

## Telephone Triage Clinical Content – Important Aspects

### 1. Comprehensive Clinical Content

- a. The Clinical Content should be comprehensive and cover 99+% of symptom calls.
- b. The 2020 Schmitt-Thompson Clinical Content (STCC) contains 703 After Hours telephone triage and advice guidelines. There are 340 pediatric and 363 adult guidelines. Approximately 6-8 new guidelines are added each year.



### 2. Dispositions

- a. Disposition headings should be succinct and easy to understand.
- b. A statement clarifying the disposition should be provided in the targeted care advice. This improves caller compliance with urgent referrals. Studies by Dr. Kempe have shown that the most common cause of non-compliance is that the caller misinterprets what action the triage nurse tells them to take.<sup>1</sup>
- c. The STCC provides scripts written in plain English for each disposition level. These help the triage nurse clarify exactly what she wants the caller to do.



### 3. Research

- a. Clinical Content should be backed by research. Schmitt and Thompson content offers the advantage of being backed by research and statistical analysis.
- b. Dr. Schmitt is a pediatrician and Professor of Pediatrics; he is the author of over 100 articles and chapters on pediatric health care including the well-known book Your Child's Health.<sup>2 3</sup> He is the author of the telephone triage book Pediatric Telephone Protocols – Office Version. Dr. Schmitt's pediatric telephone triage Clinical Content has



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<sup>1</sup> Kempe A, Luberti AA, Hertz AR, Sherman HB, Amin D, Dempsey C, Chandramouli V, MacKenzie T, Hegarty TW. Delivery of pediatric after-hours care by call centers: a multicenter study of parental perceptions and compliance. *Pediatrics*. 2001 Dec;108(6):E111.

<sup>2</sup> Schmitt BD. Fever phobia: misconceptions of parents about fevers. *Am J Dis Child*. 1980 Feb;134(2):176-81.

<sup>3</sup> Schmitt BD. *Your Child's Health: The Parents' Guide to Symptoms, Emergencies, Common Illnesses, Behavior, and School Problems*. Bantam Books. 3<sup>rd</sup> Edition. 2005.

- been the subject of 20 years of research, including nurse and primary care physician concordance studies.<sup>4 5 6 7 8 9</sup>
- c. Dr. Thompson is board certified in internal medicine and emergency medicine. He is the author of the telephone triage book [Adult Telephone Protocols – Office Version](#); this book received a 4-star review from Doody Enterprises.<sup>10</sup> Dr. Thompson has worked with Dr. Schmitt and leveraged the 20 years of Schmitt research in developing the adult triage guidelines. Furthermore, Dr. Thompson has performed chief complaint analytics and other research, examining small and very large data sets from the Centers for Disease Control and Prevention (CDC), emergency departments, medical call centers, telemedicine, and urgent care centers.<sup>11 12 13 14 15 16 17 18 19 20 21 22 23</sup>

