UW TASP tele-antimicrobial stewardship program | echo

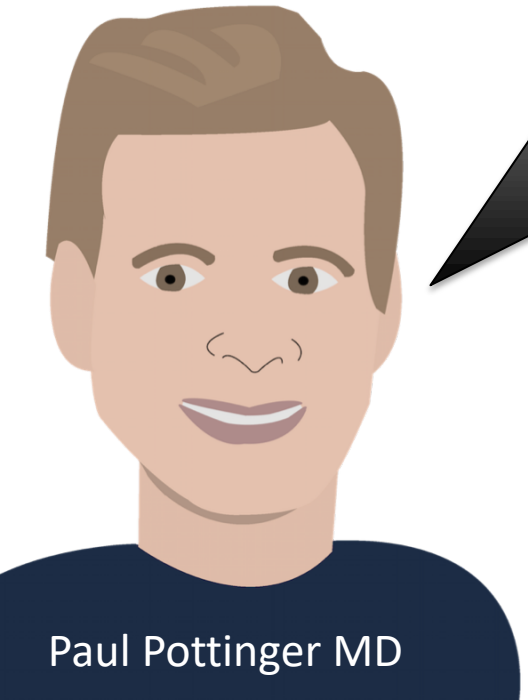
Do "Antibiotic Time Outs" Work?

Paul Pottinger, MD, FIDSA
Associate Professor
UW Medical Center &
The University of Washington School of Medicine

March 5, 2018

Disclosures

- No financial conflicts of interest
- Everything we discuss is QI, thus protected from legal discovery under WA State Code



Paul Pottinger MD

Question…

Do Antibiotic Time Outs Work?

Paul Pottinger MD

A. Yes!
B. No!
C. I'm Not Sure… What's an Antibiotic Time Out?

13. Radio Call & Altimeter—SET

15. RPM 2200—PILOT'S SIGNAL

APPROVED B-17F and G CHECKLIST

REVISED 3-1-44

PILOT'S DUTIES IN RED

COPILOT'S DUTIES IN BLACK

BEFORE STARTING

1. Pilot's Preflight—COMPLETE
2. Form 1A—CHECKED
3. Controls and Seats—CHECKED
4. Fuel Transfer Valves & Switch—OFF
5. Intercoolers—Cold
6. Gyros—UNCAGED
7. Fuel Shut-off Switches—OPEN
8. Gear Switch—NEUTRAL
9. Cowl Flaps—Open Right—OPEN LEFT—Locked
10. Turbos—OFF
11. Idle cut-off—CHECKED
12. Throttles—CLOSED
13. High RPM—CHECKED
14. Autopilot—OFF
15. De-icers and Anti-icers, Wing and Prop—OFF
16. Cabin Heat—OFF
17. Generators—OFF

STARTING ENGINES

1. Fire Guard and Call Clear—LEFT Right
2. Master Switch—ON
3. Battery switches and inverters—ON & CHECKED
4. Parking Brakes—Hydraulic Check—On-CHECKED
5. Booster Pumps—Pressure—ON & CHECKED
6. Carburetor Filters—Open
7. Fuel Quantity—Gallons per tank
8. Start Engines: both magnetos on after one revolution
9. Flight Indicator & Vacuum Pressures CHECKED
10. Radio—On
11. Check Instruments—CHECKED
12. Crew Report
13. Radio Call & Altimeter—SET

