

This paper is in the following e-collection/theme issue:

**[Telehealth and Telemonitoring](#)**

- [Article](#)
- [Cited by \(0\)](#)

**Original Paper**

## Video Consultation Use by Australian General Practitioners: Video Vignette Study

Moyez Jiwa<sup>1</sup>, MA, MD, FRCP, MRCGP, FRACGP, MMedSci; Xingqiong Meng<sup>2</sup>, Phd, BMed, MAppE

<sup>1</sup>Curtin University, Curtin Health Innovation Research Institute, Curtin University, Perth, Australia

<sup>2</sup>School of Public Health, Curtin University, Perth, Australia

**Corresponding Author:**

Moyez Jiwa, MA, MD, FRCP, MRCGP, FRACGP, MMedSci

Curtin Health Innovation Research Institute

Curtin University

GPO Box U1987

Perth, 6845

Australia

Phone: 61 892661768 ext 1768

Fax: 61 8 92662608

Email: [m.jiwa \[at\] curtin.edu.au](mailto:m.jiwa@curtin.edu.au)

---

### ABSTRACT

**Background:** There is unequal access to health care in Australia, particularly for the one-third of the population living in remote and rural areas. Video consultations delivered via the Internet present an opportunity to provide medical services to those who are underserved, but this is not currently routine practice in Australia. There are advantages and shortcomings to using video consultations for diagnosis, and general practitioners (GPs) have varying opinions regarding their efficacy.

**Objective:** The aim of this Internet-based study was to explore the attitudes of Australian GPs toward video consultation by using a range of patient scenarios presenting different clinical problems.

**Methods:** Overall, 102 GPs were invited to view 6 video vignettes featuring patients presenting with acute and chronic illnesses. For each vignette, they were asked to offer a differential diagnosis and to complete a survey based on the theory of planned behavior documenting their views on the value of a video consultation.

**Results:** A total of 47 GPs participated in the study. The participants were younger than Australian GPs based on national data, and more likely to be working in a larger practice. Most participants (72%-100%) agreed on the differential diagnosis in all video scenarios. Approximately one-third of the study participants were positive about video consultations, one-third were ambivalent, and one-third were against them. In all, 91% opposed conducting a video consultation for the patient with symptoms of an acute myocardial infarction. Inability to examine the patient was most frequently cited as the reason for not conducting a video consultation. Australian GPs who were favorably inclined toward video consultations were more likely to work in larger practices, and were more established GPs, especially in rural areas. The survey results also suggest that the deployment of video technology will need to focus on follow-up consultations.

**Conclusions:** Patients with minor self-limiting illnesses and those with medical emergencies are unlikely to be offered access to a GP by video. The process of establishing video consultations as routine practice will need to be endorsed by senior members of the profession and funding organizations. Video consultation techniques will also need to be taught in medical schools.

**(J Med Internet Res 2013;15(6):e117)**

doi:10.2196/jmir.2638

## KEYWORDS

videoconferencing; general practice; patient appointments; health care

## We recommend

1. [Exploring Social Contextual Correlates of Computer Ownership and Frequency of Use Among Urban, Low-Income, Public Housing Adult Residents](#)

Lorna H McNeill et. al.

2. [Effectiveness of a Web-Based Self-Help Intervention for Symptoms of Depression, Anxiety, and Stress: Randomized Controlled Trial](#)

Annemieke van Straten et. al.

3. [Pediatric Caregiver Attitudes Toward Email Communication: Survey in an Urban Primary Care Setting](#)

Robert Arthur Dudas et. al.

4. [A 12-Week Commercial Web-Based Weight-Loss Program for Overweight and Obese Adults: Randomized Controlled Trial Comparing Basic Versus Enhanced Features](#)

Clare E Collins et. al.

5. [Use of the Internet as a Health Information Resource Among French Young Adults: Results From a Nationally Representative Survey](#)

François Beck et. al.

1. [Participant Profiles According to Recruitment Source in a Large Web-Based Prospective Study: Experience From the Nutrinet-Santé Study](#)

Emmanuelle Kesse-Guyot et. al.

2. [An Internet-Based Intervention to Promote Mental Fitness for Mildly Depressed Adults: Randomized Controlled Trial](#)

Linda Bolier et. al.

