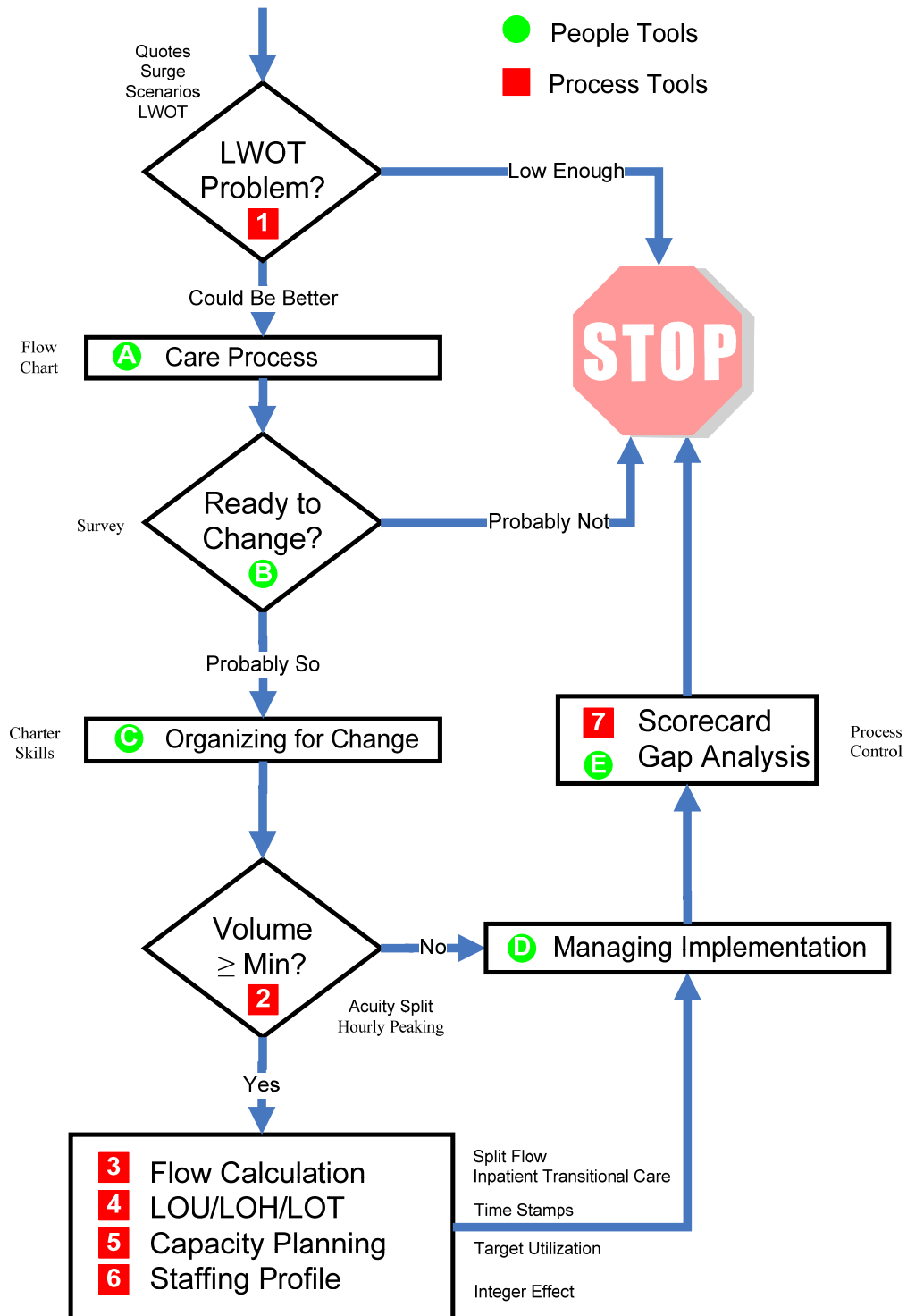


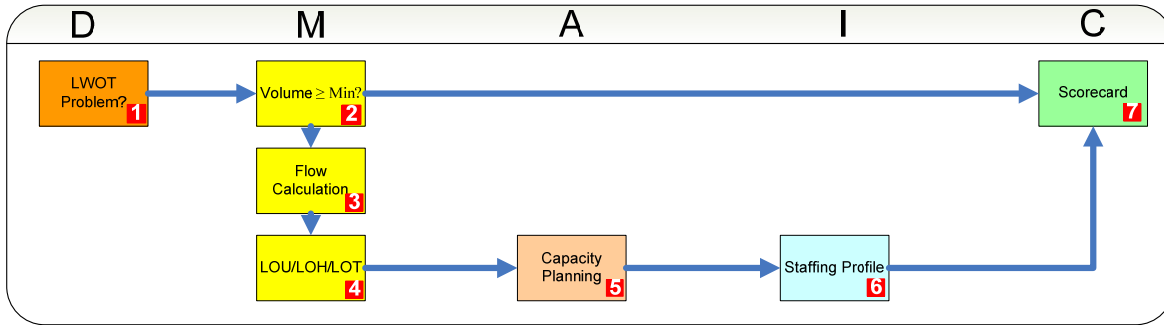
Door-to-Doc (D2D) Patient Safety Toolkit

