



lean innovations

The tools are in your hands.

# The Changing Role of the Middle Manager in Leading a Lean Transformation

2006 Healthcare Middle Management Conference

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Toronto, ON



# Summary Outline

- ▶ Introduction
- ▶ Toyota Production System (TPS) and Lean Healthcare
- ▶ reVIEW© Lean Healthcare Education Program
- ▶ Implementation in Canada
- ▶ New Role for Middle Manager in a Lean Transformation
- ▶ Early Successes and Challenges Ahead
- ▶ Questions





## Opening Scenario – Inaccurate ECG report

- ▶ **Cardiologist approaches PCC in ED to complain about yet another inaccurate ECG**
- ▶ **Patient care delayed, must re-do the ECG stat**
- ▶ **Cardiologist also demands some in-service training be scheduled for ED nurses on doing ECG's**
- ▶ **What would your PCC do?**
- ▶ **As a middle manager, what would your involvement/role be?**





# Introduction to Lean Healthcare

## Approach to Process Improvement Based on the Toyota Production System (TPS)

### Key features:

- ▶ **Most successful auto maker & best in quality**
- ▶ **Relentless in eliminating waste**
- ▶ **Workers are regarded as the resident experts in their work**
- ▶ **Culture of continuous improvement vs. culture of blame**
- ▶ **Dedicated to always be working toward “IDEAL”**
- ▶ **All processes must match and support the work**
- ▶ **“Decoding the DNA of the Toyota Production System”, (Bowen & Spear, 1999), identified the core concepts of TPS**





# Core Concept – Constantly Moving Toward IDEAL

## IDEAL<sup>1</sup> for Healthcare:

- ▶ Exactly what the patient needs, defect free
- ▶ One by one, customized to each individual patient
- ▶ On demand, exactly as requested
- ▶ Immediate response to problems or changes
- ▶ No waste
- ▶ Safe for patients, staff and clinicians; physically, emotionally & professionally

1 Adapted from “Decoding the DNA of the Toyota Production System”, Bowen & Spear, Harvard Business Review ©1999





## Core Concept – Four Rules in Use

### Four Rules in Use<sup>1</sup>:

- ▶ **All work is clearly specified by Content, Sequence, Timing & Outcome**
- ▶ **Connections are direct, preferably with a Yes/No response**
- ▶ **Pathways are simple and each step essential**
- ▶ **Improvements are**
  - **Direct response to a problem or change**
  - **Made as close to the problem as possible**
  - **Done as an experiment by those doing the work**
  - **Supported by a Coach**

1 Adapted from “Decoding the DNA of the Toyota Production System”, Bowen & Spear, Harvard Business Review ©1999





## Why Lean in Healthcare? Why Not?

- ▶ **Demographics: Increasing demands and decreasing supply of people**
- ▶ **Published research indicates 30% to 40% waste in healthcare (wasted time, effort, space, supplies, etc.)**
- ▶ **Highly educated and motivated workforce who already know many of the answers**
- ▶ **Frustrated workforce by processes that don't support them in doing their good work**
- ▶ **Employee engagement improves retention and impression on incoming workers**





# reVIEW<sup>©</sup> Lean Healthcare Education Program

## Education program – different approach to Lean for healthcare

- ▶ US National Science Foundation grant (Jimmerson & Sobek)
- ▶ Program developed by experienced healthcare professionals
- ▶ Simple tools using pencil, paper & eraser
- ▶ Patient-centric approach to root-cause problem solving
- ▶ Participants “learn by doing”
- ▶ Spans across different departments and work areas and builds relationships
- ▶ Program builds internal infrastructure and capacity