3. [Initial and Sustained Participation in an Internet-delivered Long-term Worksite Health Promotion Program on Physical Activity and Nutrition](#)

Suzan JW Robroek et. al.

4. [Efficacy of Standard Versus Enhanced Features in a Web-Based Commercial Weight-Loss Program for Obese Adults, Part 2: Randomized Controlled Trial](#)

Clare E Collins et. al.

5. [Using the Internet for Health-Related Activities: Findings From a National Probability Sample](#)

Nancy L Atkinson et. al.

powered by [TrendMD](#)

## Introduction

Australia is a geographically dispersed country in which one-third of the population lives in rural and remote locations. Inequity in health care is thought to be linked to the cost of medical appointments and to the shortage of medical manpower in rural and remote areas [1,2]. In other sectors, access to services has been facilitated by information technology. For example, there is

growing evidence for the role of information technology to improve the customer experience in the retail and finance industries [3,4].

In theory, access to doctors can also be efficiently facilitated by online video technology [5]. However, video technology requires both practitioners and patients to be willing to consult via the Internet. To date, the deployment of online video technology in Australian primary care is not routine practice. The practice is limited to government-subsidized consultations involving specialist practitioners or to small numbers of privately funded schemes [6,7].

People who consult doctors in general practice are heterogeneous [8]. The reasons for seeking medical advice range from self-limiting conditions of recent onset to chronic and life-limiting problems [8]. The symptoms or problems presented may warrant information, education, reassurance, explanation, examination, prescription, referral, and/or investigations. The consultation provides an opportunity to address the patient's current problems, and also to consider and potentially prevent future problems [9].

In a face-to-face consultation, the doctor can use all 5 senses; however, in an Internet-based video consultation access to sensory information is limited, and the information that is available may be hampered by download speeds and/or the performance of computer hardware. Furthermore, there is no scope to intervene in person if the patient requires immediate resuscitation. Many of these limitations also apply to telephone consultations; yet, in parts of the world telephone consultations in primary care are considered routine and time saving [10,11].

This Internet-based pilot study aimed to explore Australian general practitioners' attitudes to video consultation with a range of patients who may not be known to them previously. The survey tool used in this study was based on the theory of planned behavior (TPB) [12].

## Methods

This study was approved by the Curtin Human Research Ethics Committee (No: RD-61-12).

Participants were recruited from members of the Curtin Health Innovation Research Network (CHIReN), a virtual network of general practitioners (GPs) across Australia who have already consented to be invited to participate in studies with standardized patients. The study took place over approximately 12 weeks. Each participant was remunerated AUS \$50 as recompense for his/her time to participate in the study.

Participants answered questions after viewing video-recorded monologs by actor-patients. Video scenarios were produced and validated by a team of 6 GPs. Six videos were produced, each

featuring an actor-patient presenting a range of clinical problems. Information on medical history, family history, and drug history were offered at the outset of each video. The range of scenarios is consistent with those reported in the GP activity reports [8,13]. Scenarios are described in [Table 1](#). A screenshot from 1 of the videos is shown in [Figure 1](#). The vignettes ranged from a self-limiting minor illness to a life-threatening medical emergency. Participating GPs provided their demographic details and answered questions about their impressions (see [Table 2](#)).



**Figure 1.** Video consultation vignette.

Scenario	Description	Duration
Scenario 1	Scenario 1 description	0:00 - 0:30
Scenario 2	Scenario 2 description	0:30 - 1:00
Scenario 3	Scenario 3 description	1:00 - 1:30
Scenario 4	Scenario 4 description	1:30 - 2:00
Scenario 5	Scenario 5 description	2:00 - 2:30
Scenario 6	Scenario 6 description	2:30 - 3:00
Scenario 7	Scenario 7 description	3:00 - 3:30
Scenario 8	Scenario 8 description	3:30 - 4:00
Scenario 9	Scenario 9 description	4:00 - 4:30
Scenario 10	Scenario 10 description	4:30 - 5:00
Scenario 11	Scenario 11 description	5:00 - 5:30
Scenario 12	Scenario 12 description	5:30 - 6:00
Scenario 13	Scenario 13 description	6:00 - 6:30
Scenario 14	Scenario 14 description	6:30 - 7:00
Scenario 15	Scenario 15 description	7:00 - 7:30
Scenario 16	Scenario 16 description	7:30 - 8:00
Scenario 17	Scenario 17 description	8:00 - 8:30
Scenario 18	Scenario 18 description	8:30 - 9:00
Scenario 19	Scenario 19 description	9:00 - 9:30
Scenario 20	Scenario 20 description	9:30 - 10:00

