



Are Australians willing to be treated by a physician assistant?

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RESEARCH

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Abstract

Background

Physician assistants (PAs) are deployed to extend the role of the general practitioner and other doctors in Canada, England, Scotland, The Netherlands, the United States and elsewhere. Because Australians have little experience with this type of provider, we undertook a study to test the willingness of patients to be treated by a PA.

Method

A time trade-off preference survey was administered to women naïve about PAs in Northern Queensland in 2009. Each survey described one of three scenarios of injury and asked the patient to make a decision between waiting four hours for a doctor or one hour for a PA.

Results

A total of 229 candidate patients unconditionally participated (225 met criteria). Two-thirds were between the ages of 20 & 35 years. All but two of the participants (99%) selected to be treated by the PA regardless of the scenario. When choices of time differences between a doctor and a PA were reduced to 2 hours and 1 hour, respectively, the preferential choice of seeing the PA persisted.

Conclusion

Australian women in Northern Queensland were willing to be treated by a PA as a theoretical construct and without actual experience or knowledge of PAs. The familiar doctor care was traded for that of a PA when access to care was more available. Developing PAs in Australian society may be practical and patient attitudes more accepting, than realized. The concept of *willingness to be treated* has utility in socioeconomic research.

Key Words

Surrogate patient, informed choice, ethics, non-physician clinicians, informed consent, trade-off, concept model, Queensland.

Background

Physician assistants (PAs) were established in the medical workforce to expand services and improve access. For the most part this policy seems to be achieving its intended purpose [1]. In America, PAs and advanced practice nurses are providing care in some nonurban locations and some underserved populations (such as the poor and elderly) proportionally more than doctors [2, 3].

Australia has been examining the PA since 2005 in various conferences and in discussions with different leaders [4, 5]. To gain experience, demonstration projects employing American PAs were initiated in Queensland and Adelaide, and completed in 2010 [6, 7]. American PA students have also been visiting central Australia for rural health clinical experience since 2007 [8]. In addition, a graduate level PA program was inaugurated at the University of Queensland in 2009. However, these initiatives have not always been met with enthusiasm. One issue is safety -- whether PAs are safe and in the best interest of Australians. In 2007, the Australian Medical Student Association (AMSA) released its *Physicians Assistant Policy*, which was authored by the University of Queensland Medical Society president:

AMSA is focussed on improving patient outcomes through quality medical education and clinical



experience. AMSA believes that Physician Assistants (PA) are an inappropriate measure to address current workforce shortages in the Australian healthcare system. AMSA believes that their training will undermine and diminish the available resources for medical students and junior doctors. Reducing training opportunities may have a negative impact on the level of clinical experience for Australia's future medical workforce and hence compromise patient safety. For their impact on student teaching, patient safety and the community, AMSA opposes the training and employment of Physician Assistants in Australia in the current climate where clinical training places are insufficient. [9].

A debate about introducing the PA in Australia has been carried on in various venues and by various observers [10, 11, 12]. What has been missing from this debate is the patient's perspective. How potential patients in Australia perceive this new practitioner and whether they are willing to be treated by a PA has not been evaluated. As of this writing, no poll, public discussion or patient's attitudes about PAs in Australia has been promulgated. We saw an opportunity to examine patient attitudes *a priori* of the utilization of PAs and turned to an established method of testing theoretical constructs using choice and trade-offs research.

Trade-off is a term relating to opportunity cost that is sometimes used to obtain an economic benefit. To acquire this benefit, it is necessary to trade off one desired economic choice for another. A trade-off involves a sacrifice made to obtain a benefit. One classic trade-off in business is the trio of time, money and quality. Economists generally believe that only two of the three can be achieved at any given time [13].

Economic and behavioural sciences substantiate that patients are willing to make trade-offs in medical care at different times in their lives, for different objectives, under various circumstances [13]. Access to care may be one of those trade-offs that patients are willing to make if a lesser-trained but equally skilled provider is more available for a specific task.

In medicine, patients and doctors are often faced with difficult decisions involving trade-offs. For example, a patient with localized prostate cancer needs to weigh the possibility of prolonged life expectancy against possible stressful treatment side-effects (patient trade-off) [14]. Another is the time spent suffering while waiting to see a doctor versus being seen by a provider who is perceived as less trained but more available than a doctor (such as a paramedic or a nurse).

