

The Relationship between Self-reported Unmet Need for Health Care and Health Care Utilization

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- Equity of access to health care is an important dimension of health system performance
- Studying reasons for unmet need can inform our understanding of the extent of access problems
- Unmet need can arise due to many reasons only some of which may be of policy concern
⇒ important to study the relationship between utilization of health care and unmet need

Literature on unmet needs

- Studies show a growing prevalence of unmet needs in Canada, prevalence rates are now 13-15% and as high as 18-19% in parts of Quebec
- Estimates of unmet need range from 1% in Denmark to 13% in Sweden
- Factors associated with reporting an unmet need include being female, being younger, poorer health status, higher education

Literature on unmet needs and health care utilization

- Allin et al (2008) used the 2005 CCHS to examine the relationship between self-reported unmet needs and utilization of GP, specialist and inpatient services
- They find that the relationship varied among the different reasons for having an unmet need and with the specific measure of utilization analyzed
- This study builds on Allin et al (2008) to explore this relationship in more detail

- Linked Ontario component of the Canadian Community Health Survey (CCHS) cycle 1.1 and data from the Ontario Ministry of Health and Long-term Care regarding physician and hospital services
- Dependent variables (dollar values)
 - GP services
 - specialist services
 - total physician services
 - hospital services
 - total physician and hospital services

Unmet need variables

- “During the past 12 months, was there ever a time when you felt that you needed health care but you didn’t receive it?”

[If “yes”] “Thinking of the most recent time, why didn’t you get care?”

Personal Reason	System-related Reason
Too busy	Not available in area
Didn't get around to it	Not available when required
Didn't know where to go	Wait time too long
Transportation problems	Cost
Personal/family responsibilities	Language problems
Dislikes doctors/afraid	
Decided not to seek care	
Felt it would be inadequate	

- (1) Models of health care utilization are estimated using both need-related (e.g., age, sex, health status) and non-need-related variables (e.g., income, education, immigrant status)

$$U_i = G(\alpha + X_i\beta + Z_i\gamma; \epsilon_i)$$

where U_i is utilization of health care by individual i

X_i is a vector of need-related characteristics of individual i

Z_i is a vector of non-need-related characteristics of individual i

- Two-part models are estimated
 - Part 1 (probability of use): probit
 - Part 2 (conditional use): GLM with log link, gamma variance

- (2) Calculate each individual's needs-predicted utilization: the amount of utilization if utilization was driven only by need-related factors

$$\text{Needs-predicted use}_i = \hat{U}_{N,i} = G(\hat{\alpha} + X_i\hat{\beta} + \bar{Z}\gamma)$$

where non-need-related variables are set to their sample means

- (3) Calculate needs-predicted residuals = actual – needs-predicted use

$$\text{Needs-predicted residual}_i = R_{N,i} = U_i - \hat{U}_{N,i}$$

Mean costs

	No unmet needs (a)	Unmet needs (b)	Unmet/No Unmet (b)/(a)	Unmet needs (personal) (c)	Unmet needs (system) (d)	System/Personal (d)/(c)
<i>N</i>	25917	3836		1881	2285	
Utilization (\$)						
GP costs	146	193	1.32	176	212	1.203
GP costs (cond)	183	227	1.24	215	240	1.118
Specialist costs	242	394	1.628	353	498	1.41
Specialist costs (cond)	377	544	1.444	530	637	1.202
Physician costs	388	587	1.513	529	710	1.341
Physician costs (cond)	461	664	1.443	618	778	1.258
Hospital costs	386	599	1.551	572	719	1.258
Hospital costs (cond)	3141	3388	1.078	3655	3518	0.963
Total costs	774	1186	1.532	1101	1429	1.298
Total costs (cond)	918	1341	1.461	1286	1564	1.216

Impact of Unmet Need on Health Care Utilization

	Probability of Use	Conditional Amount of Use (\$)
GP costs		
Unmet need: personal	-0.028	-7.821
Unmet need: system-related	0.032	11.200
Specialist costs		
Unmet need: personal	-0.068	5.835
Unmet need: system-related	0.059	80.729
Physician costs		
Unmet need: personal	-0.035	-5.392
Unmet need: system-related	0.017	95.461
Hospital costs		
Unmet need: personal	-0.008	162.435
Unmet need: system-related	0.023	-108.775
Total costs		
Unmet need: personal	-0.036	18.427
Unmet need: system-related	0.018	109.455

The Effect of Unmet Need on (actual-needs predicted) Residuals – OLS Regression

	Probability	Conditional	Total
GP costs			
Unmet need: personal reasons	-0.020	-12.081	-15.569
Unmet need: system-related reasons	0.030	10.680	12.397
Specialist costs			
Unmet need: personal reasons	-0.052	34.043	2.572
Unmet need: system-related reasons	0.046	168.643	142.800
Physician costs			
Unmet need: personal reasons	-0.026	0.077	-15.512
Unmet need: system-related reasons	0.019	168.233	154.881
Hospital costs			
Unmet need: personal reasons	-0.011	67.137	-11.516
Unmet need: system-related reasons	0.027	-192.418	103.909
Total costs			
Unmet need: personal reasons			-46.338
Unmet need: system-related reasons			245.396

The Effect of Unmet Needs on the Probability of a Positive Residual – Odds Ratios from Logistic Regression

	Probability	Conditional	Total
GP costs			
Unmet need: personal reasons	1.171	0.862	0.828
Unmet need: system-related reasons	2.009	1.257	1.252
Specialist costs			
Unmet need: personal reasons	1.082	0.844	0.836
Unmet need: system-related reasons	2.067	1.348	1.577
Physician costs			
Unmet need: personal reasons	1.117	0.771	0.772
Unmet need: system-related reasons	2.051	1.359	1.542
Hospital costs			
Unmet need: personal reasons	1.265	1.221	1.070
Unmet need: system-related reasons	1.718	1.063	1.415
Total costs			
Unmet need: personal reasons			0.759
Unmet need: system-related reasons			1.272

Conclusion

- Patterns of health care use differ notably between those with no unmet needs, those with unmet needs due to personal reasons, and those with unmet needs due to system factors
 - Individuals with unmet needs due to system related reasons are not only high users, they are higher than expected users
 - Individuals with unmet needs due to personal reasons use the same or fewer services than expected
- Policy implications
 - Unmet needs due to personal reasons require little policy response
 - Unmet needs due to system reasons may require policy response, but it is necessary to further identify the true cause – unmeasured health care needs vs. poor system performance vs. unreasonable patient expectations