[\[view this table\]](#)

**Table 1.** Scenarios presented to participants in videos.

Question	Description	Response Options
Q1	Q1 description	Yes, No, Maybe
Q2	Q2 description	Yes, No, Maybe
Q3	Q3 description	Yes, No, Maybe
Q4	Q4 description	Yes, No, Maybe
Q5	Q5 description	Yes, No, Maybe
Q6	Q6 description	Yes, No, Maybe
Q7	Q7 description	Yes, No, Maybe
Q8	Q8 description	Yes, No, Maybe
Q9	Q9 description	Yes, No, Maybe
Q10	Q10 description	Yes, No, Maybe
Q11	Q11 description	Yes, No, Maybe
Q12	Q12 description	Yes, No, Maybe
Q13	Q13 description	Yes, No, Maybe
Q14	Q14 description	Yes, No, Maybe
Q15	Q15 description	Yes, No, Maybe
Q16	Q16 description	Yes, No, Maybe
Q17	Q17 description	Yes, No, Maybe
Q18	Q18 description	Yes, No, Maybe
Q19	Q19 description	Yes, No, Maybe
Q20	Q20 description	Yes, No, Maybe

[\[view this table\]](#)

**Table 2.** Questions for participants after each video.

## Theory of Planned Behavior

This theory postulates that a person's behavior is determined by his/her intention to perform the behavior. This intention is determined by their attitude toward the specific behavior, their subjective norms, and their perceived behavioral control. These 3 domains were explored in this study with reference to scenarios depicting clinical challenges regularly presented to GPs in Australia [13]. The items of the TPB, as measured in this study, were as follows, and each is taken from a guide to the development of such questionnaires [14].

### *Intention*

The respondents were presented with a video scenario and asked whether they would continue with the video consultation. They were also asked to suggest the level of difficulty of making a diagnosis on a scale from 1 to 7, with 1 being not at all difficult and 7 being extremely difficult. The higher the number, the stronger the intention to perform the behavior. For diagnosis difficulty, we calculated the mean of responses for each participant (which may modify the relationship between intention and actual behavior) or the mean for all participants across each scenario (which may reflect differences between scenarios).

### ***Attitude***

Direct measurement of attitude involved the use of bipolar adjectives (ie, pairs of opposites), which are evaluative (eg, good–bad). We calculated the mean of the item scores to give an overall attitude score. The attitude items were also scored for internal consistency (Cronbach alpha=.88).

### ***Subjective Norms***

Direct measurement involves the use of questions referring to the opinions of important people in general. The subjective norm items were scored for internal consistency (Cronbach alpha=.87). We calculated the mean of the item scores to give an overall subjective norm score.

### ***Perceived Behavior Control***

This was achieved by assessing the respondent's self-efficacy and their beliefs about the controllability of the behavior. Self-efficacy was assessed by asking people to report how (1) difficult it was to perform the behavior, and (2) confident they were that they could do it. Controllability was assessed by asking people to report whether (1) performing the behavior was up to them, or (2) factors beyond their control determined their behavior.

### **Scoring**

We checked that the subjective norm items had high internal consistency (self-efficacy: Cronbach alpha=.84; controllability: Cronbach alpha=.72). We calculated the mean of the item scores of the 2 questions related to self-efficacy (questions 9 and 10 in [Table 2](#)), and the mean of the item scores of the controllability-related questions (questions 11 and 12 in [Table 2](#)) to give mean scores for self-efficacy and controllability. The mean scores of the 2 self-efficacy questions and the 2 controllability questions were also calculated to give an overall perceived behavioral control score (Cronbach alpha=.58). Scores for questions 9, 10, and 12 were reversed before calculation, so that high scores consistently reflected a greater level of control over the target behavior.

### **Analysis**

We confirmed that all internal consistency coefficients were acceptable ( $> 0.7$ ); therefore, it was appropriate to include all the items in the composite variables. Using a multiple regression procedure, we entered intention as the dependent variable, and the direct measures of attitude, subjective norm, and perceived behavioral control (self-efficacy and controllability) as the predictor variables.

