



**TITLE: Telephone Triage Services: Clinical Evidence, Patient Safety, and Guidelines**

**DATE:** 10 September 2010

**RESEARCH QUESTIONS:**

1. What is the clinical evidence to indicate the disease areas that can benefit from the use of telephone triage?
2. What is the evidence regarding the clinical impact of telephone triage on patient safety outcomes?
3. What are the evidence-based guidelines to indicate the types of services that should be offered by telephone triage?

**METHODS:**

A limited literature search was conducted on key health technology assessment resources, including PubMed, EBSCOhost CINAHL, the Cochrane Library (Issue 9, 2010), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI (Health Devices Gold), EuroScan, international health technology agencies, and a focused Internet search. The search was limited to English language articles published between January 1, 2005 and September 2, 2010. No filters were applied to limit the retrieval by study type. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

**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

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first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines.

**OVERALL SUMMARY OF FINDINGS:**

The different areas of telephone triage presented in the included studies and guidelines are summarized in Table 1. One guideline<sup>10</sup> indicated that telephone triage was not acceptable for the evaluation or diagnosis of community-acquired pneumonia.

**Table 1: Telephone Triage Service Areas**

Symptoms and disease areas of callers	Number of studies
Disease areas	
Asthma	1 RCT <sup>1</sup>
Psychological distress – cancer patients	1 NRS <sup>3</sup>
Abdominal pain	1 NRS <sup>5</sup>
Skin problems	1 NRS <sup>5</sup>
Chest pain or discomfort	1 NRS <sup>5</sup>
Head injury	1 guideline <sup>7</sup>
Urinary tract infection	1 guideline <sup>11</sup>
Pregnancy-related issues	1 NRS <sup>5</sup>
Breastfeeding	1 guideline <sup>8</sup>
Emergency contraception	1 guideline <sup>9</sup>

NRS = non-randomized study; RCT = randomized controlled trial

Safety outcomes related to telephone triage were measured in three studies.<sup>1,4,6</sup> One systematic review<sup>1</sup> noted no difference in observed deaths between patients using nurse teletriage and those seeking standard care. No deaths were reported within one week of teletriage through a pediatric call centre.<sup>6</sup> Approximately 75% of families in this study complied with the nurse’s triage recommendations.<sup>6</sup> For patients presenting with chest or abdominal pain, hospitalization rates were significantly higher for telephone triage than for patients who visited a doctor’s office, but lower than those who presented to the emergency department.<sup>4</sup> The included studies do not show an increase in patient harm with telephone triage; however, a more rigorous evaluation of safety is required.<sup>1</sup>

**REFERENCES SUMMARIZED:**

**Health technology assessments**

No literature identified.

**Systematic reviews and meta-analyses**

1. Bunn F, Byrne G, Kendall S. The effects of telephone consultation and triage on healthcare use and patient satisfaction: a systematic review. *Br J Gen Pract* [Internet]. 2005 Dec [cited 2010 Sep 10];55(521):956-61. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1570504> PubMed: [PM16378566](#)

**Randomized controlled trials**

2. Gruffydd-Jones K, Hollinghurst S, Ward S, Taylor G. Targeted routine asthma care in general practice using telephone triage. *The British journal of general practice : the journal of the Royal College of General Practitioners* [Internet]. 2005 [cited 2010 Sep 9];55(521):918-23. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/pmid/16378560/?tool=pubmed> PubMed: [PM16378560](#)

**Non-randomized studies**

3. Hawkes AL, Hughes KL, Hutchison SD, Chambers SK. Feasibility of brief psychological distress screening by a community-based telephone helpline for cancer patients and carers. *BMC Cancer* [Internet]. 2010 [cited 2010 Sep 9];10:14. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2826295> PubMed: [PM20067645](#)
4. North F, Varkey P. How serious are the symptoms of callers to a telephone triage call centre? *J Telemed Telecare*. 2010 Aug 16. PubMed: [PM20713512](#)
5. North F, Varkey P. A retrospective study of adult telephone triage calls in a US call centre. *J Telemed Telecare*. 2009;15(4):165-70. PubMed: [PM19471026](#)
6. Kempe A, Bunik M, Ellis J, Magid D, Hegarty T, Dickinson LM, et al. How safe is triage by an after-hours telephone call center? *Pediatrics* [Internet]. 2006 Aug [2010 Sep 9];118(2):457-63. Available from : <http://pediatrics.aappublications.org/cgi/content/full/118/2/457> PubMed: [PM16882795](#)

