LWOT Problem Tool

Quotes
Surge
Scenarios
LWOT

LWOT
Problem?

1
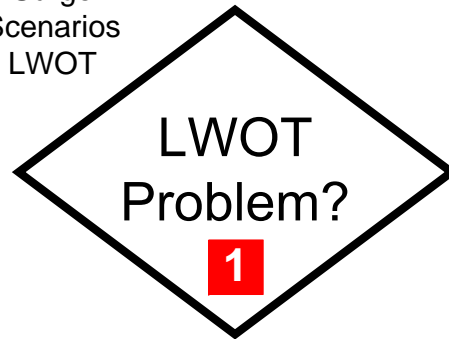
Jeffery K. Cochran, PhD
James R. Broyles, BSE

Analysis Goals

- With this tool, the user will be able to answer the question: "In our Emergency Department (ED), is the percentage of patients that Leave Without Treatment (LWOT%) a problem?"

- This analysis is based on two relationships:
  - LWOT% versus "peer" LWOT values.
  - LWOT% versus ED volume.

A Population At Risk

"A study of the consequences of leaving the emergency department prior to a medical evaluation at one public hospital found that 46 percent of those who left were judged to need immediate medical attention, and 11 percent who left were hospitalized within the next week."[1]

"At follow-up, patients who left without being seen were twice as likely as those who were seen to report that their pain or the seriousness of their problem was worse."[2]
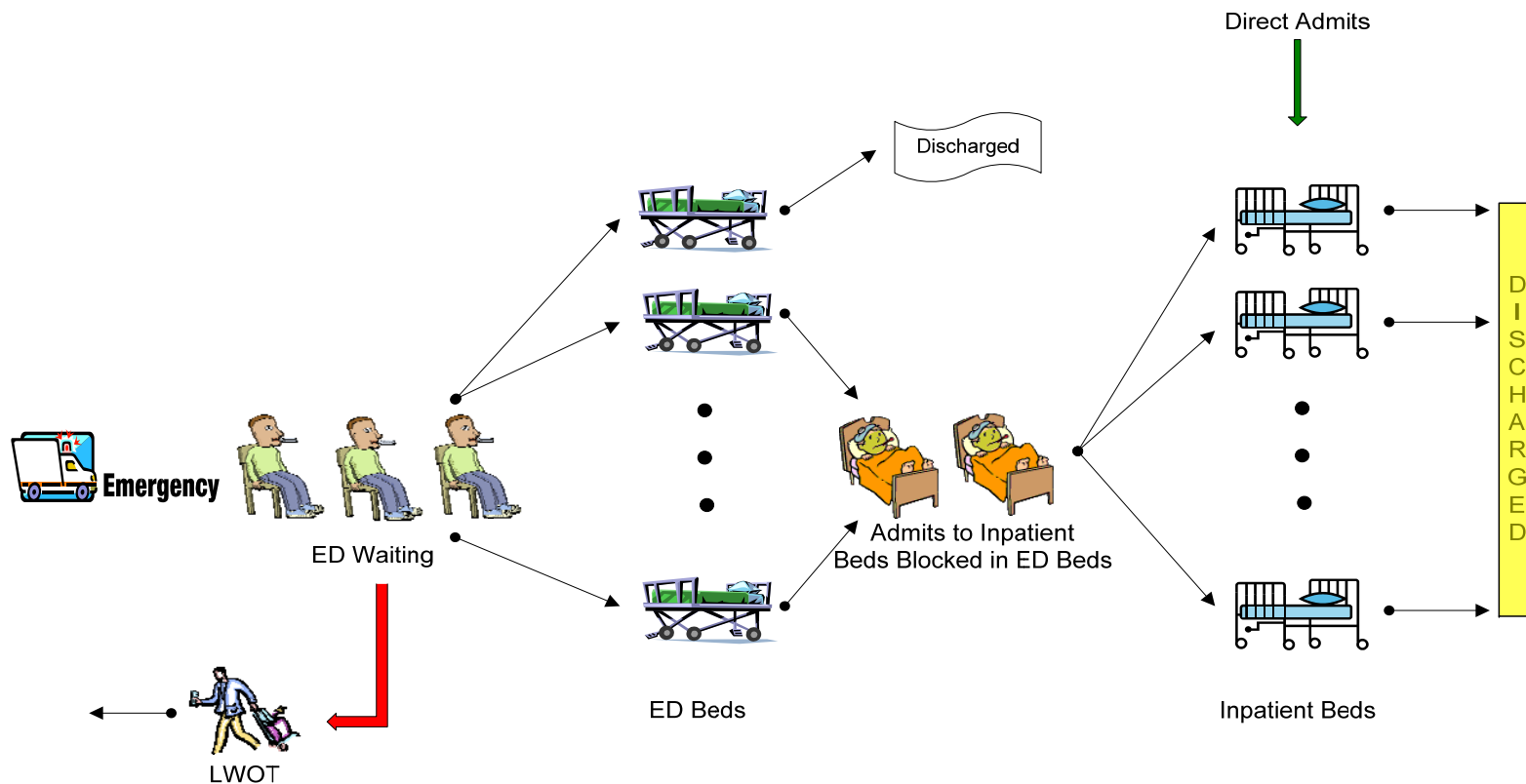
"Of the children who left without being seen, 24 (15%) were triaged as "urgent," and none had a CTAS score of less than 3…Our finding that 15% of patients who left without being seen had been triaged as "urgent" is of concern."[3]

