

Confronting the Epidemic of MDRO's

Health Watch USAsm
Forum on Antimicrobial Resistance
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This presentation is the express opinions of
Health Watch USA and the presenter.



Strong Research In Support of Surveillance

Union of Concerned Scientists:
“Downplaying evidence and playing up false uncertainty”



Strong Research In Support of Surveillance

Only two major studies with arguably poor designs. STAR*ICU and the JAMA-Swiss Study found Surveillance did not work.(1)

Compared to numerous before & after studies (1) Plus, well controlled studies from Northwestern University (2), Geneva, Switzerland (3) and Sevilla, Spain (4) which found surveillance to be vital in the prevention bundle.



1. Kavanagh KT, et al. PMID 24100502
2. Robicsek A, et al. PMID 18347349
3. Lee AS, et al. PMID 24056477
4. Rodríguez-Baño J, et al. PMID 20524852

Research for The Effectiveness of Chlorhexidine Is Controversial



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Allegations of Industrial Influence

- Questions of Conflict-of-Interest and Industrial Influence first arose around a major study published in the NEJM (2010) regarding the effectiveness of a chlorhexidine-Alcohol antiseptic. (1,2)
- This study was part of a \$40 million Dept. of Justice Settlement with CareFusion and an alleged 11 million dollar kickback. (3)

1. Brian J. Influential patient safety board cut ties with doc before CareFusion kickbacks case. Mass Device. Jan. 22, 2014.
2. Allen M. Hidden Financial Ties Rattle Top Health Quality Group. Propublica. Jan. 28, 2014
3. Department of Justice. CareFusion to Pay the Government \$40.1 Million to Resolve Allegations That Include More Than \$11 Million in Kickbacks to One Doctor. Jan. 9, 2014.



Change in Metrics Raise Concerns

Changes to NCT00980980 on 2012_06_19

Type of info changed: Protocol, Misc.

	← Before (Updated 2011_10_24)	After (Updated 2012_06_19) →
1	+ <clinical_study>	+ <clinical_study>
2	<measure>	<measure>
3	Nosocomial MRSA Bloodstream and Urinary Cultures	MRSA Bloodstream Infection
4	</measure>	</measure>
5	<measure>	<measure>
6	Routinely reported central line associated blood stream infections (CLABSI)-	ICU-attributable All-pathogen Bloodstream Infection
7	</measure>	</measure>
8	<time_frame>	<time_frame>
9	18 months	18-months
10	</time_frame>	</time_frame>
11	<last_release_date>	<last_release_date>
12	2011-10-24	2012-06-19
13	</last_release_date>	+ </last_release_date>
14	</clinical_study>	</clinical_study>



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From www.clinicaltrials.gov

Effectiveness of CHX

- Maiwald and Chan could find “no evidence that chlorhexidine without alcohol was effective” and that many trials compared chlorhexidine plus alcohol (two antiseptics) to povidone-iodine alone (one antiseptic) with some trials then attributing the clinical efficiency to chlorhexidine alone.

Maiwald M, Chan ES. Pitfalls in evidence assessment: the case of chlorhexidine and alcohol in skin antiseptics. *J Antimicrob Chemother.* 2014; **69**(8):2017-21. doi: 10.1093/jac/dku121. Epub 2014 Apr 28.