Governmental trade-offs are among the most controversial political and social choices, and are difficult to make under most circumstances. Much of politics can be viewed as a series of trade-offs based on the core values considered most dear to the most people or politicians. The PA's introduction to the United States was controversial at the time, and societal input was not sought. In this instance the trade-off for improving medical care access was using PAs rather than recruiting or training more doctors [15]. Patient attitudes were not sought at the time.

Knowledge about patient choice in using PAs is limited. In a study of remote Texas towns where a PA was the sole provider of care, townsfolk said they would like to have a doctor, but if a doctor were not available, a PA was the next best thing. None of the small rural towns visited were large enough to support a doctor [16].

In the Australian context, the introduction of PAs was seen as a rare opportunity to explore patient attitudes prior to being treated by them. Such an undertaking is more significant in that it also provides some theoretical framework as to why societies accept PAs, and whether other societies will benefit from the introduction of PAs. No policy enactment involving a new type of provider of care will overcome strong patient objections if they are unwilling to be treated by them. We selected an area of Australia where PAs were unknown to the population but were likely to be part of the medical workforce over the next few years.

The basis for this undertaking is an earlier study that suggests that patients who are naïve about PAs are still willing to accept their care under certain circumstances. A study of American patients in the waiting rooms in two hospital emergency departments was undertaken in 2003. A total of 207 patients consented to participate and met the criteria - not knowing anything about a PA or a nurse practitioner (NP). The percentage of patients willing to see a PA, an NP, or a junior doctor in training (resident in emergency medicine) for minor, moderate, or severe injury or illness scenarios was 57%, 43%, and 28%, respectively. The percentage of patient respondents expecting to be seen by a "doctor" in the ED was high, 78.5%. Such patients were more willing to see house officers (doctors in postgraduate emergency medicine training) than PAs [17].

Our intent was to assess the willingness of Australian patients to receive medical care by PAs. This research bridges a number of medical issues: workforce, economics, organization, behaviour, ethics, and access to care. Because this work is new and the American study was broad-based, covering many different types of patients and providers, we chose a focused approach and kept a number of variables constant: region, gender, age, setting, scenario, and forced choice strategies. With the patient as the centre of



attention, we posed one question: *Are Australians willing to be treated by a PA over a doctor under certain circumstances?*

Method

The institutional human subjects review board of James Cook University (JCU) approved this study.

A preference survey was administered to women between the ages of 20 and 50 years. Those who claimed they had some knowledge about PAs were excluded from the survey and those naïve were asked to be candidate patients. Females in a three-decade age range were purposely selected since this was the largest segment of respondents in the US study and affords a study population for comparison [17]. Each respondent signed consent for participation. The potential patient read information about two types of providers (doctors and PAs) and then instructed to assume the role of the patient. One of three scenarios of a patient presenting to a general practitioner's office was drawn randomly and handed to the participant/patient. The surrogate patient selected a trade-off of being seen by the general practice doctor after a long wait or the PA after a shorter wait. Outcomes were willingness to be seen by a PA or a doctor. The effects of medical urgency and time delays were assessed. After the decision was made between the PA and a doctor, the patient was then asked if her choices would be different if the time differences were closer to the doctor's.

Location

UniHealth Medical Centre is a community health clinic servicing Townsville, Queensland. The Medical Centre is located next to The Townsville Hospital in the suburb of Douglas. The clinic has been operating since 2002, and manages approximately 30,000 patients each year. Within the facility are consulting rooms used by eight GPs, and a waiting area where the study took place.

Analysis

A power of 90% was selected to detect a 30-percentage-point difference between affirmative and negative response rates with $\alpha = 0.05$. This was based on the response rate of 50% in the Larkin study. In our study, we developed three scenarios. The scenarios arose out of a discussion among an international group of doctors and health services researchers. Two Australian doctors approved the final scenarios.

Power analyses using PASS [18] indicated that 324 total subjects were required to address the primary research

question using a Kruskal-Wallis test of differences among the 3 randomized groups on willingness to be seen. This sample size estimate was based on a Cohen's *d* of .37, with a power requirement of 80% and a study alpha of .05. These estimates were calculated to require a 37.8% difference in willingness to be seen by a PA between the minor and major injury scenarios.

An unrestricted randomization approach was employed. The randomization schedule was generated before the study began and 225 envelopes prepared with one of three scenarios (with replacement envelopes if the patient was ineligible).

Scenarios

Descriptions of the providers were produced for the patient to read prior to being presented the scenario. Each scenario was purely descriptive and left entirely to the respondent to determine what considerations might be relevant to her choices. The research assistant was *not* permitted to answer any questions about the set-up, providers or the study.