"Forty-six percent of those who left were judged to need immediate medical attention, and 29% needed care within 24 to 48 hours."[4]

"Overall, 60% of LWBS (Left Without Being Seen) cases sought medical attention within one week; 14 patients were hospitalized, and one required urgent surgery."[5]

High Level Classical ED Flow Process[6]

We define patients that Leave Without Treatment (LWOT) as all patients who do not see a physician (left without being seen).

Direct Admits

Discharged

Emergency

ED Waiting

LWOT

ED Beds

Admits to Inpatient Beds Blocked in ED Beds

Inpatient Beds

DISCHARGED

Necessary Inputs (more data is better)

Clear Data	Analyze Data

Month	LWOT#	Total Patients
Jan-04	710	8037
Feb-04	1105	8154
Mar-04	673	7761
Apr-04	396	7177
May-04	254	7284
Jun-04	253	6956
Jul-04	202	7012
Aug-04	315	7351
Sep-04	419	7523
Oct-04	335	7531
Nov-04	367	7480
Dec-04	446	7802

- The input cells are shaded.
- Enable Macros.
- Push "Clear Data" button to erase old data.
- Push "Analyze Data" to examine the new data entered*.
- Up to five years of data can be entered.

So, How Is The Data Analyzed?

- We calculate your average LWOT%. Monthly arrival volumes are adjusted to the number of days in each month.

- We use a "generic" curve that we have discovered[7] to relate your LWOT% to your ED patient arrival volume.

  - This curve captures the unique patient attitude towards waiting in any particular ED.

  - This curve is useful *outside* of the range of data collected.

  - If this curve will not work for your data, a Fit Performance cell will be Red. Otherwise, Green.

The EXCEL® Tool 1

LWOT Problem?

1

LWOT Problem?

Purpose: Calculates Past Average LWOT% per Month. Plots Past LWOT% Vs. Patient Volume.

Directions:
Macros must be enabled. First, click the "Clear Data" button to clear the default data. Then, input the month, monthly number of patients that Leave Without Treatment (LWOT), and the total number of patient visits including LWOT in the table below. Fin

INPUT:

Clear Data		Analyze Data

OUTPUT:

	Average per Month
LWOT#	717
LWOT%	9.1%
Patient#	7710

Fit Performance	
R^2	-30%

Red if R^2 < 35%.

