

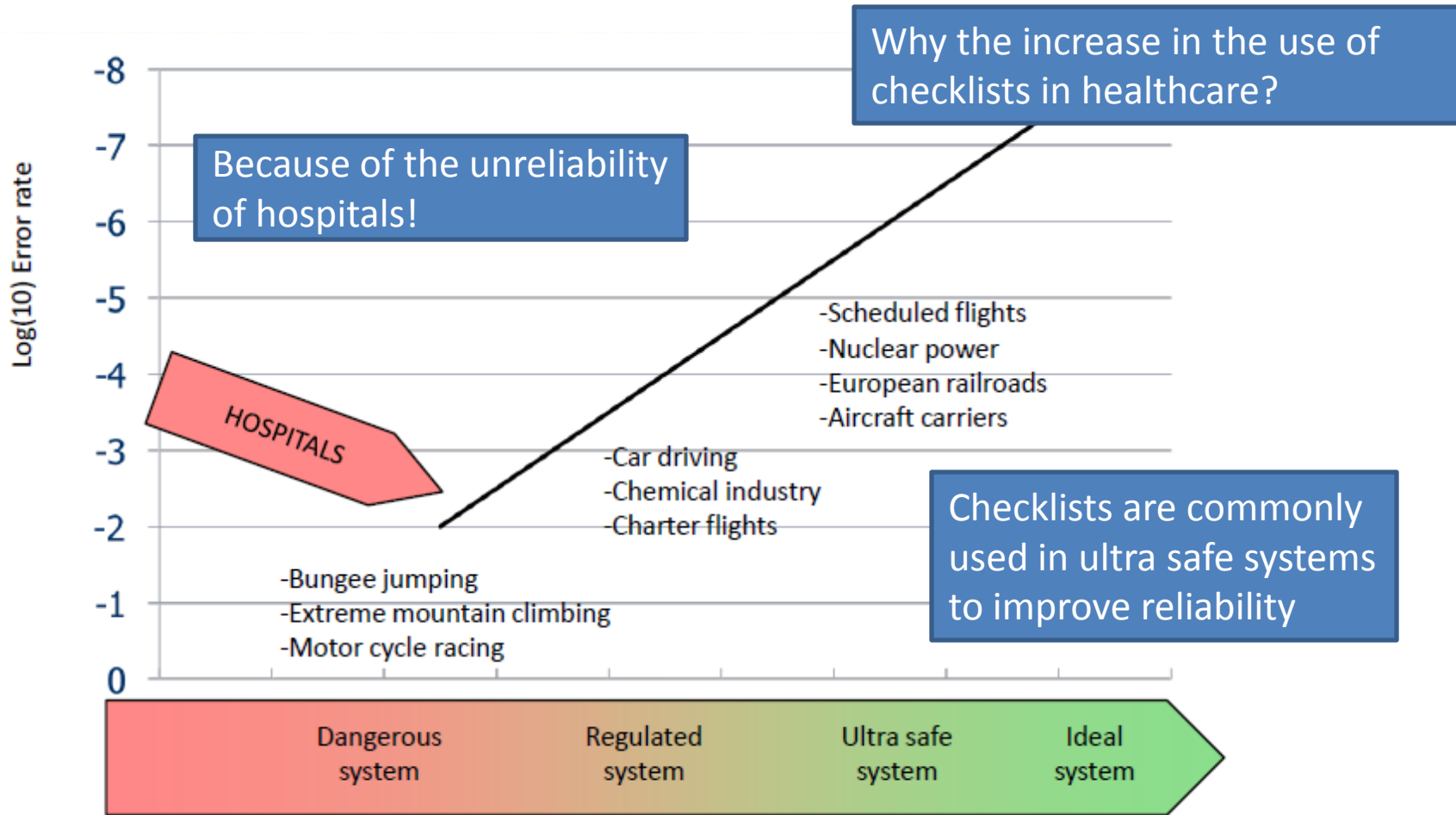
Use of checklists in IPC

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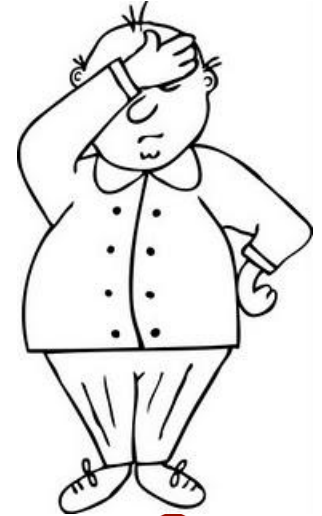
(Un)reliability of Hospitals