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- 4** Belman S, Chandramouli V, Schmitt BD, Poole SR, Hegarty T, Kempe A. An assessment of pediatric after-hours telephone care: a 1-year experience. *Arch Pediatr Adolesc Med.* 2005 Feb;159(2):145-9.
- 5** Melzer SM, Poole SR. Computerized pediatric telephone triage and advice programs at children's hospitals: operating and financial characteristics. *Arch Pediatr Adolesc Med.* 1999 Aug;153(8):858-63.
- 6** Kempe A, Dempsey C, Whitefield J, Bothner J, MacKenzie T, Poole S. Appropriateness of urgent referrals by nurses at a hospital-based pediatric call center. *Arch Pediatr Adolesc Med.* 2000 Apr;154(4):355-60.
- 7** Villarreal SF, Berman S, Groothuis JR, Strange V, Schmitt BD. Telephone encounters in a university pediatric group practice. A 2-year analysis of after-hour calls. *Clin Pediatr (Phila).* 1984 Aug;23(8):456-8.
- 8** Kempe A, Bunik M, Ellis J, Magid D, Hegarty T, Dickinson LM, Steiner JF. How safe is triage by an after-hours telephone call center? *Pediatrics.* 2006 Aug;118(2):457-63.
- 9** Bunik M, Glazner JE, Chandramouli V, Emsermann CB, Hegarty T, Kempe A. Pediatric telephone call centers: how do they affect health care use and costs? *Pediatrics.* 2007 Feb;119(2):e305-13.
- 10** Ling S (Reviewer). <http://www.doodyenterprises.com>. 2005.
- 11** Thompson DA. Analysis of 150,000 emergency department visits – diagnostic frequency and disposition rates. Unpublished data. 2002.
- 12** Thompson DA. Analysis of 2 million medical encounters across the continuum of care. Diagnosis frequency for four different sources of care: urgent care center, emergency department, inpatient – hospitalist, and subacute nursing facility. *Health Navigator, LLC.* 2015.
- 13** Thompson DA. A survey of 12 primary care office practices: assessment of resource availability (diagnostic testing, medications, and procedures). Unpublished data. 2003.
- 14** Thompson DA, Eitel D. Coded Chief Complaints – Automated Analysis of Free-Text Complaints. Fernandes CMB, Pines JM, Amsterdam J, Davidson SJ. *Acad Emerg Med.* 2006;13:774-782.
- 15** Thompson DA, Courtney DM, Malik S, Schmidt MJ, Weston V. Use of Natural Language Processing to Identify 414 Different Chief Complaints in Adult Emergency Department Patients. Oral Presentation. Society for Academic Emergency Medicine (SAEM) Annual Meeting. 2018.
- 16** Thompson DA. An analysis of 200,000 patient calls from 4 medical call centers. Unpublished data. 2003.
- 17** Thompson DA, Bolster A. Medical Call Center Nurse Inter-Rater Agreement in Determining “Who should the Telephone Triage Nurse Speak to Next”. Call Prioritization Index (Version 1). Unpublished data and abstract. 2008.
- 18** Thompson DA, Whittemore L. Medical Call Center Nurse Inter-Rater Agreement in Determining “Who should the Telephone Triage Nurse Speak to Next”. Call Prioritization Index (Version 2). Unpublished data and abstract. 2009.
- 19** Thompson DA. Medical Call Center Benchmarking Report: 2004 to 2016. An analysis of 6.5 million triage calls from 10 medical call centers. Limited distribution to participating call centers. 2017.
- 20** Thompson DA. Analysis of outcomes and testing requirements using the CDC Reason for Visit classification from the 2002 National Hospital Ambulatory Medical Care Survey (NHAMCS). Unpublished data. 2004.
- 21** Thompson DA. [Technosoft](#) Data Science Team. Coding and analysis of CDC's National Hospital Ambulatory Medical Care Survey 2010 Data Set (357 hospitals, 35 thousand patient encounters); data science team investigation of age, gender, Coded Chief Complaint, vital signs, diagnoses, and disposition. Unpublished data and abstract. [Health Navigator, LLC.](#) 2014.
- 22** Thompson DA. Data abstraction, coding, and analysis of 32,828 emergency department, hospitalist, and urgent care center encounters between April 2016 and May 2017. Investigation of beginning (age, gender, Coded Chief Complaint), middle (clinical documentation), and end (diagnosis, disposition); comparison to decision support tools. [Health Navigator, LLC.](#) 2017.
- 23** Thompson DA. Data abstraction, coding, and analysis of 24,635 telemedicine encounters between June 2017 and Dec 2017. Investigation of beginning (age, gender, Coded Chief Complaint), middle (clinical documentation), and end (diagnosis, disposition) of medical encounters; comparison to decision support tools. [Health Navigator, LLC.](#) 2017.

- Dr. Thompson has also published research in the areas of patient satisfaction and work flow.<sup>24 25 26 27</sup>
- d. The quality and accuracy of the consumer-facing symptom checker content developed by Drs. Schmitt and Thompson, leveraging their 20 years medical call center experience, is supported by published research. A 2015 study in the British Medical Journal reported that *“Symptom checkers that used the Schmitt or Thompson nurse triage protocols were more likely to provide appropriate triage decisions...”*.<sup>28</sup>

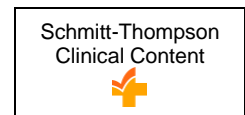
### Targeted Care Advice

- e. Clinical Content should contain specific (“targeted”) care advice for each triage question. This ensures that care advice is relevant to the precise set of symptoms and disposition of the caller. It reduces triage nurses’ need to scan lists and to select appropriate care advice.
- f. Lack of targeted care advice wastes nursing time; causing nurses to spend time selecting and sometimes even creating care advice for callers. It also leads to inaccurate documentation of what care advice was actually given.



### 4. Topic Splitting.

- a. “Splitting” refers to a guideline development philosophy of splitting topic areas into discrete triage guidelines that address specific patient complaints. Shorter and complaint-specific guidelines allow the nurse to triage a patient with fewer questions and in less time. This is important because the cost per call is directly related to the length of the call.
- b. Using eye symptoms as an example, the Pediatric Clinical Content splits these symptoms into: Eye - Allergy; Eye - Chemical in; Eye - Foreign Body; Eye - Pus or Discharge; Eye - Red without Pus; Eye - Swelling; Eyes - Dark Circles Under; Sty; Tear Duct, Blocked; Trauma, Eye; and Vision, Loss or Change.
- c. Splitting also permits more targeted and relevant care advice.