ENGINE RUN-UP

1. Brakes—Locked
2. Trim Tabs—SET
3. Exercise Turbos and Props
4. Check Generators—CHECKED & OFF
5. Run up Engines

BEFORE TAKEOFF

1. Tailwheel—Locked
2. Gyro—Set
3. Generators—ON

AFTER TAKEOFF

1. Wheel—PILOT'S SIGNAL
2. Power Reduction
3. Cowl Flaps
4. Wheel Check—OK right—OK LEFT

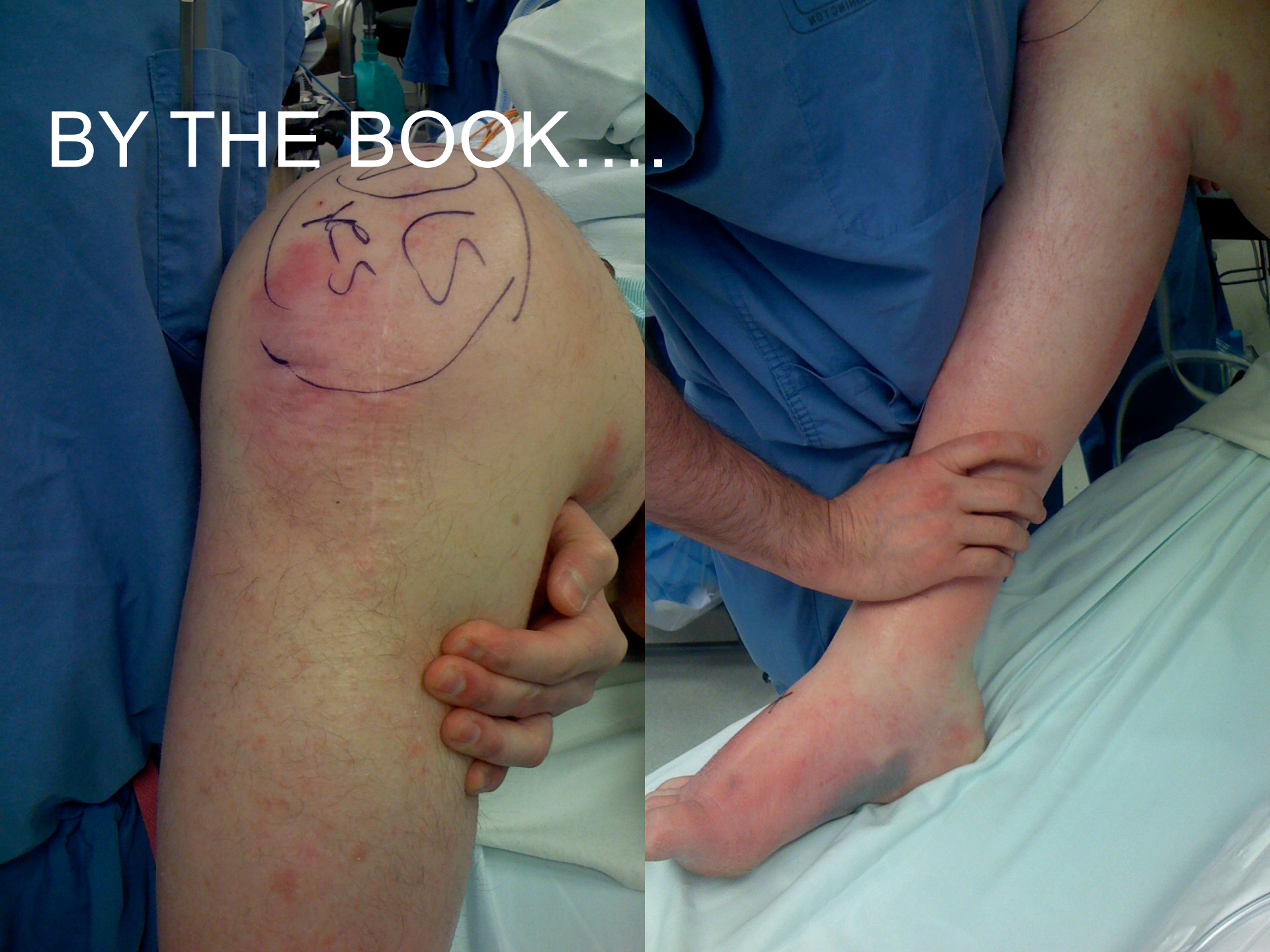
BEFORE LANDING

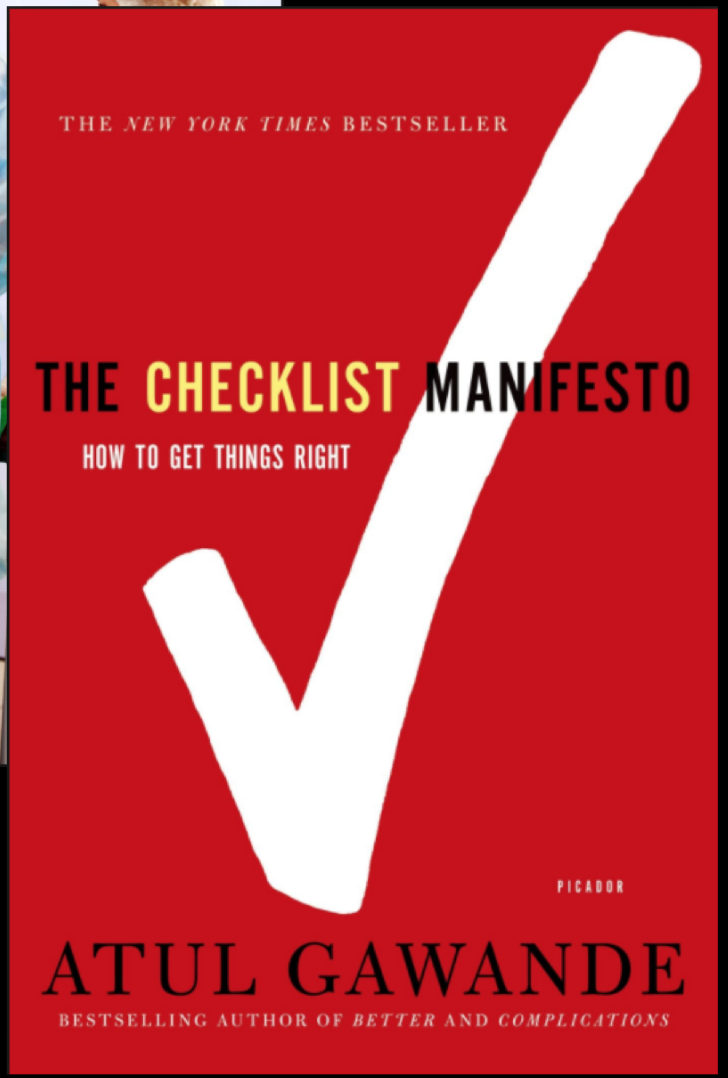
1. Radio Call, Altimeter—SET
2. Crew Positions—OK
3. Autopilot—OFF
4. Booster Pumps—On
5. Mixture Controls—AUTO-RICH
6. Intercooler—Set
7. Carburetor Filters—Open
8. Wing De-icers—Off
9. Landing Gear
   a. Visual—Down Right—DOWN LEFT Tailwheel Down, Antenna in, Ball Turret Checked
   b. Light—OK
   c. Switch Off—Neutral
10. Hydraulic Pressure—OK Valve closed
11. RPM 2100—Set
12. Turbos—Set
13. Flaps ⅓—⅓ Down

FINAL APPROACH

14. Flaps—PILOT'S SIGNAL
15. RPM 2200—PILOT'S SIGNAL

BY THE BOOK….




THE NEW YORK TIMES BESTSELLER
THE CHECKLIST MANIFESTO
HOW TO GET THINGS RIGHT
PICADOR
ATUL GAWANDE
BESTSELLING AUTHOR OF BETTER AND COMPLICATIONS

The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL ARTICLE

A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population

Alex B. Haynes, M.D., M.P.H., Thomas G. Weiser, M.D., M.P.H., William R. Berry, M.D., M.P.H., Stuart R. Lipsitz, Sc.D., Abdel-Hadi S. Breizat, M.D., Ph.D., E. Patchen Dellinger, M.D., Teodoro Herbosa, M.D., Sudhir Joseph, M.S., Pascience L. Kibatala, M.D., Marie Carmela M. Lapitan, M.D., Alan F. Merry, M.B., Ch.B., F.A.N.Z.C.A., F.R.C.A., Krishna Moorthy, M.D., F.R.C.S., et al., for the Safe Surgery Saves Lives Study Group*

