

**TITLE: Telehealth Home Monitoring for Adults with Chronic Renal Insufficiency: Clinical and Cost-Effectiveness**

**DATE:** 13 January 2009

**RESEARCH QUESTIONS:**

1. What is the clinical effectiveness of telehealth home monitoring for adults with chronic renal insufficiency?
2. What is the cost-effectiveness of telehealth home monitoring for adults with chronic renal insufficiency?

**METHODS:**

A limited literature search was conducted on key health technology assessment resources, including OVID MedLine, the Cochrane Library (Issue 4, 2008), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI, EuroScan, international health technology agencies, and a focused Internet search. Results include articles published between 2004 and January 2009, and are limited to English language publications only. No filters were applied to limit the retrieval by study type. Internet links are provided, where available.

**RESULTS:**

HTIS reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by economic evaluations, randomized controlled trials, controlled clinical trials, observational studies, and evidence-based guidelines.

Two observational studies assessing the use of telehealth home monitoring for patients undergoing peritoneal dialysis were identified from the literature search. No relevant health technology assessments, systematic reviews, economic evaluations, randomized controlled trials, or controlled trials were identified. Additional articles of interest are located in the appendix.

Disclaimer: The Health Technology Inquiry Service (HTIS) is an information service for those involved in planning and providing health care in Canada. HTIS responses are based on a limited literature search and are not comprehensive, systematic reviews. The intent is to provide a list of sources of the best evidence on the topic that CADTH could identify using all reasonable efforts within the time allowed. HTIS responses should be considered along with other types of information and health care considerations. The information included in this response is not intended to replace professional medical advice, nor should it be construed as a recommendation for or against the use of a particular health technology. Readers are also cautioned that a lack of good quality evidence does not necessarily mean a lack of effectiveness particularly in the case of new and emerging health technologies, for which little information can be found, but which may in future prove to be effective. While CADTH has taken care in the preparation of the report to ensure that its contents are accurate, complete and up to date, CADTH does not make any guarantee to that effect. CADTH is not liable for any loss or damages resulting from use of the information in the report.

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## **Health technology assessments**

No literature identified

## **Systematic reviews and meta-analyses**

No literature identified

## **Economic analyses and cost information**

No literature identified

## **Randomized controlled trials**

No literature identified

## **Controlled clinical trials**

No literature identified

## **Observational studies**

1. Gallar P, Vigil A, Rodriguez I, Ortega O, Gutierrez M, Hurtado J, et al. Two-year experience with telemedicine in the follow-up of patients in home peritoneal dialysis. *J Telemed Telecare* 2007;13(6):288-92. [PubMed: PM17785025](#)
2. Nakamoto H, Nishida E, Ryuzaki M, Sone M, Yoshimoto M, Itagaki K. Blood pressure monitoring by cellular telephone in patients on continuous ambulatory peritoneal dialysis. *Adv Perit Dial* 2004;20:105-10. [PubMed: PM15384807](#)

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## APPENDIX – FURTHER INFORMATION:

### Health technology assessments

3. Tran K, Polisen J, Coyle D, Coyle K, Kluge E-H W, Cimon K, et al. *Home telehealth for chronic disease management* [Technology report number 113]. Ottawa: Canadian Agency for Drugs and Technologies in Health (CADTH); 2008. Available: <http://www.cadth.ca/index.php/en/hta/reports-publications/search/publication/865> (accessed 2009 Jan 12).
4. Deshpande, A., Khoja S, McKibbin A, Jadad AR. *Real-time (synchronous) telehealth in primary care: systematic review of systematic reviews* [Technology report no 100]. Ottawa: Canadian Agency for Drugs and Technologies in Health (CADTH); 2008. Available: <http://www.cadth.ca/index.php/en/hta/reports-publications/search/publication/788> (accessed 2009 Jan 12).
5. Deshpande, A., Khoja S, McKibbin A, Jadad AR. *Overview of assessments of real-time (synchronous) and asynchronous telehealth* [Technology overview number 38]. Ottawa: Canadian Agency for Drugs and Technologies in Health (CADTH); 2008. Available: <http://www.cadth.ca/index.php/en/hta/reports-publications/search/publication/791> (accessed 2009 Jan 12).

### Systematic reviews

6. Bensink M, Hailey D, Wootton R. A systematic review of successes and failures in home telehealth: preliminary results. *J Telemed Telecare* 2006;12(Suppl 3):8-16. Available: [http://jtt.rsmjournals.com/cgi/reprint/12/suppl\\_3/8.pdf](http://jtt.rsmjournals.com/cgi/reprint/12/suppl_3/8.pdf) (accessed 2009 Jan 12).
7. Hailey D, Ohinmaa A, Roine R. Study quality and evidence of benefit in recent assessments of telemedicine. *J Telemed Telecare* 2004;10(6):318-24. [PubMed: PM15603628](#)

### Economic analyses and cost information

8. Noel HC, Vogel DC, Erdos JJ, Cornwall D, Levin F. Home telehealth reduces healthcare costs. *Telemed J E Health* 2004;10(2):170-83. [PubMed: PM15319047](#)

### Review articles

9. Nakamoto H. Telemedicine system for patients on continuous ambulatory peritoneal dialysis. *Perit Dial Int* 2007;27 (Suppl 2):S21-6. [PubMed: PM17556306](#)
10. Jennett PA, Scott RE, Affleck HL, Hailey D, Ohinmaa A, Anderson C, et al. Policy implications associated with the socioeconomic and health system impact of telehealth: a case study from Canada. *Telemed J E Health* 2004;10(1):77-83. [PubMed: PM15104919](#)

## Additional references

11. Seng LF, Foo M, Kanagalingam D, Lim R, Bahadin J, Leong TK, et al. Enhancing patient care through telecare, telemedicine, and personalised patient education in Singapore health services. *Synthesis J* 2007;(Sect 5):93-102. Available: [http://www.itsc.org.sg/pdf/synthesis07/Five\\_PatientCare.pdf](http://www.itsc.org.sg/pdf/synthesis07/Five_PatientCare.pdf) (accessed 2009 Jan 12).