Provider Descriptors

Physician Assistant (PA)

A PA is a fully licensed medical practitioner who is trained to provide medical care under the direction and supervision of a doctor. Although the doctor is ultimately responsible for the PA, the physical presence of the doctor is not routinely required in situations where the PA has good experience. PA education consists of two years of combined classroom and clinical instruction in an approved university program. The PA may order some tests, suture wounds and recommend (or write) prescriptions.

General Practitioner (GP)

A GP is a fully licensed medical doctor who has completed medical school and additional training in all aspects of healthcare. A doctor may practice medicine autonomously.

One location was selected: Townsville University Clinic. Three scenarios were field tested and modified after feedback from Australian doctors and research reviewers. The scenarios are as follows:

Scenarios

- A. You stepped out of an automobile into a hole in the pavement and severely injured your ankle. The



ankle is swollen and you are unable to put your weight on your injured foot. The receptionist says the general practitioner can see you in four hours or the PA in one hour. Which one would you choose?

After the patient completes the above question, the patient is asked two additional questions.

Would you be willing to see the PA if you only had to wait:

- a. PA in 30 minutes or 3 hours for the doctor: yes/no
 - b. PA in 2 hours or the doctor in 3 hours: yes/no
- B. You have a 4 cm laceration in your forearm and blood was spurting before you could get a tourniquet on your arm. The receptionist says you can be seen by the general practitioner in four hours or the PA in one hour. Which one would you choose?

After the patient completes the above question, the patient is asked two additional questions.

Would you be willing to see the PA if you only had to wait:

- a. PA in 30 minutes or 3 hours for the doctor: yes/no
 - b. PA in 2 hours or the doctor in 3 hours: yes/no
- C. Your 4-year-old daughter falls off the swing, hits her head on a rock and has a 2 cm gash in the back of her head. The receptionist says you can be seen by the general practitioner in four hours or the PA in one hour. Which one would you choose?

After the patient completes the above question, the patient is asked two additional questions.

Would you be willing to see the PA if you had to wait:

- a. PA in 30 minutes or 3 hours for the doctor: yes/no
- b. PA in 2 hours or the doctor in 3 hours: yes/no

Upon conclusion of the questionnaire, the patient was asked the ethnicity of her grandparents and selected her age from a list of age ranges.

Role of the Funding Source

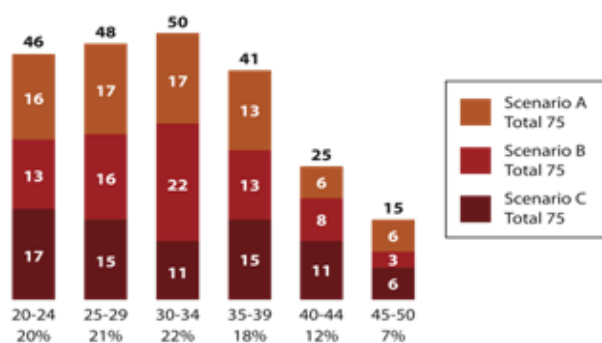
This study was funded by the *National Commission on the Certification of Physician Assistants Foundation*. The funding source had no role in the study design, data collection, or interpretation of the results.

Results

In 2009, 229 adult women in the clinic were invited to participate in this survey as a surrogate patient. No preselecting was used and no patient declined participation: 229 were approached and 229 agreed (100%). Four Americans declared their nationality after the examination was completed and their results excluded from the analysis as likely to have heard about PAs.

All of the participants were between 20 and 50 years of age; two-thirds (63%) were under 35 and one-fifth (19%) between 40-50 years old (**Exhibit 1**).

Exhibit 1: Patients Ages (years) by Scenarios



The vast majority was at least second generation Australians of European extraction based on the ethnicity of their grandparents and four were of indigenous heritage (**Exhibit 2**).

Exhibit 2: Ethnicity of Participant's Grandparents

	Number	Percent
Australian	194	86 %
European	8	4
Great Britain	7	3
New Zealand (not Maori)	6	3
Unknown (or undeclared)	6	3
Asian (Korean, Chinese, Malaysian)	4	1
American = 4 (deleted from analysis)		*
Total	225	100 %



Almost all (95%) resided either in Townsville or Northern Queensland (**Exhibit 3**).

Exhibit 3: Location of Residence (Australia)

	Number	Percent
Ayr	1	0 %
Bowen	4	2
Charters Towers	1	0
Collinsville	2	1
Giru	1	0
Melbourne	1	0
Townsville	214	95
Woodstock	1	0
Total	225	100 %

No differences emerged by scenario or patient age for the time-trade-off selections (**Exhibit 4**).