(Gaffney FA. Seminar material: Patient Safety: From the Executive Suite To the Bedside! Karolinska Institute 30 January, 2009)

Checklists: “aide-memoire”

- Remind us of the minimum necessary steps
- Make these steps explicit
- Offer the possibility to verify a process
- Instil a discipline of higher performance
- Tell you how to do something
- Replace knowledgeable and competent practitioners



Checklists in Aviation



Piper Tomahawk – PA-38-112

Preflight Inspection

Cockpit

1. Control LockREMOVE
2. Ignition OFF
3. Master SwitchON
4. Fuel GaugesCHECK
5. Alternator Warning LightCHECK
6. Master Switch OFF
7. Primary Flight ControlsCHECK
8. FlapsCHECK
9. Static DrainDRAINED
10. Windows CLEAN

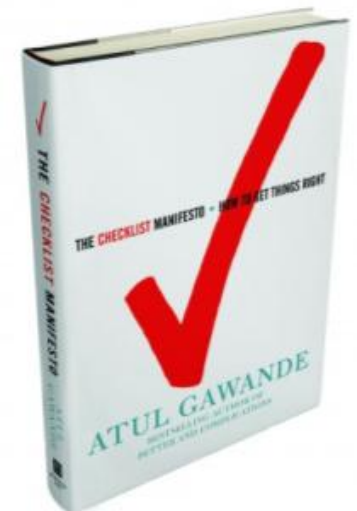
Ground Check

1. BrakesSET
2. Throttle 1800 RPM
3. Magnetos175 Max/ 50 Diff.
4. Vacuum 5.0" Hg \pm .1
5. Oil TempCHECK
6. Oil PressureCHECK
7. Carburetor HeatCHECK
8. ThrottleRETARD

Checklists are widely used in aviation. Pilots follow a disciplined and systematic process for checking. The checklist serves as a memory aid - it does not tell them how to do something.

“What you find, when the checklist is **well made**, is that it **gets the dumb stuff out of the way** so you can focus on the hard stuff”

The emphasis in this quote should be on the phrase “well made”. Poorly made checklists can overburden staff, complicate tasks and reduce efficiency instead of improving reliability.



Checklists in Healthcare

Purpose

Clinical review: Checklists – translating evidence into practice

Bradford D Winters¹, Ayse P Gurses², Harold Lehmann³, J Bryan Sexton^{2,4},
Carlyle Jai Rampersad⁵ and Peter J Pronovost^{2,4}

Critical Care 2009, 13:210

Checklists in healthcare (HC) have mostly been limited to equipment checks and algorithms (e.g. resuscitation). There is scope for greater use of checklists in HC, *but*:

- The science of developing checklists in health care is new

We don't know...

When are checklists most useful?

How many checklists are too many?

When are we overloading the checklist users?



Checklists in IPC

Medline search “use of checklists in IPC”:

- Rebound in ventilator-associated pneumonia rates during a prevention checklist washout period [BMJ Qual Saf. 2011 Sep; 20\(9\): 811-7](#)
- Use of a clinical practice guidelines checklist to reduce intravenous catheter-related infections [Nutr Clin Pract. 2011 Jun; 26\(3\): 346-8](#)
- Statewide NICU central line-associated bloodstream infection rates decline after bundles and checklists [Paediatrics. 2011 Mar; 127\(3\): 436-44](#)
- Infection prevention checklist to improve culture and reduce central line-associated bloodstream infections
[Jt Comm J Qual Patient Saf. 2010 Dec; 36\(12\): 571-5](#)
- Prevention of central line-associated bloodstream infections: a journey towards eliminating preventable harm
[Curr Infect Dis Rep. 2011 Aug; 13\(4\): 343-9](#)

Large emphasis on CRBSI's and VAP; but if you read between the lines, CL's are being used to build a safety culture which includes eliminating preventable harm.