## Sample Size

A sample of 47 to 62 GPs would give us 80% power to reject the null hypothesis; that is, 50% of GPs would proceed with the consultation in most cases if the true proportion of GPs who choose to proceed was 70%. Such proportions are consistent with previous research [15].

## Data Collection and Analysis

Multivariable logistic regression was used to determine if any identifiable subgroups of GPs, according to demographic criteria, showed significant differences in their scores. *P* values less than .05 were considered statistically significant. Stata version 12.1 (StataCorp LP, College Station, TX, USA) was used to perform the analysis. Multiple regression models were adjusted for the lack of independence between individual participants by estimating the clustered standard errors to account for intragroup correlation (vce option in Stata).

# Results

Forty-seven GPs were recruited from the 102 that CHIReN has on file, which is a response rate of 47%. One general practitioner omitted all demographic questions and was excluded from the analysis, resulting in a total sample of 46. The demography of the sample is reported in [Table 3](#), which also demonstrates a few significant differences between the participants and the known average profile of GPs in Australia.

The GPs offered a differential diagnosis for each video and the level of difficulty in making a diagnosis for that scenario. Data in [Table 4](#) demonstrate that scenario 4 (patient with gall bladder disease) was the most difficult to diagnose, closely followed by scenario 2 (patient with alcoholism) and scenario 6 (patient with an acute cough).

[Table 5](#) summarizes the participant's intention to continue with the consultation. Respondents were least likely to continue with the video consultation with the patient who appeared to be having chest pain, and most likely to continue with the patient seeking a repeat prescription for diabetes and hypertension.

Data relating to the TPB are presented in [Table 6](#). A range of views were expressed with further comments presented subsequently. For the current study, the results show that GPs' self-efficacy and controllability toward online consultations are not in the same direction. When calculating the overall Cronbach alpha for the behavior control score, the 2 controllability scores are in the opposite direction (negative direction) of the 2 self-efficacy scores (positive direction). Therefore, we report self-efficacy and controllability separately. Although the overall behavior score was calculated and reported, it was not used in the regression model as a predictor because of the internal consistency of 4 items.

The relative risk (RR) ratio of difficulty of diagnosis and TPB scores associated with the GPs' intention to continue the consultation within each scenario is presented in [Table 7](#). The ambivalent views and negative views are compared to positive views in multinomial logistic regression. [Table 8](#) presents the results of regression analysis with intention to continue to consult as the dependent variable and scenarios and GP demographic factors as predictive variables. Results in the table are relative risks ratios for the groups who said that "maybe" or they "will not" continue the consultation compared with those who answered yes (RR=1). Results are derived from 1 multinomial logistic regression. Only significant variables, those with  $P < .05$ , were retained in the final model and reported. [Table 9](#) presents the comments to each scenario as recorded by the participants after each scenario.

**Table 3.** Demography of participating general practitioners compared to nationally reported group data (where available).

[\[view this table\]](#)

**Table 4.** Diagnosis and rating for each video (N=46).

[\[view this table\]](#)

**Table 5.** Comments made by GPs regarding intention of continuing with each video consultation (N=46).

[\[view this table\]](#)



[table\]](#)



[\[view this table\]](#)

**Table 6.** Participants' response as per the domains of TPB per scenario (N=46).



[\[view this table\]](#)

**Table 7.** The relative risk (RR) ratio of difficulty of diagnosis and TPB scores associated with GPs' intention to continue the consultation within each scenario (N=46).



[\[view this table\]](#)

**Table 8.** Sociodemographic and scenarios as indicators associated with the intention to continue the consultation online.



[\[view this table\]](#)

**Table 9.** Free-text comments per scenario.

## Discussion

General practitioner participants in this study might conduct a video consultation with patients other than those presenting with what could be an acute life-threatening emergency. Participants formed 3 approximately equal groups: those who would continue with the video consultation, those who were ambivalent, and those who would not. The scenario involving the person with anxiety evoked this typical response. GPs who had qualified from an Australian university were more likely to be equivocal about video consultations. Similar opinions were expressed by those

medical practitioners who had been qualified for longer. However, those who had been in general practice for longer and those who worked in group practices were more likely to favor video consultations.