Exhibit 4: Scenario Results

Main Scenario		Force Choice <i>a</i>		Force Choice <i>b</i>	
Selecting PA		Selecting PA		Selecting PA	
no.	%	no.	%	no.	%
224	99 %	225	100 %	224	99 %

Only one candidate patient chose to be seen by a doctor regardless of the scenarios (1%). Another patient chose to wait for the doctor *only* when the Scenario C wait time for the PA increased to two hours versus the doctor at four hours (Force Choice *b*).

Participants were invited to comment about this set of scenarios or any other aspects of the subject. Five respondents wrote:

1. "Thought the concept was a good idea for rural areas but would still like to see GP for pre existing condition"
2. A JCU medical student (1st year) wasn't sure of concept yet.
3. Another comment was, "Why would you wait, they know what they are doing"
4. "Heard conversation about PAs in US and was very excited about the concept"
5. One said that she would prefer to see her GP as she has pre-existing conditions, but

when put into the injury scenario she replied, "What choice do you have?"

Discussion

It appears that women of childbearing ages in Northern Queensland are willing to be seen by a PA concept model, given three different trauma scenarios, whether it involves herself or her child. Their trade-offs are waiting for a doctor for four hours or being seen by a PA in a shorter period of time (range of 2 hours to 30 minutes). Virtually all who were invited to participate in this survey agreed with no dissent; only two of the 225 patients were willing to wait longer for a doctor. These participation and trade-off results were higher than expected. That 99% would trade off seeing a PA over a doctor regardless of the inconvenience of time opens up a number of questions about how Australians perceive their value of time and willingness to see a PA.

Doctors command a special role and place in all Western societies and in most cultures. This role has largely been on the rise since the middle of the last century and has been bolstered by new technology and advancements in care [19]. Incursions into the doctor role and position have been met with some resistance [20]. Yet the medical access needs of Australians seem to be no different than in other societies: to receive care when they want it. The structural foundation of Australian health care has a core emphasis on primary health care teams but a stereotypical approach has seen little or no change in the formal role of each team member. The team continues to be composed of members defined by their professional position (e.g., doctor, nurse, paramedic, allied health, etc.). There has been little exploration into constructing a team with more flexible staffing that utilizes varying ranges of experience and expertise, and that meets required skills rather than being constrained by a number of predetermined team positions [21]. Our work opens up the possibility that Australians may be receptive to use of team approaches to primary care – specifically using PAs. This work also differs from a study in Pennsylvania where 79% of patients in an urgent care setting fully expected to be seen by a doctor [17]. The different results between the two studies require some discussion: the elapsed time is the most obvious difference and may be explained by this reason alone. We offer that the historical rise of the number of PAs, both in the US and in other countries, suggests the concept is becoming familiar to citizens. The use of caregivers for patients waiting in the Pittsburgh emergency department suggests that this location may prime surrogate patients into presuming they will be seen by a doctor whereas the Queensland community clinic is used for less urgent visits.



Finally, the control of variables may be useful for refining similar studies that involve trade-off.

Limitations

The limitations of this research are due to the reduced confounding variables. To begin with, only women in childbearing age were surveyed. Whether these results are translatable to men, the elderly, or the young is untested. Using minor trauma scenarios was purposeful but Queensland's use of paramedics, Indigenous Health Workers and Ambulance Officers, is widespread and may have conditioned patients to a health workforce that assumes traditional doctor roles in acute care or in doctor scarce settings such as rural health. Another limitation is that a demonstration project using American PAs and the inauguration of a PA programme at the University of Queensland in Brisbane (Southern Queensland) began in early 2009 and was preceded by PAs employed in two Adelaide hospitals in 2008. These two historical factors may have subtly introduced PAs to Northern Queenslanders.

We suggest research comparing PAs and NPs is undertaken to see if these two new health professionals reveal other, untested, patient preferences. As such, our work is considered exploratory and not conclusive. It is purposely narrow in scope and had a large number of variables controlled to reduce confounding effects, as is customary in economic and exploratory research. The inclusion of more variables could produce different results under different circumstances. Similar time trade-offs involving NPs, PAs, and doctors, with a full range of typical patients, non-urgent scenarios, and urban versus rural settings are some of the factors that remain untested. Such undertaking builds on our understanding of human behaviour when faced with choices in health care services.