Historical Information

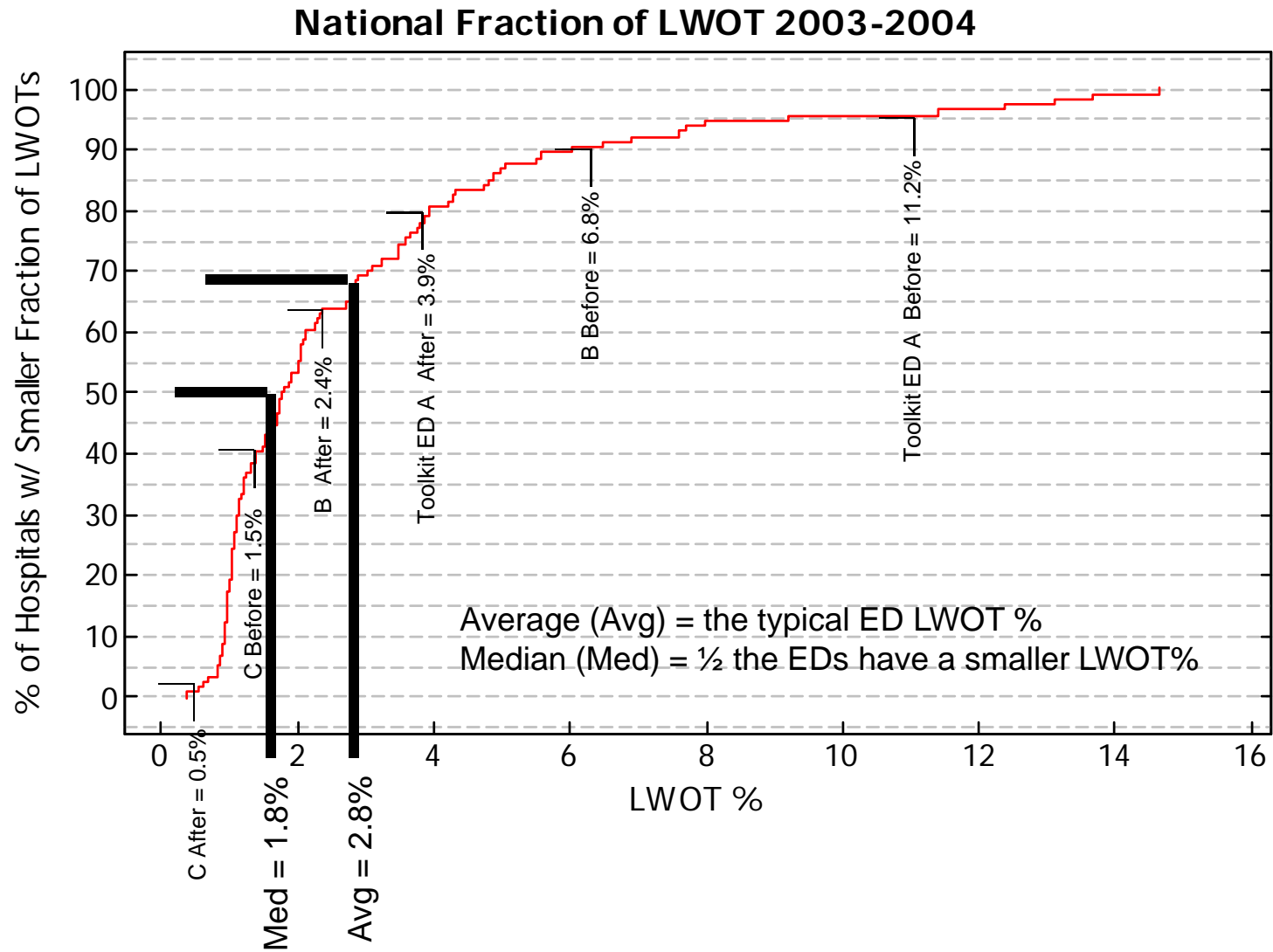| Month	LWOT#	Total Patients	LWOT%
Jan-04	710	8037	8.8%
Feb-04	1105	8154	13.6%
Mar-04	673	7761	8.7%
Apr-04	396	7177	5.5%
May-04	254	7284	3.5%
Jun-04	253	6956	3.6%
Jul-04	202	7012	2.9%
Aug-04	315	7351	4.3%
Sep-04	419	7523	5.6%
Oct-04	335	7531	4.4%
Nov-04	367	7480	4.9%
Dec-04	446	7802	5.7%
Jan-05	983	8837	11.1%
Feb-05	1103	7986	13.8%
Mar-05	1130	8557	13.2%
Apr-05	1341	8314	16.1%
May-05	1307	8284	15.8%
Jun-05	730	6977	10.5%
Jul-05	703	7027	10.0%
Aug-05	808	7356	11.0%
Sep-05	588	7431	7.9%
Oct-05	658	7740	8.5%
Nov-05	634	7622	8.3%
Dec-05	1742	8842	19.7%