### 5. Annual Updates and New Guidelines

- a. The Clinical Content should be reviewed and updated each year. The review/update process should consider



<sup>24</sup> Thompson DA, Yarnold PR: Relating satisfaction to patients' waiting time perceptions and expectations: The Disconfirmation Paradigm. *Academic Emergency Medicine* 1995; 2:1057-1062.

<sup>25</sup> Thompson DA, Yarnold PR, Williams D, Adams SL: The effects of actual waiting time, perceived waiting time, information delivery, and expressive quality on patient satisfaction. *Annals of Emergency Medicine* 1996; 28: 657-665.

<sup>26</sup> Yarnold PA, Michelson EA, Thompson DA, Adams SL: Predicting patient satisfaction: a study of two emergency departments. *Journal of Behavioral Medicine*, 21:545-563; 1998.

<sup>27</sup> Fernandes FI, Tanabe P, Gilboy N, Johnson L, Rosenau AM, Sawchuk P, Suter RE, Thompson DA, Travers D. Five-Level Triage: A Report from the ACEP/ENA Five-Level Triage Task Force. *J Emerg Nurs*. 2005;31(1):39-50.

<sup>28</sup> Evaluation of symptom checkers for self diagnosis and triage: audit study. Semigran HL, Linder JA, Gidengil C, Mehrotra A. *BMJ*. 2015 Jul 8;351:h3480.

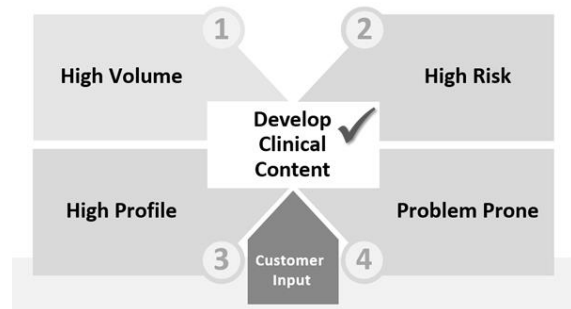
call center input (triage nurses, call center medical directors) as well as statistical evidence (call center quality improvement projects and research) and new medical evidence (literature review).

- b. The Schmitt-Thompson Clinical Content is reviewed and updated annually. "Red-line" documents showing changes are provided to call center clients.
- c. The Schmitt-Thompson Clinical Content has an ongoing quality assurance program that results in continual improvement. For example, in preparing for recent annual updates, the following sources of data have been utilized:
  - i. Formal tabular/graphical reports/spreadsheet data from call centers
  - ii. Formal quality improvement study data from call centers
  - iii. Formal tabulated "clinical concern forms" and "guideline clarification" documents (narrative suggestions from call centers nurses; to which Schmitt-Thompson provide written point-by-point responses).
  - iv. Informal email input from many call center managers and medical directors.
  - v. Quantitative analysis of a sample of 6.5 million calls from 10 (most recent study) medical call centers<sup>29</sup>
  - vi. Quantitative analysis of call volume at Children's Hospital Colorado.
  - vii. 'Chart Reviews' of samples of calls with the same presenting chief complaint (e.g., dizziness, ear-trauma guidelines)
  - viii. Review of guidelines by Adult and Pediatric Review Panels.
  - ix. Literature review (new references are added to content; outdated references are eliminated).



- d. Research data from emergency departments, telemedicine, and urgent care centers on chief complaints/outcomes and pain scores/outcomes. The process for writing new guidelines should be systematic, evidence-based, and referenced. Guidelines should be reviewed and tested before release. Schmitt-Thompson new guidelines meet these rigorous criteria (description available upon request).

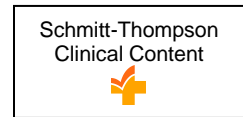
What is your framework for prioritizing NEW telephone triage guideline development?



<sup>29</sup> Thompson DA. Medical Call Center Benchmarking Report: 2004 to 2016. An analysis of 6.5 million triage calls from 10 medical call centers. Limited distribution to participating call centers. 2017.

## 6. Review Panel and Review Process

- a. The clinical review process should be rigorous. The guideline review process should include physicians and nurses with experience and knowledge in the topic area.
- b. Each of the Schmitt-Thompson telephone triage guidelines have been reviewed by members of the Pediatric or Adult Review Panels. The Review Panels are comprised of triage nurses, specialty nurses, medical call center directors, primary care physicians, emergency physicians, and physician specialists (list available upon request).