Conclusion

Willingness to be treated is an important concept to explore in socioeconomic research as it applies to new providers of medical care. In the testing of time trade-off, using empirical data and choice in providers of care, the outcomes revealed that the use of PAs in Australian society might be more welcomed by its citizens than previously thought. The notion that a global PA adoption is underway suggests that Australians may welcome this movement (or at least be receptive to this initiative under certain circumstances) [22]. Additional research in the area of patient preference and trade-offs involving less urgent medical scenarios is recommended.

References

1. Hooker RS, Cawley JF, Asprey DP. Physician Assistant: Policy and Practice. 3rd ed. Philadelphia, Pa: F.A.Davis; 2010.
2. Grumbach K, Hart LG, Mertz E, Coffman J, Palazzo L. Who is caring for the underserved? A comparison of primary care physicians and nonphysician clinicians in California and Washington. *Ann Fam Med.* 2003; 1 (2): 97-104.
3. Staton FS, Bhosle MJ, Camacho FT, Feldman SR, Balkrishnan R. How physician assistants improve access to care for the underserved. *JAAPA.* 2007; 20(6): 32-36.
4. Brooks PM, Ellis N. Health Workforce Innovation Conference. *Med J Aust.* 2006; 184: 105-106.
5. Forde A, O'Conner T. Augmenting the rural health workforce with physician assistants. National Rural Health Conference (10th). Rural Health: The Place to be. Conference Proceedings. http://10thnrhc.ruralhealth.org.au/papers/docs/Forde_Allan_E4.
6. Ludbrook G, Peischl T. Physician Assistants in Perioperative Medicine. In: Australasian Anaesthesia 2009. Ed: Richard Riley. Australian and New Zealand College of Anaesthetists, Melbourne Australia, p111-113.
7. Gorman DF, Brooks PM. On solutions to the shortage of doctors in Australia and New Zealand. *Med J Aust.* 2009; 190 (3): 152-156.
8. Klocko DJ, Chong CK, Jones R, Lewandowski A, Soto-Gomez C. The cost of PA student rotations overseas. *Advance for Physician Assistants.* 2009; 10(17): S4.
9. Bonning M. University of Queensland Medical Society statement on physician assistants. 05 October 2007. <http://uqms.org/content/view/224/>
10. Jolly R. Health Workforce: A Case for Physician Assistants? Canberra, Australia: Parliamentary Library; 2008 March 2008. Report No.: 24.
11. Brooks PM, Robinson L, Ellis N. Options for expanding the health workforce. *Aust Health Rev.* 2008; 32(1): 156-60.
12. Hooker RS. The future of the physician assistant movement. *Med J Aust.* 2010; 192 (3): 116.
13. Dolan P, Gudex C, Kind P, Williams A. The time trade-off method: results from a general



- population study. *Health Econ.* 1998; 5(2): 141-154.
14. Mazur DJ, Merz JF. Older patients' willingness to trade off urologic adverse outcomes for a better chance at five-year survival in the clinical setting of prostate cancer. *J Am Geriatr Soc.* 1995; 43(9): 979-984.
 15. Kane RL (ed). *New Health Practitioners.* 1975. Fogarty International Center Series on the Teaching of Preventative Medicine. Conference proceedings, May 15, 1974. Association of the Teachers of Preventative Medicine. DHEW Publication No. (NIH) 75-875. Bethesda, MD. 156 pages.
 16. Henry LR, Hooker RS. Retention of physician assistants in rural health clinics. *J Rural Health.* 2007; 23(3): 207-14.
 17. Larkin GL, Hooker RS. Patient willingness to be seen by physician assistants, nurse practitioners and residents in the emergency department: Does the presumption of consent have an empirical basis? *Am J Bioeth.* 2010; 10(7).
 18. NCSS PASS Statistical Software, version 2007. NCSS. 329 North 1000 East, Kaysville, Utah 84037. <http://www.ncss.com/pass.html>
 19. Stevens R. *American Medicine and the Public Interest: A History of Specialization.* 2nd ed. Berkeley: University of California Press; 1998.
 20. Scott I. Health care workforce crisis in Australia: too few or too disabled? *Med J Aust.* 2009; 190 (12): 689-692.
 21. Schoen C, Osborn R, Huynh PT, Doty M, Peugh J, Zapert K. On the front lines of care: primary care doctors' office systems, experiences, and views in seven countries. *Health Aff.* 2006; 25(6): w555.
 22. Del Myer CB, Dwyer N. A radical new treatment for the sick health workforce. *Med J Aust.* 2006; 185 (1): 32-34.

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CONFLICTS OF INTEREST

The authors declare that they have no competing interests

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