Queuing Prediction Curve of LWOT[7]

Your ED's LWOT
Compared to National Experience

- Method:
  - Using 180 EDs from the 2003-2004 National Hospital Ambulatory Medical Care Survey[8] (NHAMCS), individual hospital LWOT is compared to national statistics.
  - A 'cumulative probability distribution' CPD plot is used.
  - For additional references on measured LWOT, see: [2][4][8][9][10][11][12][13][14] which tend to confirm [8].
- How to use the CPD plot on the next slide: Find your LWOT% along the bottom and read the percent of EDs that have LWOT% smaller than yours on the left.
- Three hospitals are shown that implemented D2D. For example, ED A before process change LWOT% = 11.2% (91% of EDs have less) and after process change LWOT% = 3.9% (79% of EDs have less). Each had large reductions.

LWOT Values Before & After Process Change
Only with EDs whose LWOTs are > 0 (63% of EDs) are included

National Fraction of LWOT 2003-2004

% of Hospitals w/ Smaller Fraction of LWOTs

LWOT %

C Before = 1.5%

B After = 2.4%

Toolkit ED A After = 3.9%

B Before = 6.8%

Toolkit ED A Before = 11.2%

C After = 0.5%

Med = 1.8%

Avg = 2.8%

Average (Avg) = the typical ED LWOT %
Median (Med) = ½ the EDs have a smaller LWOT%

Next Step: to Flow Chart [A Care Process] or STOP

- If your LWOT% is not, and will not become, a problem, then: STOP

- If your LWOT% is, or will become, a problem - or you just want to improve (like ED C) - proceed to: Flow Chart [A Care Process]

References

[1] United States General Accounting Office. Hospital Emergency Departments: Crowded conditions vary among hospitals and communities. *Report to the Ranking Minority Member, Committee on Finance, U.S. Senate* 2003 Mar.

[2] Bindman AB, Grumback K, Keane D, Rauch L, Luce JM. Consequences of queuing care at a public hospital emergency department. *Journal of the American Medical Association* 1991; 266:1091-1096.

[3] Goldman RD, Macpherson A, Schuh S, Mulligan C, Pirie J. Patients who leave the pediatric emergency department without being seen: a case–control study. *Canadian Medical Association Journal* 2004; 171(1):39-43.

[4] Baker DW, Stevens CD, Brook RH. Patients who leave a public hospital emergency department without being seen by a physician. Causes and consequences. *Journal of the American Medical Association* 1991; 266:1085-1090.

[5] Rowe BH, Channan P, Bullard M, Bltiz S, Saunders D, Rosychuk RJ, Lari H, Craig WR, Holroyd BR. Characteristics of patients who leave emergency departments without being seen. *Academic Emergency Medicine* 2006; 8:848-852.

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[14] Polevoi SK, Quinn JV, Kramer NR. Factors associated with patients who leave without being seen. *Academic Emergency Medicine* 2005;12(3):232-236.

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