**Guidelines and recommendations**

7. Early management of patients with a head injury: a national clinical guideline [Internet]. Edinburgh (UK): Scottish Intercollegiate Guidelines Network (SIGN); 2009 May. [cited 2010 Sep 9]. Available from: <http://www.sign.ac.uk/pdf/sign110.pdf>  
*Note: see 3.1 Telephone Advice Services*
8. National Guideline Clearinghouse [Internet]. Rockville (MD): National Guideline Clearinghouse; c2009 -. Breastfeeding friendly physician's office, part 1: optimizing care

for infants and children; 2006 [cited 2010 Sep 10]. Available from:

<http://www.guideline.gov/content.aspx?id=11231&search=%22telephone+triage%22>

*Note:* see Major Recommendation 10

9. National Guideline Clearinghouse [Internet]. Rockville (MD): National Guideline Clearinghouse; c2009 -. Emergency contraception; 2005 Oct [cited 2010 Sep 10]. Available from:  
<http://www.guideline.gov/content.aspx?id=8143&search=%22telephone+triage%22>  
*Note:* see Typical Use of Emergency Contraception
10. National Guideline Clearinghouse [Internet]. Rockville (MD): National Guideline Clearinghouse; c2009 -. Management of community-acquired pneumonia in the home: an American College of Chest Physicians clinical position statement; 2005 May [cited 2010 Sep 10]. Available from:  
<http://www.guideline.gov/content.aspx?id=7325&search=%22telephone+triage%22>  
*Note:* see Initial Patient Evaluation and Diagnosis in the Home Environment
11. National Guideline Clearinghouse [Internet]. Rockville (MD): National Guideline Clearinghouse; c2009 -. Urinary tract infection; 2005 May [cited 2010 Sep 10]. Available from: <http://www.guideline.gov/content.aspx?id=7407&search=%22telephone+triage%22>  
*Note:* see Diagnosis

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## **APPENDIX – FURTHER INFORMATION:**

### **Protocols**

12. Policy for chemotherapy telephone triage in adults [Internet]. Version 1.3. East Yorkshire (UK): NHS Humber and Yorkshire Coast Cancer Network; 2010 Jun. [cited 2010 Sep 9]. Available from:  
<http://www.hyccn.nhs.uk/Downloads/HYCCN%20Policy%20for%20Chemotherapy%20Telephone%20Triage%20in%20adults%20v1.3%202009.pdf>
13. Oncology and haematology: chemotherapy telephone triage guidelines [Internet]. East Yorkshire (UK): NHS Humber and Yorkshire Coast Cancer Network; 2008 Jan. [cited 2010 Sep 9]. Available from:  
<http://www.erypct.nhs.uk/upload/HERHIS/East%20Riding%20PCTs/Document%20Store/Policies/Chemotherapy%20Telephone%20Triage%20Guidelines.pdf>

### **Review articles**

14. 2009 Annual Report of the Office of the Auditor General of Ontario [Internet]. Toronto (ON): Ministry of Health and Long-Term Care; 2009. Chapter 3: section 3.13: teletriage health services. [cited 2010 Sep 10]. Available from:  
[http://www.auditor.on.ca/en/reports\\_en/en09/313en09.pdf](http://www.auditor.on.ca/en/reports_en/en09/313en09.pdf)
15. St George I, Cullen M, Gardiner L, Karabatsos G. Universal telenursing triage in Australia and New Zealand: a new primary health service. Aust Fam Physician [Internet]. 2008 Jun [cited 2010 Sep 10];37(6):476-9. Available from:  
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### **Additional references**

16. Stacey D, Bakker D, Green E, Zanchetta M, Conlon M. Ambulatory oncology nursing telephone services: a provincial survey [Internet]. Vancouver (BC): Canadian Association of Nurses in Oncology (CANO/ACIO); 2007. [cited 2010 Sep 10]. Available from:  
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[http://www.von.ca/doc/CJNL\\_TelephoneNursing\\_Sharon%20Goodwin.pdf](http://www.von.ca/doc/CJNL_TelephoneNursing_Sharon%20Goodwin.pdf)
18. Nurse partners pediatric telephone triage program [Internet]. Boston (MA): Massachusetts General Hospital; 2010. [cited 2010 Sep 9]. Available from:  
[http://www.mgh.harvard.edu/pcs/nursing/Nurse\\_Partners\\_Pediatric\\_Telephone\\_Triage\\_Program.aspx](http://www.mgh.harvard.edu/pcs/nursing/Nurse_Partners_Pediatric_Telephone_Triage_Program.aspx)