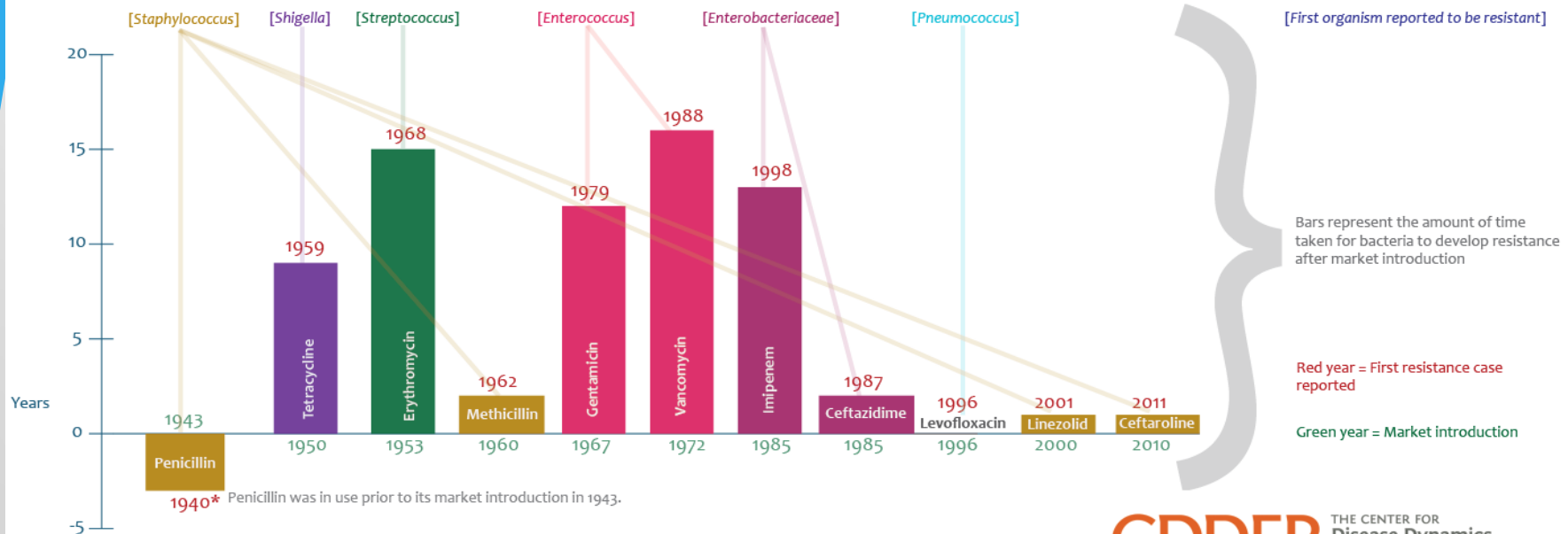


Bacterial Resistance Concerns



Daily Chlorhexidine Usage Has a Risk of Worsening Bacterial Resistance

First reported cases of bacterial resistance against key antibiotics



Data source: Antibiotic Resistance Threats in the United States, 2013. US Centers for Disease Control and Prevention (CDC).



CDDEP THE CENTER FOR Disease Dynamics, Economics & Policy
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Multiple Studies Are Finding Reduced Susceptibility to Chlorhexidine

Organisms causing CLABSIs were more likely to have reduced chlorhexidine susceptibility in patients bathed daily with chlorhexidine,

Suwantarat N, et al. High prevalence of reduced chlorhexidine susceptibility in organisms causing central line-associated bloodstream infections. *Infect Control Hosp Epidemiol.* 2014 Sep;35(9):1183-6.

MRSA chlorhexidine resistance is an independent factor predictive of decolonization failure.

Lee AS, et al. Impact of combined low-level mupirocin and genotypic chlorhexidine resistance on persistent methicillin-resistant *Staphylococcus aureus* carriage after decolonization therapy: a case-control study. *Clin Infect Dis.* 2011 Jun 15;52(12):1422-30.



Research Indicates Daily Chlorhexidine Has a Risk of Worsening Bacterial Resistance

- Because Chlorhexidine is used externally it affects the entire microbiome of the facility.
- The extremely drug resistant strain of *Klebsiella* can develop reduced susceptibility to Chlorhexidine.

Naparstek L, et al. Reduced susceptibility to chlorhexidine among extremely-drug resistant strains of *Klebsiella pneumoniae*. *J. Hosp. Infect.* 2012. 81:15–19.



Research Integrity

- Metrics are not changed after trial initiation.
- All data is reported.
- Compare new therapy to existing current therapy.
- Fair comparison, not two agents against one.
- Proper intervention is given to patients with known carriers being treated.
- If a test is ordered, results are readily accessible
 - Not five days delayed.
- Conflicts of Interest are declared.