N Engl J Med 2009; 360:491-499

Table 1. Elements of the Surgical Safety Checklist.*

Sign in

Before induction of anesthesia, members of the team (at least the nurse and an anesthesia professional) orally confirm that:

- The patient has verified his or her identity, the surgical site and procedure, and consent
- The surgical site is marked or site marking is not applicable
- The pulse oximeter is on the patient and functioning
- All members of the team are aware of whether the patient has a known allergy
- The patient's airway and risk of aspiration have been evaluated and appropriate equipment and assistance are available
- If there is a risk of blood loss of at least 500 ml (or 7 ml/kg of body weight, in children), appropriate access and fluids are available

Time out

Before skin incision, the entire team (nurses, surgeons, anesthesia professionals, and any others participating in the care of the patient) orally:

- Confirms that all team members have been introduced by name and role
- Confirms the patient's identity, surgical site, and procedure
- Reviews the anticipated critical events
  - Surgeon reviews critical and unexpected steps, operative duration, and anticipated blood loss
  - Anesthesia staff review concerns specific to the patient
  - Nursing staff review confirmation of sterility, equipment availability, and other concerns
- Confirms that prophylactic antibiotics have been administered ≤60 min before incision is made or that antibiotics are not indicated
- Confirms that all essential imaging results for the correct patient are displayed in the operating room

Sign out

Before the patient leaves the operating room:

- Nurse reviews items aloud with the team
  - Name of the procedure as recorded
  - That the needle, sponge, and instrument coun
  - That the specimen (if any) is correctly labeled,
  - Whether there are any issues with equipment t
- The surgeon, nurse, and anesthesia professional re

* The checklist is based on the first edition of the WHO Guidelines for Safe Surgery.[15] For the complete checklist, see the Supplementary Appendix.

lorbidity
ion

sitz, Sc.D., Abdel-Hadi S.
atala, M.D., Marie Carmela
ne Safe Surgery Saves Lives

	Pre	Post	P value
Mortality	1.5%	0.8%	0.003
Complications	11%	7%	<0.001

THE CHECKLIST MANIFESTO HOW TO GET THINGS RIGHT · ATUL GAWANDE 2009

Challenges

Faulty memory and attention

Skipping steps

Simple → Complicated → Complex

How are skyscrapers built?

theory + practice + aesthetics

solve for x

materials

design

Master builder → specialists with checklists

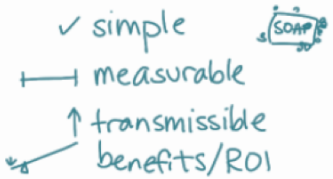
Checklists

Reminders

Verification

Interventions

- ✓ simple
- measurable
- ↑ transmissible benefits/ROI



Good checklists:

precise, efficient, short, easy to use, practical

5-9 items, one page

Antibiotic?

Cleared for Takeoff

nurse's responsibility

scalpel

Do-Confirm vs Read-Do

Do ~ then confirm ✓

Read ~ Do

1. ~ ✓
2. ~ ✓
3. ~ ✓

Test in the real world!

Checklists don't have to be comprehensive.

Good results!

Surgery's big killers

1. infection
2. bleeding
3. unsafe anesthesia
4. the unexpected

→ Stop and talk through it

} checklists

Getting the word out

- simple
- usable
- systematic

Team huddle → ✓ → ✓ → ✓ → Pause points

Becoming a team

Professional:

- selfless
- skilled
- trustworthy
- disciplined

Communication tasks

Who had to talk to whom, by which date, about what

The biggest cause of serious error in this business is a failure of communication.

That's not my problem

Not just ☑ ticking boxes. Embracing a culture of TEAMWORK and DISCIPLINE.