Compared with the case of the patient presenting with anxiety and depression, GPs were more likely to reject continuing with a video consultation with the patient with alcohol dependence, myocardial infarction, or gall bladder disease. Their objections focused primarily around the inability to physically interact with the patient. Those who had been qualified as a medical practitioner for longer and those who worked longer hours were more likely to express negative views. On the other hand, participants who had been practicing as GPs for longer, GP registrars, those who worked in remote practice, and those from larger group practices were less likely to be negative about video consultations.

Practitioners who were ambivalent about continuing with video consultations expressed the view that it was difficult to diagnose the patient presenting with symptoms of a cough, albeit an upper respiratory tract infection. By contrast, they had positive views about managing patients online for all but the chest pain scenario. They were also concerned about the attitude of significant others, such as patients, colleagues, and funders, about conducting video consultations particularly in the case of the patient with anxiety and depression. With regard to the low consistency between self-efficacy and controllability, we postulated that GPs did not feel they were able to conduct video consultations even if they wanted to because such consultations are not subsidized by government funding. However, they felt confident about their ability to conduct video consultations.

GPs are unlikely to offer video consultations for patients with a minor self-limiting illness of recent onset. The reticence could be ascribed to the perceived need for a physical examination. The importance of clinical examination to establish a diagnosis for acute cough has been emphasized in previous literature [19]. However, a recent review suggests that physical signs, if present, have poor predictive value to detect infections that may benefit from antibiotics [20]. It is also highly unlikely that practitioners would consider video consultations for patients who have a life-threatening medical emergency. This may stem from the perception of an increased risk of failing to make an appropriate diagnosis in this context and the need for immediate resuscitation of a patient with cardiac chest pain [21,22]. Consultations for patients with chronic mental health issues may also be hampered unless there are clear indications that such consultations are approved by colleagues and funding agencies.

## **Limitations**

The practitioners who participated in this study were generally younger than most Australian GPs. They were also more likely to be registrars and those working in a larger practice than average.

Although the geographical distribution included a representative sample of practitioners from rural and remote areas, there were fewer from some states in Australia. We also acknowledge that the doctors had no opportunity to ask questions or seek clarification from the actor-patients. This was a significant issue, although it would have been difficult within the limitations of technology and the resources available to allow for such interactions in circumstances in which practitioners across Australia, living in different time zones, wished to participate in their own time and actors were only funded to perform a single vignette. Experience from previous studies with live consultations between actors and practitioner were that more limited numbers of practitioners were able and willing to participate. This introduces bias and less generalizable results [23]. Secondly, we did not interview the practitioners to explore their perspective on the consultations. Our comments are, therefore, limited to their responses to a questionnaire. In these circumstances, we can only draw limited conclusions that domains of the theory of learned behavior offer a recognized theoretical grounding to frame the conclusions. The free-text comments also provide further information on the impressions of the practitioners.

## **Strengths**

The greatest strength of this study was the use of Internet-based video vignettes to gauge GP opinion. Video vignettes have significant advantages over other data collection methods, in particular, the advantage of realism, or something closely approximating it [23-25]. Video vignettes can present patient information to clinicians in a way that closely resembles their usual consultations. More understanding is generated in this way than by surveys on usual practice. In the context of this study, video consultations are not yet routine practice; therefore, it was important to present the practitioners with examples of scenarios. Video scenarios can simulate clinicians' usual working environments and generate a range of typical responses from them in a way that questions asked in the absence of an example scenario or in relation to a text-based scenario cannot. Data collected are likely to be valid. Such simulations could also be used to introduce video consultations to students at medical schools.

## **Conclusions**

Australian GPs may adopt video consultations in their practice, but this is likely to be in larger practices with more established GPs, especially in rural areas. It is also likely that access to video consultations will need to focus on follow-up consultations, where the purpose of the consultation is not primarily to establish a diagnosis. Patients with minor self-limiting illnesses and those with medical emergencies are unlikely to be offered access to a GP by video. Medical practitioners appear confident about their ability to conduct video consultations; however, the process of establishing video consultations as routine practice will need to be endorsed by patients, members of the profession, and funding organizations. Video consultation techniques will also need to be

taught in medical schools. Future research on this topic could follow a similar outline with vignettes, but include more interactive video consultations between practitioners and patients.

