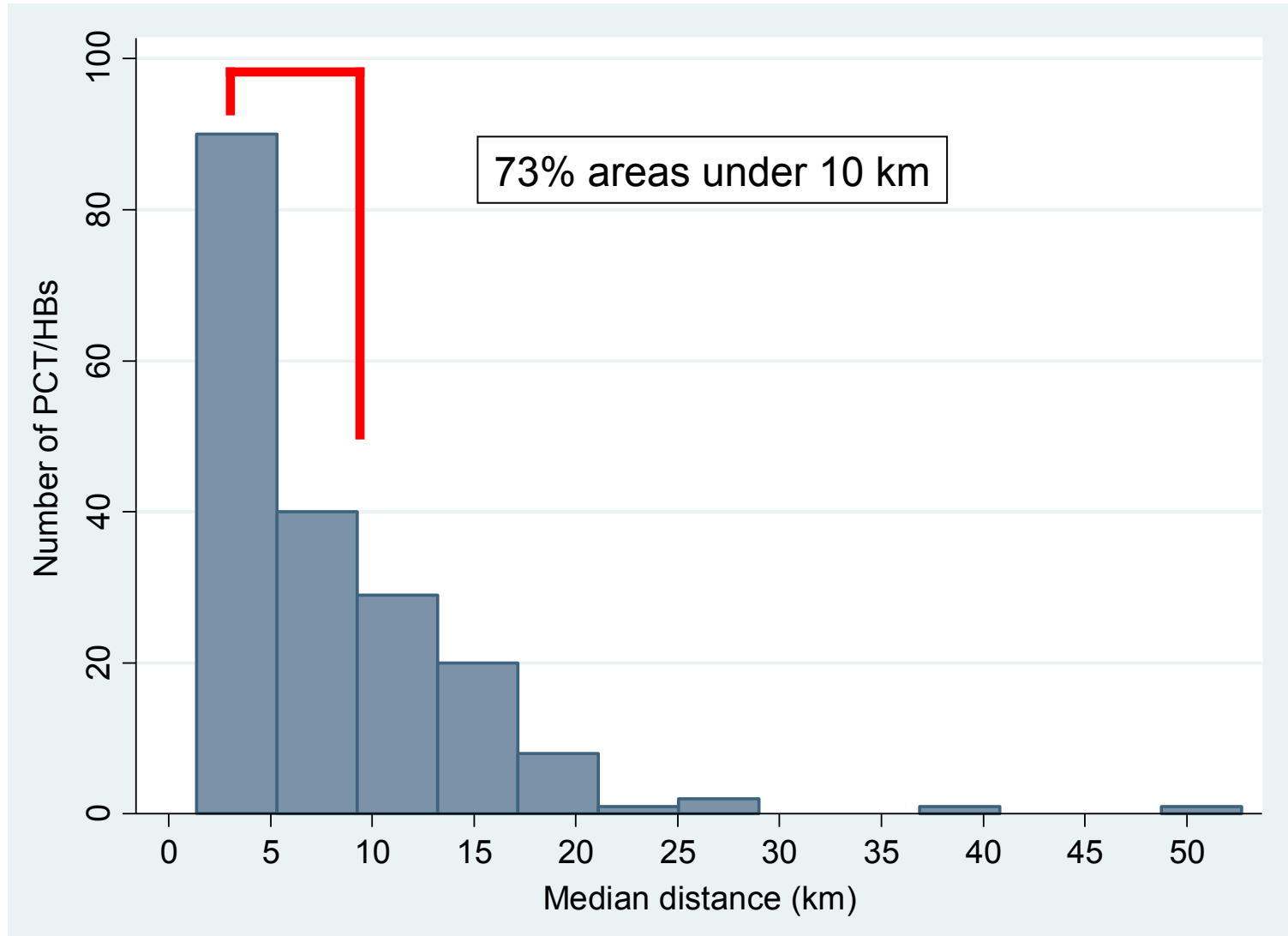
Data sources

- Secondary data sources
 - ONS/HES/QOF
- National renal centre survey
 - Content:
 - Literature review
 - Delphi consensus technique
 - 100% response rate
- NHS postcode directory for distance calculations