Decentralize

Checklists everywhere

Powwow

Restaurants

Van Halen, no brown M&Ms

$ Investing

Types:
art critic
sponge
Prosecutor
suitor
Terminator
airline captain

Daring vs Disciplined → checklists get the dumb stuff out of the way

Sketched by Sacha Chua (sketchedbooks.com) 2014-12-31

ATO: *What Is It?*

"Pause for Safety"

Structured moment to consider the antibiotic plan

- **Right diagnosis?**
- **Right drug?**
- **Right dose / route / interval?**
- **Right duration?**

UWTASP
tele-antimicrobial stewardship program

ATO: *What Is It?*

"Pause for Safety"

Structured moment to consider the antibiotic plan

- **Stop…**
- **Think…**
- **Discuss…**
- **Document.**

UWTASP
tele-antimicrobial stewardship program

Checklists: *Simple is Best*

Checklist Manifesto
Last Update: 2015-07-04

@remouherek 2015

Keep it simple, to the point, practical
Wording simple, exact
1 page, free from clutter
Sans-serif eg Helvetica to improve readability
Large font size
5-9 items max (killer items only)
Do-confirm checklist = do from memory, use checklist to check afterwards
Read-do checklist = to be read and performed simultaneously)
TEST in real-life, then improve
Checkists are NOT comprehensive how-to guides. If something is never omitted, remove it from the checklist!
Check WHO safety checklist and Boeing checklists for inspiration
A checklist is only an AID. If it does not aid, it's not right.

Joint Commission

Requirement

Official Publication of Joint Commission Requirements

New Antimicrobial Stewardship Standard

APPLICABLE TO HOSPITALS AND CRITICAL ACCESS HOSPITALS

Effective January 1, 2017

Medication Management (MM)

Standard MM.09.01.01

The [critical access] hospital has an antimicrobial stewardship program based on current scientific literature.

Elements of Performance for MM.09.01.01

1. Leaders establish antimicrobial stewardship as an organizational priority. (*See also* LD.01.03.01, EP 5)

   Note: *Examples of leadership commitment to an antimicrobial stewardship program are as follows:*

   - *Accountability documents*
   - *Budget plans*
   - *Infection prevention plans*
   - *Performance improvement plans*
   - *Strategic plans*
   - *Using the electronic health record to collect antimicrobial stewardship data*

2. The [critical access] hospital educates staff and licensed independent practitioners involved in antimicrobial ordering, dispensing, administration, and monitoring about antimicrobial resistance and antimicrobial stewardship practices. Education occurs upon hire or granting of initial privileges and periodically thereafter, based on organizational need.

3. The [critical access] hospital educates patients, and their families as needed, regarding the appropriate use of antimicrobial medications, including antibiotics. (For more information on patient education, refer to Stan-

Continued on page 4

UWTASP
tele-antimicrobial stewardship program

New Antimicrobial Stewardship Standard (continued)

dard PC.02.03.01)

Note: *An example of an educational tool that can be used for patients and families includes the Centers for Disease Control and Prevention's Get Smart document, "Viruses or Bacteria—What's got you sick? at http://www.cdc.gov/getsmart/community/downloads/getsmart-chart.pdf.*

4. The [critical access] hospital has an antimicrobial stewardship multidisciplinary team that includes the following members, when available in the setting:
   - Infectious disease physician
   - Infection preventionist(s)
   - Pharmacist(s)
   - Practitioner

   Note 1: *Part-time or consultant staff are acceptable as members of the antimicrobial stewardship multidisciplinary team.*

   Note 2: *Telehealth staff are acceptable as members of the antimicrobial stewardship multidisciplinary team.*
5. Ⓓ The [critical access] hospital's antimicrobial stewardship program includes the following core elements:
   - Leadership commitment: Dedicating necessary human, financial, and information technology resources.
   - Accountability: Appointing a single leader respon-

The Joint Commission recommends that organizations use this document when designing their antimicrobial stewardship program.

6. Ⓓ The [critical access] hospital's antimicrobial stewardship program uses organization-approved multidisciplinary protocols (for example, policies and procedures).