Banner Health and Arizona State University

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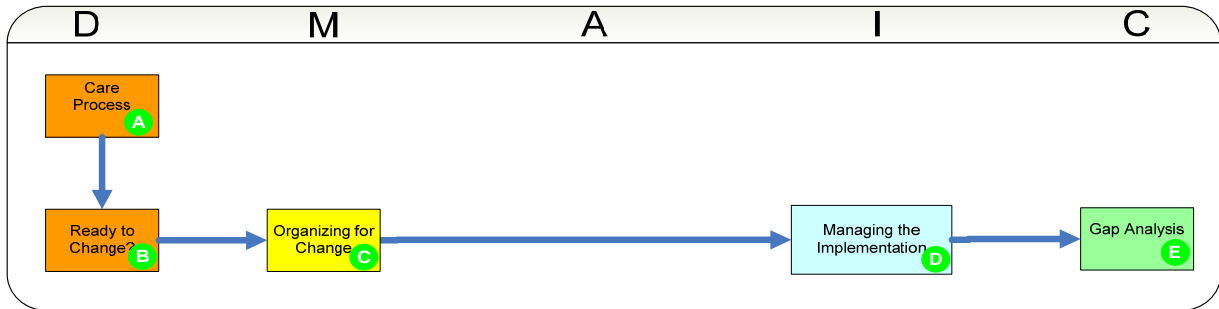
D2D Process Toolkit Components



| Process Toolkit Components | | | | | | |
|----------------------------|--------------------|-------------------|-------|---|--|--|
| # | DMAIC ^S | Names | Form* | Function | Example | |
| 1 | D | LWOT Problem? | P, E | Characterizes if LWOTs are a Problem. Plots Past LWOT% Vs. Patient Volume | | |
| 2 | M | Volume ≥ Min? | P, E | Selects ED's Busiest Times to Determine if "Split Flow" is Required | <p>Adjusting for Daily Peaking¹³</p> <ul style="list-style-type: none"> Daily volume is scaled up to adjust for 8am-9pm peak patient arrivals <ul style="list-style-type: none"> Peak period: During these hours, 60% of daily arrivals occur and arrival rate is fairly stable. 8am-9pm Peak Multiplier = 1.30 | |
| 3 | M | Flow Calculation | P, E | Calculates the Arrival Rates to Each ED Location | <p>The Split ED Patient Flow Diagram</p> | |
| 4 | M | LOU/LOH/LOT | P, E | Summarizes ED Patient Length of Use (LOU), Length of Hold (LOH), and Length of Test Turnaround (LOT) Durations by Urgency Level | <p>Duration Calculations Needed</p> <p>LOU = Length of Use = Time from Rx to Disposition = T₁ - T₂ LOH = Length of Hold = Time from Rx to Discharge Admitted LOT = Length of Test Turnaround = Time in Results Waiting (incl. patient registration) = T₂ - T₃</p> | |
| 5 | A | Capacity Planning | P, E | Capacitates for Target Utilizations and Acceptable Patient Safety Measures | <p>Tool 5 Calculations</p> <ul style="list-style-type: none"> Utilization (ρ) = $\frac{\lambda}{\mu}$ Expected wait time in queue (W_q) = $\frac{\rho}{\mu(1-\rho)}$ where $\rho = \frac{\lambda}{\mu}$ Full/Busy probability (P_b) = $\frac{\rho}{1-\rho}$ Close-to-Close (DDD) time = $\frac{1}{\mu(1-\rho)}$ DDD time = $\frac{1}{\mu(1-\rho)}$ | |
| 6 | I | Staffing | P, E | Aligns Staffing with Patient Demand, Physician Productivity, and Economies of Scale | | |
| 7 | C | Scorecard | P, E | Defines and Monitors Strategic Performance Measures | <p>Patient Safety Meets Operational Performance: Evidence of Relationship Between LWOT1% and DDD Time</p> <ul style="list-style-type: none"> There is a strong positive relationship between LWOT1% and DDD Time. As LWOT1% increases, DDD Time also increases. There is a strong negative relationship between LWOT1% and Patient Safety. As LWOT1% increases, Patient Safety decreases. | |

\$ D - Define M - Measure A - Analyze I - Improve C - Control
 * E - Excel P - PowerPoint

D2D People Toolkit Components



| People Toolkit Components | | | | | |
|---------------------------|--------------------|-----------------------------|-------|---|---------|
| # | DMAIC ^s | Names | Form* | Function | Example |
| A | D | Care Process | P | Compares D2D Care Process with current ED to identify potential changes | |
| B | D | Ready to Change? | P | Assesses change readiness and provides tips for improving acceptance | |
| C | M | Organizing for Change | P | Describes team structures as well as roles and responsibilities | |
| D | I | Managing the Implementation | P, E | Identifies key activities for managing D2D implementation | |
| E | C | Gap Analysis | P, E | Addresses process control issues after implementation | |

\$ D - Define M - Measure A - Analyze I - Improve C - Control

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