## Examining differences in health service utilisation between immigrants and non-immigrants in Australia

## **Abstract**

Using data from wave 9 of the Household, Income and Labour Dynamics in Australia (HILDA) survey and Negative-binomial regression models, this study examined whether there were any differences in the visits to general practitioner (GP), among Foreign-Born (FB) from English Speaking Countries (ESC) (1,219) and non-English Speaking Countries (NESC) (1,456) relative to Native-Born (NB) Australians (10,618). After adjusting for predisposing, enabling, and need factors, both FB from ESC and NESC had similar number of GP visits as those of the NB people. We also found both FB from ESC NESC had relatively fewer number of GP visits while their duration of residence (DoR) was less than 10 years and after 10 or more years of DoR they had similar levels of GP visits as those of the NB people. Differences in health care utilisation between FB and NB depends upon duration of residence in Australia.

Results:

Table 1: Negative Binomial regression model results with CoB as the main exposure variable. Results were presented in the form of incidence ratios and their 95% confidence limits.

	Model I		Model II		Model III		Model IV	
	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI
Intercept	4.77**	( 4.65, 4.90)	8.98**	( 8.41, 9.59)	10.11**	( 9.37,	12.21**	(10.22,
		(		( , , , , , , , , , , , , , , , , , , ,		10.90)		14.58)
СоВ								
ES countries	1.03	( 0.95, 1.13)	0.96	( 0.88, 1.04)	0.95	( 0.87, 1.04)	0.97	( 0.90, 1.05)
NES countries	1.19**	( 1.10, 1.28)	1.08*	( 1.00, 1.16)	1.05	( 0.98, 1.13)	0.96	( 0.89, 1.03)
Australia (R)								
Sex								
Male			0.70**	( 0.67, 0.74)	0.71**	( 0.67, 0.74)	0.67**	( 0.64, 0.71)
Female (R)								
Age group								
15-29 years			0.79**	( 0.72, 0.87)	0.75**	( 0.68, 0.82)	1.22**	( 1.11, 1.34)
30-44 years			0.83**	( 0.77, 0.91)	0.79**	( 0.73, 0.86)	1.05	( 0.96, 1.14)
45-59 years			0.91*	( 0.84, 0.98)	0.88**	( 0.82, 0.95)	0.96	( 0.89, 1.03)
>=60 years (R)								
Level of education								
Exactly 12 years of schooling			0.96	( 0.89, 1.04)	0.98	( 0.91, 1.06)	1.01	( 0.94, 1.09)
Diploma			1.01	( 0.95, 1.08)	1.03	( 0.97, 1.10)	1.05	( 0.99, 1.12)
Had University education			0.82**	( 0.77, 0.87)	0.88**	( 0.83, 0.94)	0.99	( 0.93, 1.05)
<12 years of schooling (R)								
Employment status								
Employed			0.59**	( 0.55, 0.63)	0.63**	( 0.59, 0.67)	0.83**	( 0.78, 0.89)
Unemployed			0.76**	( 0.66, 0.88)	0.73**	( 0.63, 0.85)	0.84*	( 0.72, 0.99)
Not in labour force (R)								
Current marital status								
Separated/Widowed/divorced			1.13**	( 1.05, 1.21)	1.08*	( 1.01, 1.16)	1.01	( 0.95, 1.08)
Never married			1.01	( 0.93, 1.09)	0.99	( 0.92, 1.08)	0.97	( 0.90, 1.05)
Married/in De facto relation (R)								
Place of residence								
Other Urban			1.00	( 0.94, 1.06)	0.97	( 0.91, 1.02)	0.96	( 0.90, 1.02)
Other			0.92*	( 0.86, 0.99)	0.89**	( 0.84, 0.95)	0.88**	( 0.83, 0.95)
Major Urban (R)								
Do you have health care card								
Yes					1.17**	( 1.08, 1.27)	1.17**	( 1.08, 1.28)
No (R)								
Do you have private Health								
insurance								
Yes					0.88**	( 0.83, 0.92)	0.95	( 0.91, 1.00)
No (R)								
Equalised income					0.98**	( 0.98, 0.99)	0.99*	( 0.99, 1.00)
Self-rated health								
Fair							0.71**	( 0.61, 0.84)
Good							0.44**	( 0.38, 0.52)
Very good							0.33**	( 0.28, 0.39)
Excellent							0.27**	( 0.22, 0.32)
Poor (R)								
No of chronic conditions present							1.25**	( 1.21, 1.28)
BMI								
Underweight (BMI less than 18.5)							0.92*	( 0.86, 0.98)
Normal range (BMI 18.5 to less							1.00	( 0.94, 1.07)
than 25.0)  Overweight (BMI 25.0 to less than							0.86	( 0.74, 1.00)
30.0)						<u> </u>	0.00	( 0.74, 1.00)
Obese (BMI 30.0 and greater) (R)								

Table 2: Negative Binomial regression model results with DoR as the main exposure variable. Results were presented in the form of incidence ratios and their 95% confidence limits.