   Note: *Examples of protocols are as follows:*
   - *Antibiotic Formulary Restrictions*
   - *Assessment of Appropriateness of Antibiotics for Community-Acquired Pneumonia*
   - *Assessment of Appropriateness of Antibiotics for Skin and Soft Tissue Infections*
   - *Assessment of Appropriateness of Antibiotics for Urinary Tract Infections*
   - *Care of the Patient with Clostridium difficile (c.-diff)*
   - *Guidelines for Antimicrobial Use in Adults*
   - *Guidelines for Antimicrobial Use in Pediatrics*
   - *Plan for Parenteral to Oral Antibiotic Conversion*
   - *Preauthorization Requirements for Specific Antimicrobials*
   - *Use of Prophylactic Antibiotics*
7. Ⓓ The [critical access] hospital collects, analyzes, and reports data on its antimicrobial stewardship program.

   Note: *Examples of topics to collect and analyze data on may include evaluation of the antimicrobial steward-*

- Action: Implementing recommended actions, such as systemic evaluation of ongoing treatment need, after a set period of initial treatment (for example, "antibiotic time out" after 48 hours).

- Education: Educating practitioners, staff, and patients on the antimicrobial program, which may include information about resistance and optimal prescribing. (*See also* IC.02.01.01, EP 1 and NPSG.07.03.01, EP 5)

Note: *These core elements were cited from the Centers for Disease Control and Prevention's Core Elements of Hospital Antibiotic Stewardship Programs (http://www.cdc.gov/getsmart/healthcare/pdfs/core-elements.pdf).*

Elements of Performance for MM.09.01.01

1. Leaders establish antimicrobial stewardship as an organizational priority. (*See also* LD.01.03.01, EP 5)

   Note: *Examples of leadership commitment to an antimicrobial stewardship program are as follows:*
   - *Accountability documents*

Continued on page 8

UWTASP
tele-antimicrobial stewardship program

Hosp Pharm 2015;50(11):1011–1024

www.hospital-pharmacy.com
doi: 10.1310/hpj5011-1011

Original Article

Taking an Antibiotic Time-out: Utilization and Usability of a Self-Stewardship Time-out Program for Renewal of Vancomycin and Piperacillin-Tazobactam

Christopher J. Graber, MD, MPH[,†]; Makoto M. Jones, MD, MSc[‡,§]; Peter A. Glassman, MBBS, MSc[*,†]; Charlene Weir, RN, PhD[‡,¶]; Jorie Butler, PhD[‡,§,¶]; Kevin Nechodom[‡,¶]; Chad L. Kay, PharmD[**]; Amy E. Furman, PharmD[**]; Thuong T. Tran, Pharm[*]; Christopher Foltz, MD[*]; Lori A. Pollack, MD, MPH[††]; Matthew H. Samore, MD[‡,¶]; and Matthew Bidwell Goetz, MD[*,†]*