The Central Line Insertion Checklist

An Intervention to Decrease Catheter-Related Bloodstream Infections in the ICU

Peter Pronovost, M.D., Ph.D., Dale Needham, M.D., Ph.D., Sean Berenholtz, M.D., David Sinopoli, M.P.H., M.B.A., Haitao Chu, M.D., Ph.D., Sara Cosgrove, M.D., Bryan Sexton, Ph.D., Robert Hyzy, M.D., Robert Welsh, M.D., Gary Roth, M.D., Joseph Bander, M.D., John Kepros, M.D., and Christine Goeschel, R.N., M.P.A.

NEJM. 2006. 355(26):2725-32

Mean rate per 1,000 catheter-days decreased from **7.7** at baseline to **1.4** at 16 to 18 months of follow-up ($P < 0.002$)

The central line insertion checklist is an example of a *static sequential checklist with verification* (suitable for when 2 operators are involved). This follows a challenge/response format, which acts as a reminder of the best practice interventions needed with central line insertion.



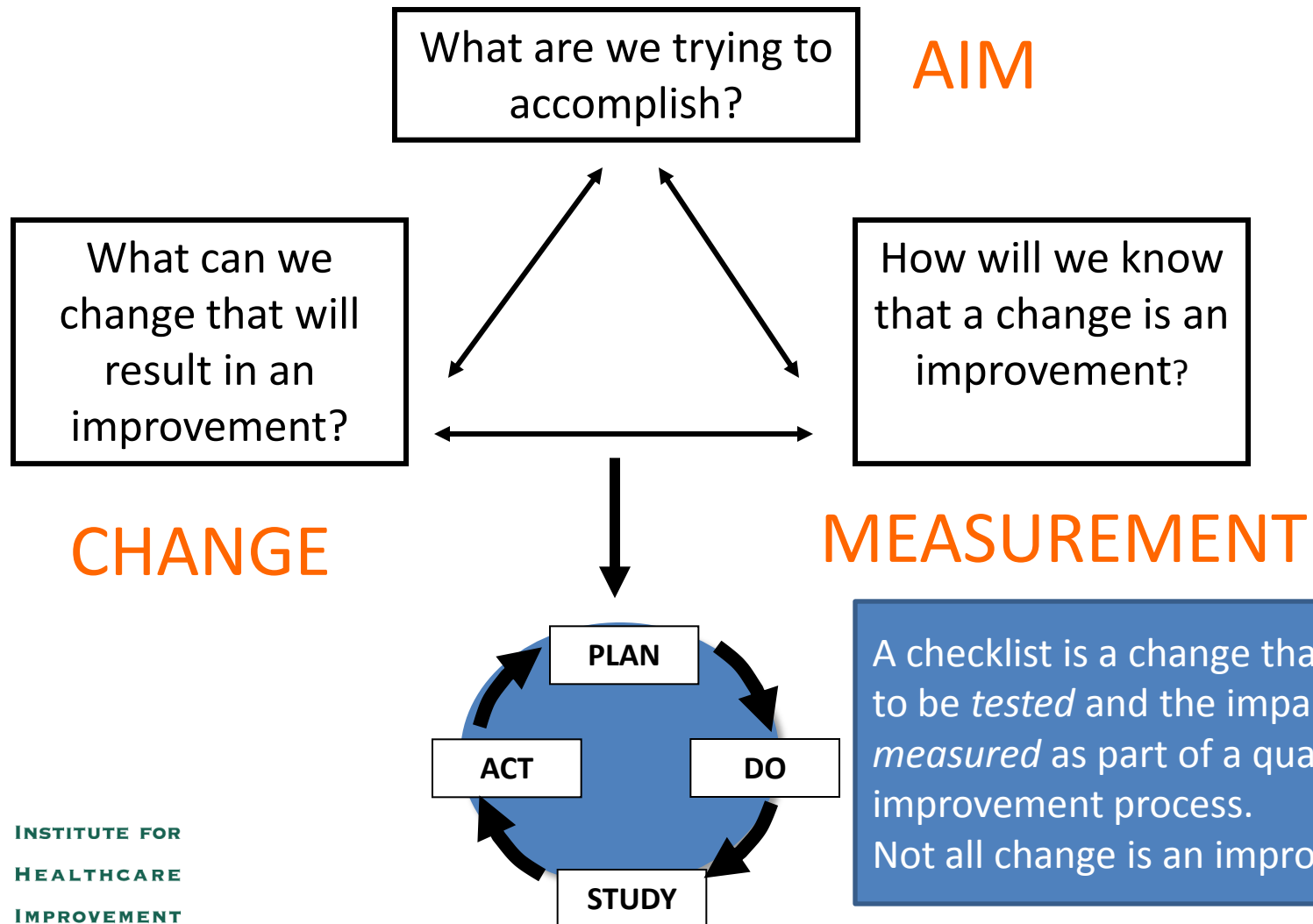
The Urine Catheter Insertion Checklist

- The normal workflow does not usually include a second person (for challenge/response)
- For this type of checklist to work, you would need to alter the process (to include a second person) to do this verification