---

## **Acknowledgments**

We would like to thank Dr Allison Rieck, Dr Shoreh Razmi, and Ms Jo Higgins for support in administering the survey. We also thank Dr Mike Civil, Dr Shohreh Razmi, Dr Marthe Smith, and Dr Devesh Oberoi for assistance in developing and administering the scenarios and Tammy McCausland for copyediting the final submission.

---

## **Conflicts of Interest**

None declared.

---

## **Multimedia Appendix 1**

Video vignette alcohol dependence.

[\[MOV File, 11MB\]](#)

---

## **Multimedia Appendix 2**

Video vignette sore throat and cough.

[\[MOV File, 11MB\]](#)

---

## **Multimedia Appendix 3**

Video vignette diabetes.

[\[MOV File, 6MB\]](#)

---

## **Multimedia Appendix 4**

Video vignette chest pain.

[\[MOV File, 8MB\]](#)

---

## Multimedia Appendix 5

Video vignette anxiety.

[\[MOV File, 11MB\]](#)

---

## Multimedia Appendix 6




Video vignette gall bladder symptoms.

[\[MOV File, 12MB\]](#)

---

## References

1. Bourke L, Humphreys JS, Wakerman J, Taylor J. Understanding rural and remote health: a framework for analysis in Australia. *Health Place* 2012 May;18(3):496-503. [\[CrossRef\]](#) [\[Medline\]](#)
2. Young AF, Dobson AJ, Byles JE. Determinants of general practitioner use among women in Australia. *Soc Sci Med* 2001 Dec;53(12):1641-1651. [\[Medline\]](#)
3. Grewal D, Ailawadi KL, Gauri D, Hall K, Kopalle P, Robertson JR. Innovations in retail pricing and promotions. *Journal of Retailing* 2011 Jul;87:S43-S52. [\[CrossRef\]](#)
4. von Hippel EA, Oliveira P. Users as service innovators: the case of banking services. *SSRN Journal* 2011:806-818. [\[CrossRef\]](#)
5. Moffatt JJ, Eley DS. The reported benefits of telehealth for rural Australians. *Aust Health Rev* 2010 Aug;34(3):276-281. [\[CrossRef\]](#) [\[Medline\]](#)
6. Australian Government Department of Human Services: Medicare. 2012. Telehealth [🔗](#)  
URL: <http://www.medicareaustralia.gov.au/provider/incentives/telehealth/index.jsp>  
[accessed 2013-05-23] [\[WebCite Cache\]](#)
7. GP2U. 2012. Expert doctors available when you need them [🔗](#) URL: <https://gp2u.com.au/>  
[accessed 2013-03-21] [\[WebCite Cache\]](#)
8. Britt H, Miller GC, Charles J, Henderson J, Bayram C, Pan Y, et al. *General Practice Activity in Australia*. Canberra, Australia: AIHW; 2008.
9. Deveugele M, Derese A, De Bacquer D, van den Brink-Muinen A, Bensing J, De Maeseneer J. Consultation in general practice: a standard operating procedure? *Patient Educ Couns* 2004 Aug;54(2):227-233. [\[CrossRef\]](#) [\[Medline\]](#)
10. Jiwa M, Mathers N, Campbell M. The effect of GP telephone triage on numbers seeking same-day appointments. *Br J Gen Pract* 2002 May;52(478):390-391 [\[FREE Full text\]](#) [\[Medline\]](#)