## 7. Clinical Rigor and Referral Rates

- a. The Clinical Content should be clinically rigorous. It should provide safe, effective, and efficient triage that directs patients to the most appropriate level of care.
- b. Each guideline should accurately reflect the spectrum of relevant diagnoses for that chief complaint (reason for call)..
- c. There is a dynamic and important balance between under-referral and over-referral.
- d. The term ED under-referral describes referring the patient to a disposition level lower than ideal. Delays in diagnosis and treatment can lead to adverse outcomes. Under-referral rates to the Emergency Department should approach zero.
- e. Over-referral is the term used to describe when a patient is directed to a level of care more urgent than needed. Over-referral leads to unnecessary ambulance runs (EMS 911), excessive emergency department visits, and increased cost to the patient and health care system. Over-referral rates should be tracked and kept to a minimum. Quality audits of patients sent to the emergency department should show less than 10% over-referral.<sup>30</sup>



## 8. Rationale Statements (Reasons and Rule-Outs)

- a. The Schmitt-Thompson Clinical Content contains rationale statements for most triage questions. These rationale statements contain “reasons” explaining why the question is important or “rule-outs” listing potential diagnoses. The rationale statements are solely for the nurse’s benefit and are not to be shared with the callers.
- b. The rationale statements allow the nurse triager to
  - i. Understand the reasons behind each question
  - ii. More easily memorize the questions (understanding increases recall)



<sup>30</sup> Kempe A, Dempsey C, Whitefield J, Bothner J, MacKenzie T, Poole S. Appropriateness of urgent referrals by nurses at a hospital-based pediatric call center. Arch Pediatr Adolesc Med. 2000 Apr;154(4):355-60.

- iii. More quickly assimilate the clinical thinking skills used in triage.
- iv. Increase triage nurse job satisfaction and improve nursing judgment
- c. Rationale statements also add to nurse compliance in asking questions sequentially. When nurses skip guideline questions, it is often because they do not understand their relevance.
- d. Call centers that have used Clinical Content that does not contain rationale statements and then switched to content with rationale statements, usually comment on the positive change in nurse adherence to guidelines as documented by call audits.

## 9. Cross-Protocol Compatibility

- a. Adult and pediatric content should have identical organization and structure. Triage question phrasing should be consistent from guideline to guideline.
- b. The format should be user-friendly, easy to learn, and supportive of nurse decision-making.
- c. If similar concepts/conditions are phrased differently from guideline to guideline, then the nurses have to mentally shift gears between guidelines. Inconsistencies are frustrating and time-consuming for triage nurses.



## 10. Cross-Content Set Compatibility

- a. Drs. Schmitt and Thompson have developed a compatible set of telephone triage guidelines for use by call centers and office practices when the doctor's office is open <sup>31</sup> <sup>32</sup>. Both are updated annually.



## 11. Second-Level Triage

- a. Some organizations choose to offer second-level triage by a primary care physician. This can reduce emergent and urgent referrals significantly. <sup>33</sup>
- b. Protocol dispositions should support effective "second level triage" by the PCP, if the PCP requests this as part of his/her provider profile.
- c. The Schmitt-Thompson Clinical Content has this optional capability built-in to the disposition structure for selected calls.



<sup>31</sup> Schmitt BD. Pediatric Office Hours Protocols. 241 topics. Copyright 2006-2017.

<sup>32</sup> Thompson DA. Adult Office Hours Protocols. 183 topics. Copyright 2006-2017.

<sup>33</sup> Kempe A, Dempsey C, Hegarty T, Frei N, Chandramouli V, Poole SR. Reducing after-hours referrals by an after-hours call center with second-level physician triage. Pediatrics. 2000 Jul;106(1 Pt 2):226-30.

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### Evaluating Clinical Content Sets – 10 Priorities

1. Have an expert panel of physicians and triage nurses compare similar guideline topics.
  2. Talk with existing clients regarding content completeness, ease of use, handle times.
  3. Is clinical content accurate?
  4. Is clinical content researched, referenced, and reviewed?
  5. Is clinical content logical and user-friendly?
  6. Do the dispositions fit with your healthcare system?
  7. Is the call process consistent and easy to use?
  8. Do the adult and pediatric content sets have same structure and format?
  9. Emergent–urgent referral rate: is there no ED under-referral and reasonable ED over-referral?
  10. Are yearly updates provided and substantive?
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