Does an insertion checklist for urine catheters work as well as the insertion checklist for central lines?



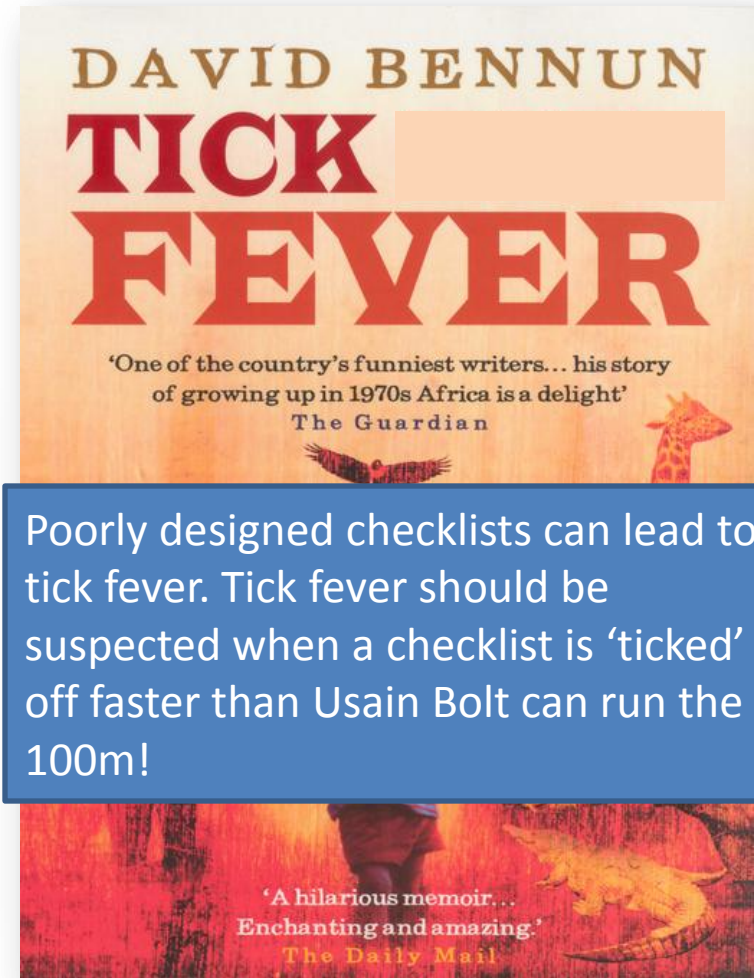
When do checklists work?



Checklists are not *ticklists*

Tick-borne parasite infecting blood supply: CDC

(Reuters) - A tick-borne infection known as Babesiosis, which can cause severe disease and even death, is becoming a growing threat to the U.S. blood supply, government researchers said on Monday.



Poorly designed checklists can lead to tick fever. Tick fever should be suspected when a checklist is 'ticked' off faster than Usain Bolt can run the 100m!

Developing a Checklist

- Have a clear outcome/aim
- Form a multidisciplinary team
- Review the existing literature/evidence
- Understand the needs and work of users (system barriers)
- Use an iterative approach (test, test and re-test)

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Critical Care 2009, **13**:210

Take home points

- Checklists should be short and simple
- Checklist development needs a team approach and numerous iterations
- Checklists are not ticklists
- The benefit of a specific checklist must be *proven* and not assumed

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