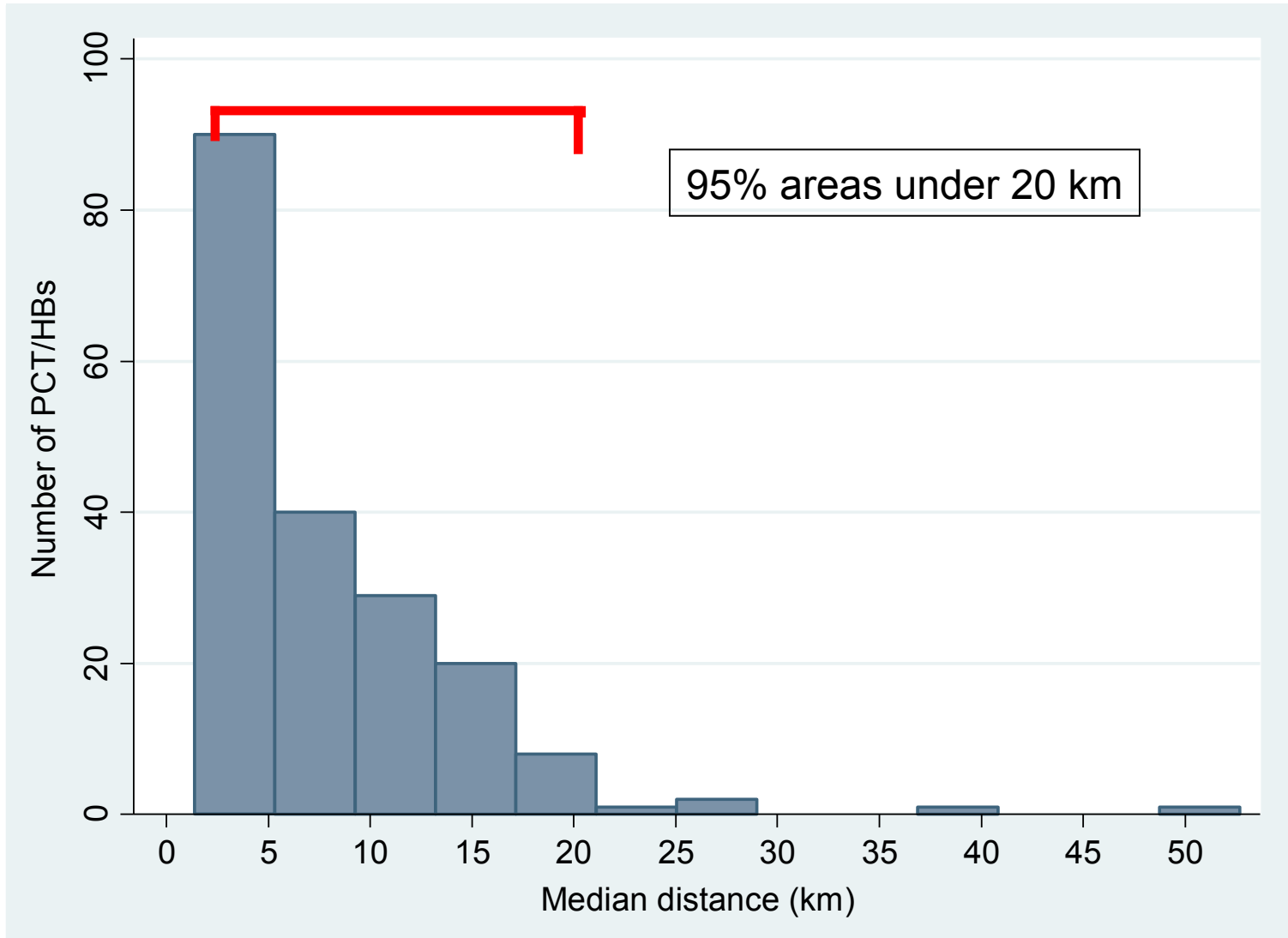
Distance



Distance



Distance



Methods

- Multilevel random intercept linear regression modelling
 - Allowing for clustering of PCTs within renal centres
 - Variation in home dialysis
 - 66% between PCTs
 - 34% between renal centres

Distance

	Effect on home dialysis rates (95% CI) p value		
Distance to nearest unit (km)	0.6 (0.4-0.8) p <0.001		

Area age

	Effect on home dialysis rates (95% CI) P value		
	Unadjusted		
Area age (% over 65)	1.4 (0.9-1.9) P<0.001		

Area age

	Effect on home dialysis rates (95% CI) P value	
	Unadjusted	Adjusted for distance
Area age (% over 65)	1.4 (0.9-1.9) P<0.001	1.0 (0.4-1.6) P=0.001

Area age

	Effect on home dialysis rates (95% CI) P value		
	Unadjusted	Adjusted for distance	Adjusted for distance and SES
Area age (% over 65)	1.4 (0.9-1.9) P<0.001	1.0 (0.4-1.6) P=0.001	0.3 (-0.3-1.0) P=0.3