# TPS Tools Adopted for Healthcare

## Value Stream Map (VSM)

- ▶ High-level view of an entire process
- ▶ Cuts across departments and groups

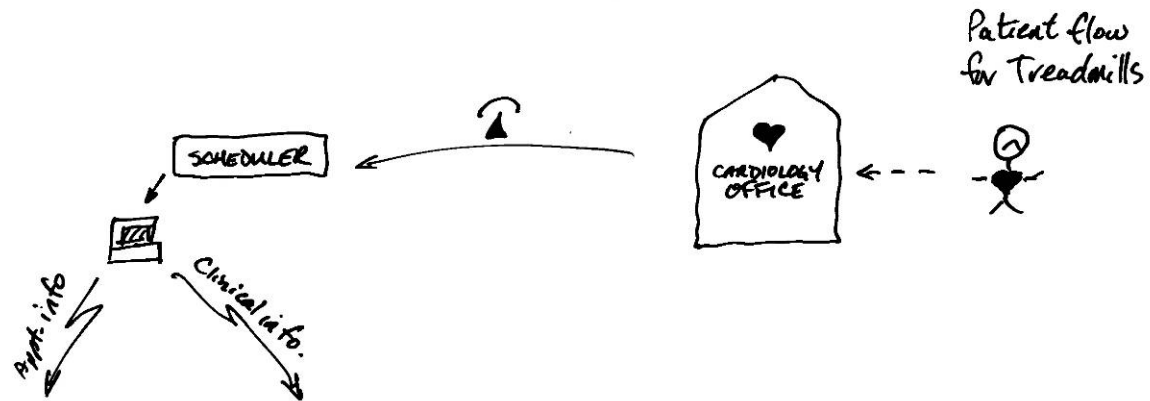
## A3 Report

- ▶ Root cause problem solving tool based on scientific method
- ▶ First deeply understand “current condition”
- ▶ Target condition must be achievable in short order
- ▶ Accountability built in to implementation