11. Alexandra D, Sá M, Navarro P, Santos S, Bernandes AC. P-547“Hello?”: telephone consultation in general practice – a Portuguese setting. In: Swiss Medical Weekly Supplementum. 2009 Presented at: 15th Wonca Europe Conference; September 16-19, 2009; Basel, Switzerland p. 201-202  URL: <http://www.smw.ch/docs/PdfContent/smw-12931.pdf> [WebCite Cache]
12. Ajzen I, Madden TJ. Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control. Journal of Experimental Social Psychology 1986 Sep;22(5):453-474. [CrossRef]
13. Britt H, Miller GC, Charles J, Henderson J, Bayram C, Pan Y, et al. General Practice Activity in Australia. Canberra, Australia: AIHW; 2009.
14. Francis JJ, Eccles MP, Johnston M, Walker A, Grimshaw J, Foy R, et al. Constructing Questionnaires Based on the Theory of Planned Behaviour: A Manual for Health Services Researchers. Newcastle Upon Tyne, UK: Centre for Health Services Research University of Newcastle; 2004 May.  URL: [http://pages.bangor.ac.uk/~pes004/exercise\\_psych/downloads/tpb\\_manual.pdf](http://pages.bangor.ac.uk/~pes004/exercise_psych/downloads/tpb_manual.pdf) [accessed 2012-03-26] [WebCite Cache]
15. Hanna L, May C, Fairhurst K. The place of information and communication technology-mediated consultations in primary care: GPs' perspectives. Fam Pract 2012 Jun;29(3):361-366. [CrossRef] [Medline]
16. AIHW. Medical Workforce. Canberra, Australia: Australian Institute of Health and Welfare; 2011:69.
17. GPET Annual Report to 30 June 2012. Canberra, Australia: General Practice Education and Training Limited; 2012.  URL: <http://agpt.com.au/PoliciesPublications/AnnualReport/> [accessed 2013-03-21] [WebCite Cache]
18. Primary Health Care Research & Information Service (PHC RIS). 2013. Fast Facts: GP numbers in Australia, 1999-2000 to 2010-11  URL: <http://www.phcris.org.au/fastfacts/fact.php?id=6775> [accessed 2013-03-22] [WebCite Cache]
19. Cals JW, Francis NA. Acute cough in adults. BMJ 2010 Feb;340:c574. [CrossRef] [Medline]
20. Aalbers J, O'Brien KK, Chan WS, Falk GA, Teljeur C, Dimitrov BD, et al. Predicting streptococcal pharyngitis in adults in primary care: a systematic review of the diagnostic accuracy of symptoms and signs and validation of the Centor score. BMC Med 2011;9:67 [FREE Full text] [CrossRef] [Medline]
21. Stevens RJ, Lasserson D. In primary care, when is chest pain due to coronary artery disease? CMAJ 2010 Sep 7;182(12):1281-1282 [FREE Full text] [CrossRef] [Medline]
22. National Heart Foundation of Australia, The Cardiac Society of Australia and New Zealand. Guidelines for the management of acute coronary syndromes 2006: acute management of chest pain. MJA Suppl 2006 Apr 17;184(8):S11-S12 [FREE Full text] [WebCite Cache]

23. Jiwa M, McKinley RK, Spilsbury K, Arnet H, Smith M. Deploying a clinical innovation in the context of actor-patient consultations in general practice: a prelude to a formal clinical trial. BMC Med Res Methodol 2009;9:54 [[FREE Full text](#)] [[CrossRef](#)] [[Medline](#)]
24. Hughes R. Considering the vignette technique and its application to a study of drug injecting and HIV risk and safer behaviour. Social Health & Illness 1998 May;20(3):381-400. [[CrossRef](#)]
25. Hawley C, Adams A, Galbraith N. Video Vignette Study of Attitudes and Behaviour of Health Professionals in Consultations. Road Safety Research Report No. 91 Sub-report. London: Department of Transport; 2010:5.

---

## Abbreviations

**CHIReN:** Curtin Health Innovation Research Network  
**GP:** general practitioner  
**RR:** relative risk  
**TPB:** theory of planned behavior

---

*Edited by G Eysenbach; submitted 28.03.13; peer-reviewed by B McKinstry, N Ozcarar; comments to author 21.04.13; revised version received 22.04.13; accepted 23.04.13; published 19.06.13*

Please cite as:

Jiwa M, Meng X

Video Consultation Use by Australian General Practitioners:  
Video Vignette Study

J Med Internet Res 2013;15(6):e117

URL: <http://www.jmir.org/2013/6/e117/>

doi: [10.2196/jmir.2638](https://doi.org/10.2196/jmir.2638)

PMID: [23782753](https://pubmed.ncbi.nlm.nih.gov/23782753/)

Export Metadata:

[END](#), compatible with Endnote

[BibTeX](#), compatible with BibDesk, LaTeX

[RIS](#), compatible with RefMan, Procite, Endnote, RefWorks

[Add this article to your Mendeley library](#)

[Add this article to your CiteULike library](#)

---

## Copyright

©Moyez Jiwa, Xingqiong Meng. Originally published in the Journal of Medical Internet Research (<http://www.jmir.org>), 19.06.2013.

This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/2.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work, first published in the Journal of Medical Internet Research, is properly cited. The complete bibliographic information, a link to the original publication on <http://www.jmir.org/>, as well as this copyright and license information must be included.