Area socio-economic deprivation

	Effect on home dialysis rates (95% CI) p value		
	Unadjusted	Adjusted for distance	Adjusted for distance and HD capacity
Area deprivation			
Least deprived 1	Ref	Ref	Ref
2	-0.99 (-5.3, 3.3) p=0.7	-0.6 (-4.8, 3.6) p=0.8	0.6 (-3.9, 5.0) p=0.8
3	-6.1 (-10.5, -1.7) p=0.007	-5.2 (-9.6, -0.9) p=0.02	-4.6 (-9.2, 0.2) p=0.51
4	-7.4 (-11.6, -3.2) p=0.001	-5.5 (-9.8, -1.2) p=0.01	-5.3 (-9.9, -0.7) p=0.02
Most deprived 5	-12.0 (-16.5, -7.5) p<0.001	-9.6 (-14.3, -4.9) p<0.001	-9.0 (-14.0, -4.0) p<0.001

Area ethnic diversity

	Effect on home dialysis rates (95% CI) p value		
	Unadjusted	Adjusted for distance	Adjusted for distance and SES
% non white residents	-0.4 (-0.5, -0.2) p<0.001	-0.2 (-0.4, -0.08) P=0.005	-0.1 (-0.3, 0.1) P=0.3

Area ethnic diversity

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Transplantation rates

% new patients receiving a transplant by day 365	Number of PCT/HBs
Less than 5	33
5-10	61
10-15	44
5-20	37
More than 20	17

	Effect on home dialysis rates (95% CI) p value	
Transplant rate (% incident patients with transplant by 1 year) Per SD change	0.5 (-1.1, 2.1) p=0.5	

Physician enthusiasm

	Effect on home dialysis rates (95% CI) p value
'Ideal' % under 65 on PD (Per 1% change)	0.3 (0.05,0.5) p=0.01
'Ideal' % over 65 on PD (Per 1% change)	0.1 (-0.1, 0.4) p=0.3

Physician enthusiasm

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'Ideal' % under 65 on PD (Per 1% change)	0.3 (0.05,0.5) p=0.01
'Ideal' % over 65 on PD (Per 1% change)	0.1 (-0.1, 0.4) p=0.3
Frequency acute PD* used	6.1 (1.7, 2.5) p=0.006

133 PCT/HBs rarely use acute PD and 58 PCT/HBs use acute PD at least sometimes

* Acute PD defined as catheter use for solute clearance within 9 days of insertion

Physician enthusiasm

	Effect on home dialysis rates (95% CI) p value
Management system for PD patients	
Named consultant	2.1 (-2.7, 6.9) p=0.4
Single/team	Ref
Overview	-2.8 (-9.4, 3.9) p=0.4
Management system for HHD patients	
Named consultant	-1.0 (-5.9, 4.0) p=0.7
Single/team	Ref
Overview	-3.8 (-10.1, 2.6) p=0.2

Opinions about QoL and survival benefits of home vs hospital dialysis were unable to predict home dialysis rates

Pre dialysis education

	Effect on home dialysis rates (95% CI) p value
Use of video/DVD materials	7.7 (-13.1, -2.3) p=0.005

Pre dialysis education

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Use of vide/DVD materials	7.7 (-13.1, -2.3) p=0.005
Group session	-1.1 (-6.7, 4.6) p=0.7

Pre dialysis education

	Effect on home dialysis rates (95% CI) p value
Use of vide/DVD materials	7.7 (-13.1, -2.3) p=0.005
Group session	-1.1 (-6.7, 4.6) p=0.7
Talk from an HD patient	-4.5 (-8.6, -0.3) p=0.03

Pre dialysis education

	Effect on home dialysis rates (95% CI) p value
Use of vide/DVD materials	7.7 (-13.1, -2.3) p=0.005
Group session	-1.1 (-6.7, 4.6) p=0.7
Talk from an HD patient	-4.5 (-8.6, -0.3) p=0.03
Talk from an HHD and PD patient	-1.4 (-5.6, 2.9) p=0.5

Pre-dialysis education

	Effect on home dialysis rates (95% CI) p value
Use of vide/DVD materials	7.7 (-13.1, -2.3) p=0.005
Group session	-1.1 (-6.7, 4.6) p=0.7
Talk from an HD patient	-4.5 (-8.6, -0.3) p=0.03
Talk from an HHD and PD patient	-1.4 (-5.6, 2.9) p=0.5
Provision of education to late presenting patients	
Almost always	Ref
Frequently	-2.5 (-8.2, 3.2) p=0.4
Sometimes	-0.8 (-6.8, 5.1) p=0.8
Occasionally	-2.1 (-14.1, 9.9) p=0.7
Almost never	-15.8 (-27.6, -4.0) p=0.009

Limitations

- 1-2 responses per centre
- Residual confounding
- Time period chosen may underestimate home HD use dependent on local practices

Summary

- 34% variation in home dialysis rates is between renal centres
- Area deprivation
- Distance
- Physician enthusiasm
- Pre dialysis education programme

Thanks

- Each survey respondent
- Fergus Caskey, Yoav Ben-Shlomo, Chris Rogers
- Julie Gilg
- Data and systems teams UKRR