Estimate		Model I		Model II		Model III		Model IV	
Intercept			95% CI		95% CI		95% CI		95% CI
DaR	Intercent								
ES; Dok   O		4.//	( 4.03, 4.70)	0.07	( 0.31, 7.47)	10.01	( ).20, 10.00)	12.10	(10.14, 14.43)
ES Do R.   10-19   0.79°   (0.65, 0.98)   0.85   (0.09, 1.03)   0.84   (0.09, 1.03)   0.00   (0.77, 1.06)   (0.07, 1.06)   (0.09, 1.10)   1.00   (0.09, 1.10)   (0.09, 1.		0.58**	( 0.46   0.74)	0.71**	( 0.56, 0.90)	0.71**	( 0.56, 0.90)	0.79*	( 0.64 0.97)
ES: DoR > 20									
NES, DaR C 10									
NES. DAR 10 to 19									
NES, De S = 20									
NB (R)									
Male		1.33	( 1.21, 1.40)	1.17	(1.04, 1.24)	1.12	( 1.02, 1.22)	1.00	( 0.51, 1.10)
Male									
Female (R)				0.70**	( 0.67 0.74)	0.71**	( 0.67 0.74)	0.67**	( 0.64 0.71)
Age group				0.70	( 0.07, 0.74)	0.71	( 0.07, 0.74)	0.07	( 0.04, 0.71)
15.29 years									
30-44 years   0.85**   0.78, 0.92)   0.81**   (0.74, 0.88)   1.06   (0.97, 1.15)				0.01**	( 0.74 0.80)	0.76**	( 0.60 0.84)	1 24**	( 1 12   1 26)
45.59 years									
Segorate (R)		<del> </del>	+						
Level of delucation		<del> </del>	+	5.71	( 0.05, 0.76)	0.07	( 0.02, 0.70)	0.70	( 0.07, 1.03)
Exactly 12 years of schooling   0.96		<del> </del>	+		+				1
Diplome		<del> </del>	+	0.96	( 0.89 1.04)	0.98	( 0.91 1.06)	1.01	( 0.94 1.09)
Had University education   0.83**   (0.78, 0.88)   0.89**   (0.84, 0.95)   0.99   (0.93, 1.06)		<del> </del>	+						
Clayers of schooling (R)									
Employed		<del> </del>	+	0.05	( 0.70, 0.00)	0.07	( 0.04, 0.73)	0.77	( 0.73, 1.00)
Employed									
Unemployed   0.77**   (0.66, 0.89)   0.74**   (0.64, 0.87)   0.84*   (0.72, 0.99)				0.50**	( 0.55, 0.62)	0.62**	( 0.50 0.67)	0.82**	( 0.77 0.80)
Not in labour force (R)									
Current marital status				0.77	( 0.00, 0.09)	0.74	( 0.04, 0.67)	0.04	( 0.72, 0.99)
Separated/Widowed/divorced   1.13**   (1.06, 1.21)   1.08*   (1.01, 1.16)   1.01   (0.95, 1.08)									
Never married   1.01   (0.93, 1.09)   (0.99, 1.07)   (0.97, 1.04)				1 12**	( 1.06, 1.21)	1.00*	( 1.01 - 1.16)	1.01	( 0.05 1.09)
Married/in De facto relation (R)         Place of residence         Conter Urban									
Place of residence				1.01	( 0.53, 1.05)	0.55	( 0.92, 1.07)	0.57	( 0.50, 1.04)
Other Urban   1.00   (0.94, 1.06)   0.96   (0.91, 1.02)   0.95   (0.90, 1.01)									
Other         0.92*         (0.86, 0.98)         0.89**         (0.83, 0.95)         0.88**         (0.83, 0.94)           Major Urban (R)				1.00	( 0.04 1.06)	0.06	( 0.01 1.02)	0.05	( 0.00 1.01)
Major Urban (R)									
Do you have health care card   Yes   1.17**   (1.08, 1.26)   1.17**   (1.07, 1.28)   No (R)   Do you have private Health insurance				0.92*	( 0.80, 0.98)	0.89***	( 0.83, 0.93)	0.88**	( 0.83, 0.94)
Yes									
No (R)  Do you have private Health insurance  Yes  0.87** (0.83, 0.92) 0.95 (0.91, 1.00)  No (R)  Equalised income  Self-rated health  Fair  0.72** (0.61, 0.84)  Good  Very good  Very good  Excellent  Poor (R)  No of chronic conditions present  BMI  Underweight (BMI less than 18.5)  Normal range (BMI 18.5 to less than 30.0)  No were weight (BMI 25.0 to less than 30.0)  No of chronic conditions present  BOOK (0.74, 1.00)						1 17**	( 1.09 1.26)	1 17**	( 107 129)
Do you have private Health insurance						1.17	( 1.06, 1.20)	1.17	(1.07, 1.26)
Insurance									