Chris Graber,
MD, MPH,
FIDSA

UWTASP
tele-antimicrobial stewardship program

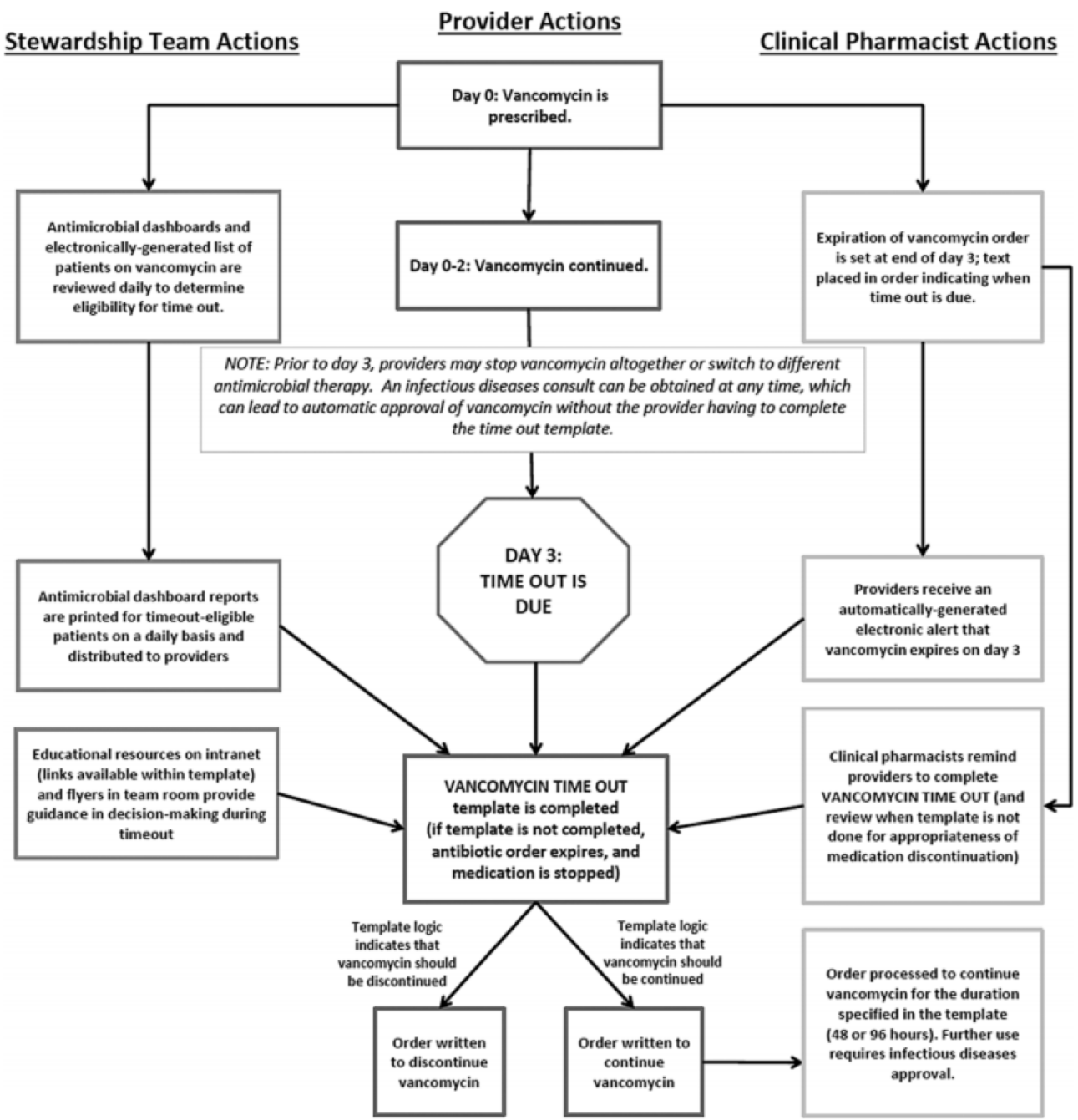


Figure 1. Antibiotic time-out workflow schematic. Vancomycin is used as an example; piperacillin-tazobactam time-out workflow is identical.

Chris Graber, MD, MPH, FIDSA

UWTASP
tele-antimicrobial stewardship program

Hosp Pharm 2015;50(11):1011–1024

www.hospital-pharmacy.com
doi: 10.1310/hpj5011-1011

Table 2. Review of appropriateness of antibiotic continuation

	Before time-out	Time-out	*P*
Vancomycin			
Antibiotic courses eligible for renewal	199	145	
Inappropriate continuations	0 (0%)	7 (5%)	.002
Courses discontinued (through day 5)	96 (48%)	93 (64%)	.004
Piperacillin-tazobactam			
Antibiotic courses eligible for renewal	93	105	
Inappropriate continuations	2 (2%)	9 (9%)	.06
Courses discontinued (through day 5)	58 (62%)	70 (67%)	.55