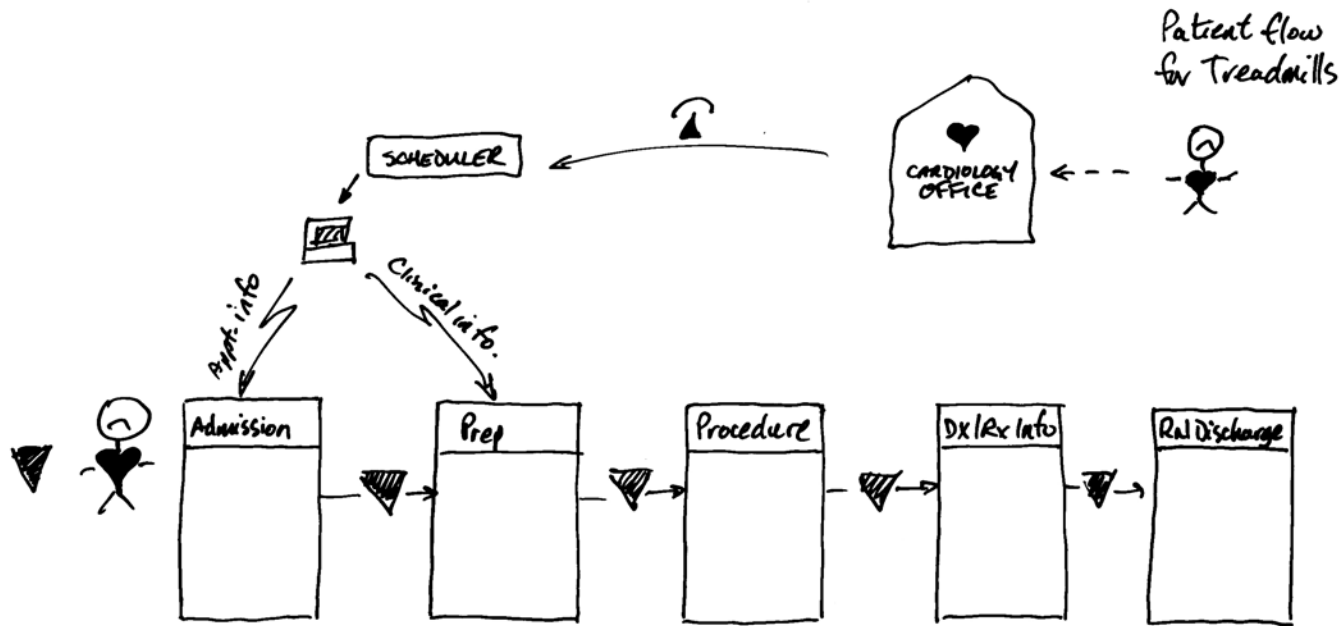


# reVIEW<sup>©</sup> Tools – Value Stream Map (Request)



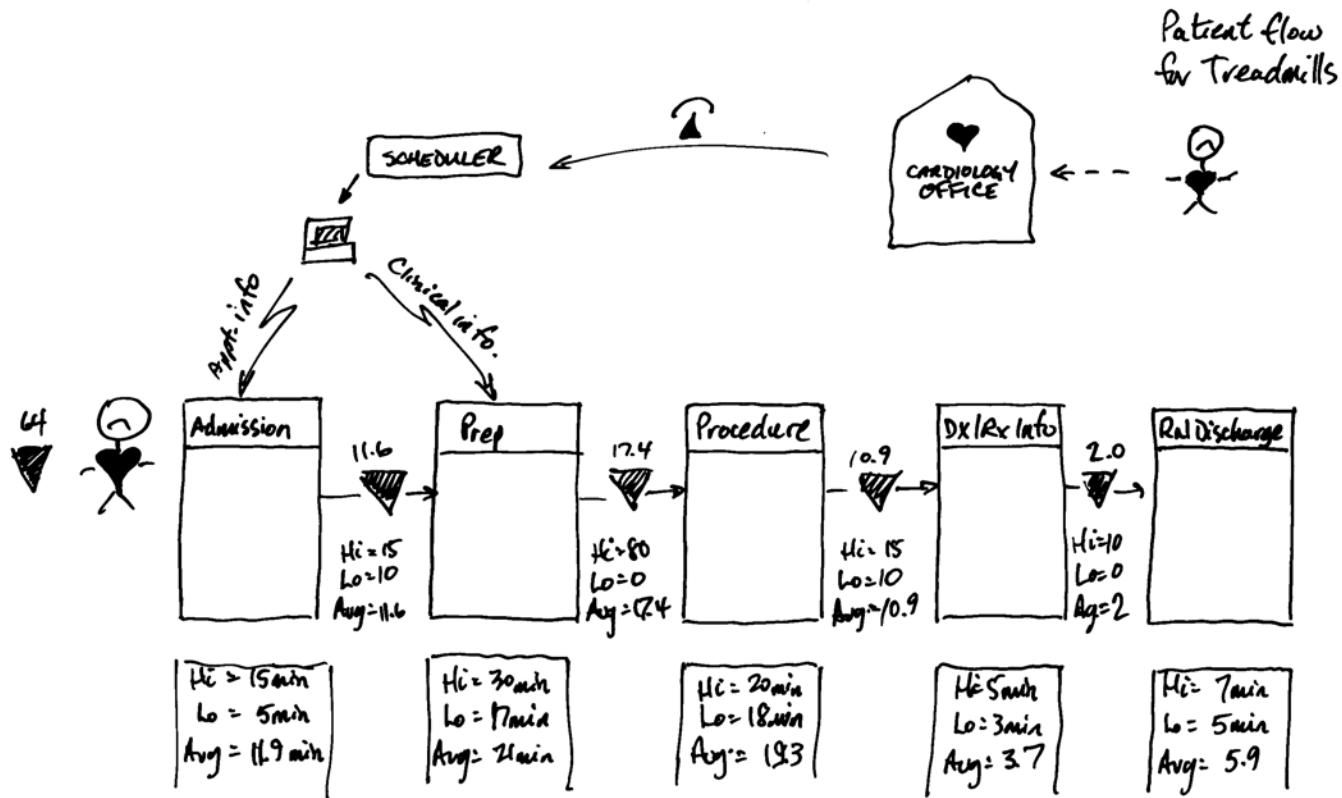


# reVIEW© Tools – Value Stream Map (Process Delivery)



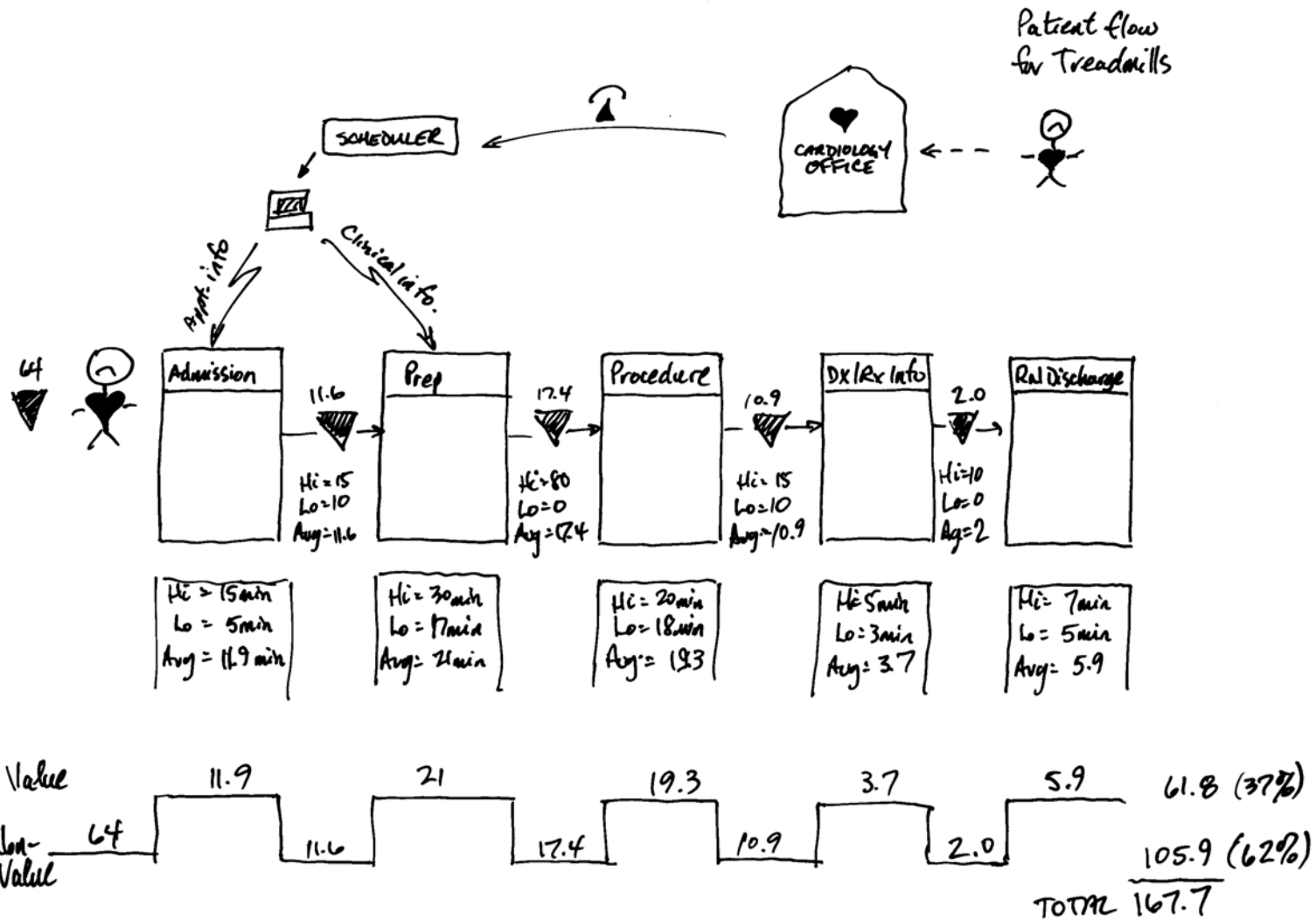


# reVIEW<sup>©</sup> Tools – Value Stream Map (Basic Data)





# reVIEW© Tools – Value Stream Map (Value-Added Activity)





# reVIEW<sup>©</sup> Tools – A3 Report Problem Solving

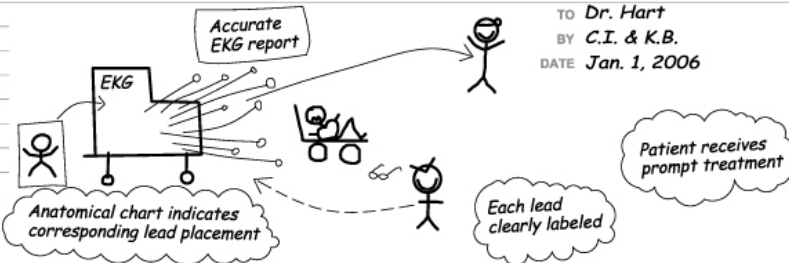
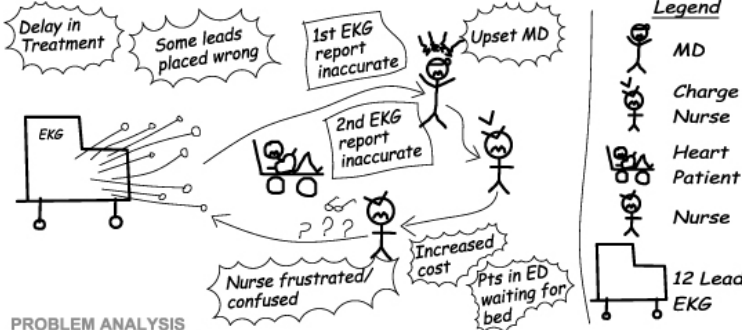
**ISSUE** Patient's diagnosis and care was delayed by inaccurate 12-lead EKG.

**TARGET CONDITION**

**TITLE** Unmarked EKG Leads  
 TO Dr. Hart  
 BY C.I. & K.B.  
 DATE Jan. 1, 2006

**BACKGROUND** November 1 to December 15, three 12-lead EKGs repeated due to incorrect placement of EKG leads. Average time of repeated EKG to MD = 31 minutes

**CURRENT CONDITION**



**COUNTERMEASURES**

- 1) Clearly label EKG cables/ leads
- 2) Create reliable system for replacing labels when worn

**IMPLEMENTATION PLAN**

what	who	when	outcome