Yes         0.87**         (0.83, 0.92)         0.95         (0.91, 1.00)           No (R)         0.98***         (0.98, 0.99)         0.99*         (0.99, 1.00)           Self-rated health         0.72**         (0.61, 0.84)         0.72**         (0.61, 0.84)         0.86         0.28, 0.39)         0.28*         0.28*         0.28*         0.28*         0.28*         0.28*         0.28*         0.28*         0.27**         0.28*         0.28*         0.29*         0.22*         0.33**         0.22*         0.32*         0.27**         0.27**         0.22*         0.32*         0.27**         0.22*         0.32*         0.22*         0.32*         0.22*         0.32*         0.22*         0.32*         0.22*         0.32*         0.22*         0.32*         0.22*         0.32*         0.22*         0.32*         0.22*         0.32*         0.22*         0.32*         0.22*         0.32*         0.22*         0.22*         0.32*         0.22*         0.32*         0.22*         0.22*         0.22*         0.22*         0.22*         0.22*         0.22*         0.22*         0.22*         0.22*         0.22*         0.22*         0.22*         0.22*         0.22*         0.22*         0.22*         0.22*         0.22* <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
No (R)  Equalised income  Self-rated health Fair  Good  Very good  Very good  Excellent  Poor (R)  No of chronic conditions present  BMI  Underweight (BMI less than 18.5)  Normal range (BMI 18.5 to less than 30.0)  No were weight (BMI 25.0 to less than 30.0)  O .99*  ( 0.99, 1.00)  0.99*  ( 0.99, 1.00)  0.99*  ( 0.61, 0.84)  ( 0.61, 0.84)  ( 0.61, 0.84)  ( 0.33, 0.52)  ( 0.28, 0.39)  ( 0.28, 0.39)  ( 0.27**  ( 0.22, 0.32)  ( 0.22, 0.32)  ( 0.24, 0.32)  ( 0.25, 0.32)  ( 0.26, 0.98)  ( 0.86, 0.98)  ( 0.99*  ( 0.86, 0.98)  ( 0.74, 1.00)		1	+		+	0.87**	( 0.83 0.92)	0.95	( 0.91, 1.00)
Equalised income       0.98**       (0.98, 0.99)       0.99*       (0.99, 1.00)         Self-rated health       0.72**       (0.61, 0.84)         Good       0.45**       (0.38, 0.52)         Very good       0.33**       (0.28, 0.39)         Excellent       0.27**       (0.22, 0.32)         Poor (R)       1.24**       (1.21, 1.27)         BM       0.92*       (0.86, 0.98)         Normal range (BMI less than 18.5)       0.92*       (0.86, 0.98)         Normal range (BMI 18.5 to less       1.00       (0.94, 1.07)         than 25.0)       0.86       (0.74, 1.00)		1	+		+	5.07	( 0.05, 0.52)	3.25	( 3.71, 1.00)
Self-rated health         0.72** (0.61, 0.84)           Fair         0.72** (0.38, 0.52)           Good         0.45** (0.38, 0.52)           Very good         0.33** (0.28, 0.39)           Excellent         0.27** (0.22, 0.32)           Poor (R)         1.24** (1.21, 1.27)           BMI         Underweight (BMI less than 18.5)         0.92* (0.86, 0.98)           Normal range (BMI 18.5 to less than 18.5)         1.00 (0.94, 1.07)           than 25.0)         0.86 (0.74, 1.00)			+		+	0.98**	( 0.98 0.99)	0.99*	( 0.99 1.00)
Fair 0.72** (0.61, 0.84) Good 0.45** (0.38, 0.52) Very good 0.33** (0.28, 0.39) Excellent 0.27** (0.22, 0.32) Poor (R) 1.24** (1.21, 1.27)  BMI 1.24** (1.21, 1.27)  BMI 1.24** (0.86, 0.98) Normal range (BMI 18.5 to less than 18.5) 0.92* (0.86, 0.98) Normal range (BMI 25.0 to less than 30.0) 0.86 (0.74, 1.00)			+		+	3.70	( 0.70, 0.77)	3.77	( 3.77, 1.00)
Good Very good V		1	+		+			0.72**	( 0.61 - 0.84)
Very good   0.33** (0.28, 0.39)		1	+		+				
Excellent   0.27** (0.22, 0.32)		1	+		+				
Poor (R)			+		+	1	+		
No of chronic conditions present   1.24** (1.21, 1.27)		1	+		+			0.27	( 0.22, 0.32)
BMI		1	+		+			1.24**	( 1.21, 1.27)
Underweight (BMI less than 18.5) 0.92* (0.86, 0.98)  Normal range (BMI 18.5 to less 1.00 (0.94, 1.07) (0.94,			+		+		+	1.27	( 1.21, 1.27)
Normal range (BMI 18.5 to less than 25.0) (0.94, 1.07) (0			+		+		+	0.92*	( 0.86 (0.98)
than 25.0)  Overweight (BMI 25.0 to less than 30.0)  0.86 (0.74, 1.00)			+		+		+		
Overweight (BMI 25.0 to less than 30.0) 0.86 ( 0.74, 1.00)					1			1.00	( 3.24, 1.07)
30.0)		1	+		+			0.86	( 0.74   1.00)
			İ		İ			0.00	( 0.74, 1.00)
	Obese (BMI 30.0 and greater) (R)	1			+				<u> </u>