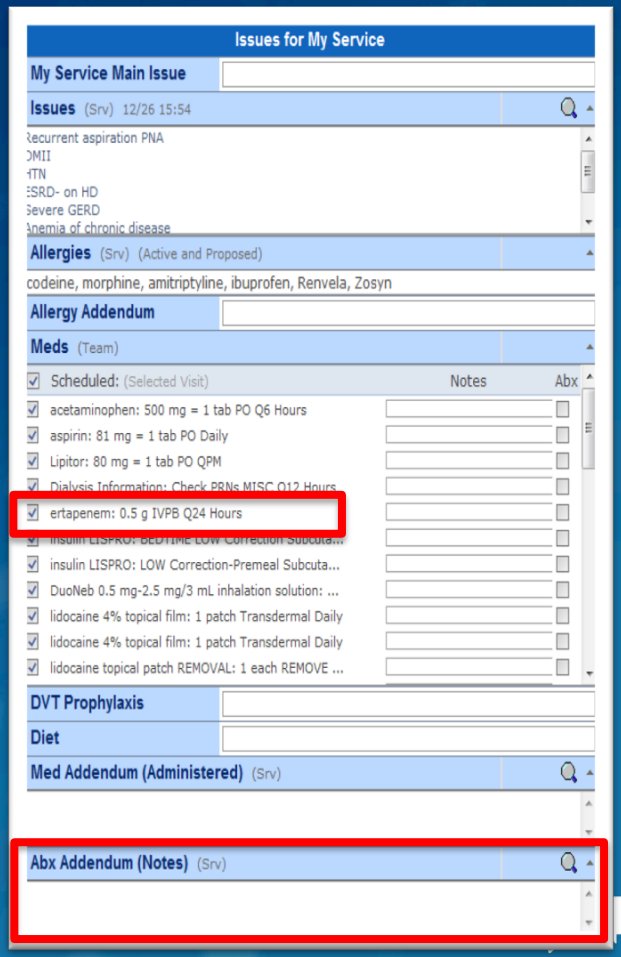
Chris Graber, MD, MPH, FIDSA

UWTASP
tele-antimicrobial stewardship program

UW Plan: *In Process*

1. An electronic alert will trigger 48 hrs after starting antibiotics.

Happen within existing team mgmt system ("CORES")



UWTASP
tele-antimicrobial stewardship program

UW Plan: *In Process*

2. On rounds, a team member responds by saying "We are due for a 48-hour antibiotic time out. Is the current coverage appropriate?" The situation is discussed.

UW Plan: *In Process*

3. The team's decision is then recorded in the daily progress note using a "dotphrase"

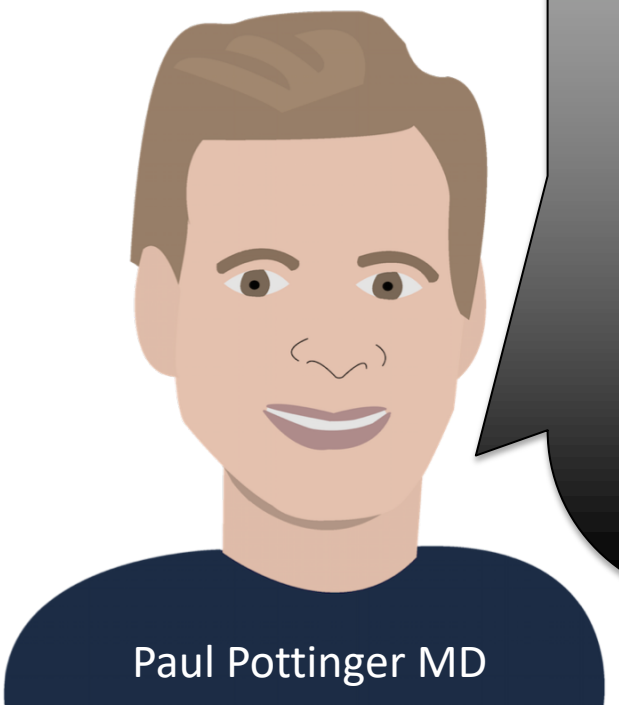
48 Hour Antimicrobial Time Out: This patient's clinical status was reviewed, and we have decided the following:

[ ] Antimicrobials no longer indicated, they will be discontinued now.

[ ] Antimicrobials indicated as currently written, plan to stop on:

[ ] Antimicrobials changed as follows, including planned stop date:

Conclusions



ATO worth considering

- ✓ Cheap
- ✓ Relatively low activation energy
- ✓ Evidence-base growing
- ✓ Meets TJC expectations…
- ✓ Multiple models...
- ✓ Your needs may differ
- ✓ What do you think?