1) Label EKG leads	Biomed. Eng.	Feb. 1/ 06	Clear signal to RN for lead placement
2) In-service for staff	Charge RN	Feb. 4/ 06	Staff aware of labeling/ replacement process
3) System for label replacement	Biomed. Eng & Charge RN	Feb. 2/ 06	Clear process for staff to ensure labels are kept readable

**PROBLEM ANALYSIS**

- 1) Delay in patient's treatment
  - Why? EKG needs to be repeated
  - Why? Some leads placed incorrectly on patient
  - Why? Leads aren't clearly identified (marks worn off)
- 2) Increased cost to hospital and patient
  - Why? Redundant RN/ MD work
  - Why? Wasted materials/ use of EKG machine
  - Why? Other patients can't be seen
- 3) Nurse frustration and confusion
  - Why? No clear signal for EKG lead placement
  - Why? Leads aren't clearly identified (markers worn off)
  - Why? MD is upset
  - Why? Concern for patient/ delay in diagnosis
  - Why? Incorrect EKG
  - Why? Leads aren't clearly marked

**COST**

**COST BENEFIT / WASTE RECOGNITION**

Inspect/ replace labels for all EKG's first time (labour & materials) - \$300  
 Inspect/ replace labels for all EKG's - ongoing during routine servicing - n/c  
 staff in service - n/c

**TEST**

RN does EKG on simulated patient w/ anatomical chart and marked leads = 9 minutes

**FOLLOW UP**

Feb. 15/ 06 - March 15/ 06 = 0 repeated EKG's





## Implementation in Canada

### Fraser Health Authority (BC)

- ▶ Began with consulting assignment as demonstration of tools
- ▶ reVIEW© program initiated at 3 hospitals in Sept 2005
- ▶ Excellent response from participants
- ▶ Program continued at all 3 sites – Instructors now trained
- ▶ Ambulatory Care dept. at a 4<sup>th</sup> hospital now piloting





# New Role for Middle Manager

## Traditional approach to problem solving

- ▶ Manager presented with problems and complaints
- ▶ Top down solutions implemented

## Lean approach to problem solving

- ▶ Lead by example and by clear expectation
- ▶ Adopt one consistent method to solve problems
- ▶ Manager supports problem solving as mentor and coach
- ▶ Always working toward IDEAL
- ▶ Fewer meetings (Yippee!)







## Inaccurate ECG Report – Follow-up

**Traditional response?**

**Lean thinking response:**

- ▶ **Direct observation**
- ▶ **Lead markers worn off**
- ▶ **Follow-up with biomedical engineering techs**
  - **Mark leads**
  - **Make stickers available**
  - **Post clear notice for staff of change**
  - **Biomed. techs to check regularly**





## Early Successes and Challenges Ahead

### Successes:

- ▶ **Clinical IS training modules and scheduling**
- ▶ **Pilot partnership between hospital and Support Services**
- ▶ **Follow-on classes under way, 4<sup>th</sup> hospital now starting**

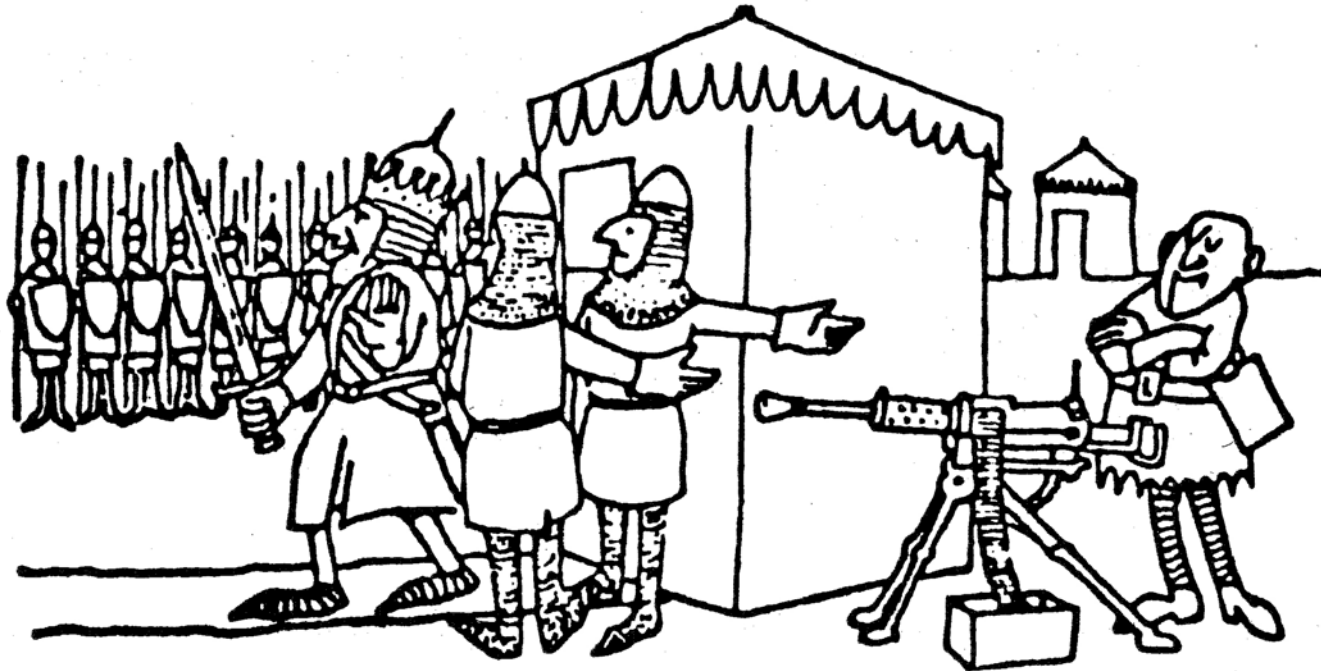
### Challenges:

- ▶ **Sustainability**
- ▶ **Time & attention**
- ▶ **Senior leadership active participation**





# Is Your Organization Ready?



**“NO! - I can't be Bothered to see any crazy salesman.  
We've got a battle to fight!”**



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The tools are in your hands.



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Thank you / Merci

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