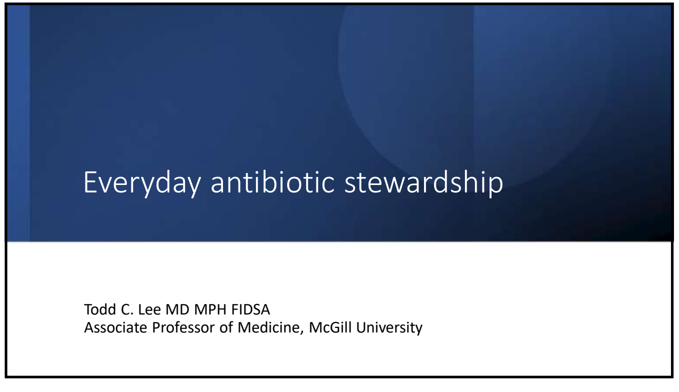

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1

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The following presentation represents my views at the time of the presentation. This information is meant for educational purposes, and should not replace other sources of information or your medical judgment.

I will be sharing personal experiences, reflections, or opinions during this presentation.

Learning Objectives:

1. Determine ideal treatment duration for common infections, applying emerging evidence.
2. Apply principles of antibiotic stewardship in everyday practice.

2

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Conflict Disclosures

Definition: A Conflict of Interest may occur in situations where the personal and professional interests of individuals may have actual, potential or apparent influence over their judgment and actions.

"I have the following conflicts to declare:"

	Company/Organization	Details
Advisory Board or equivalent		
Speakers bureau member		
Payment from a commercial organization. (including gifts or other consideration or 'in kind' compensation)		
Grant(s) or an honorarium	FRQS, CIHR, MI4	Research salary support, Operating grants
Patent for a product referred to or marketed by a commercial organization.	MedSafer Corp.	Software providing medical reference for identifying deprescribing opportunities
Investments in a pharmaceutical organization, medical devices company or communications firm.		
Participating or participated in a clinical trial	Numerous	

3

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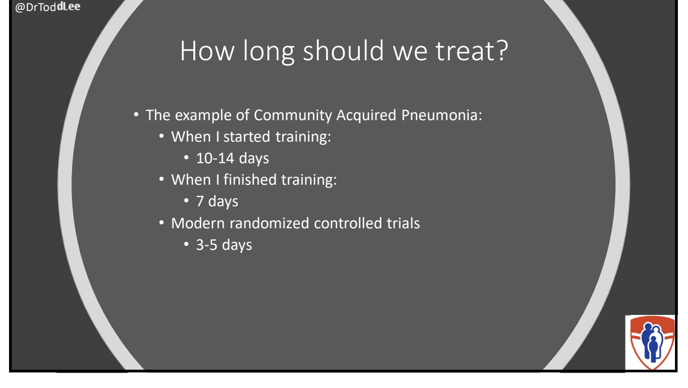
Some of the drugs, devices, or treatment modalities mentioned in this presentation are:

Antibiotics

*I **might** make therapeutic recommendations for medications that have not received regulatory approval or for their use in ways which do not match the Canadian product monographs.*

4



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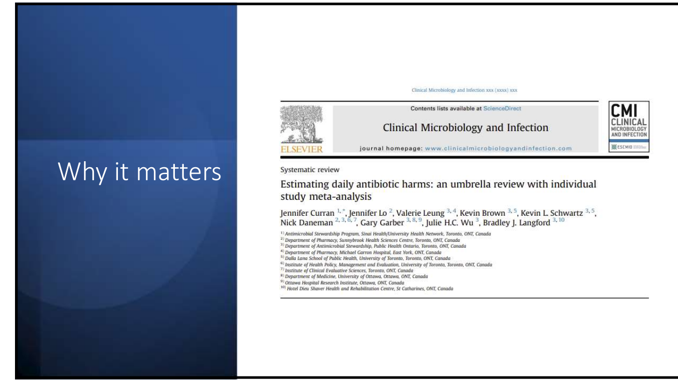

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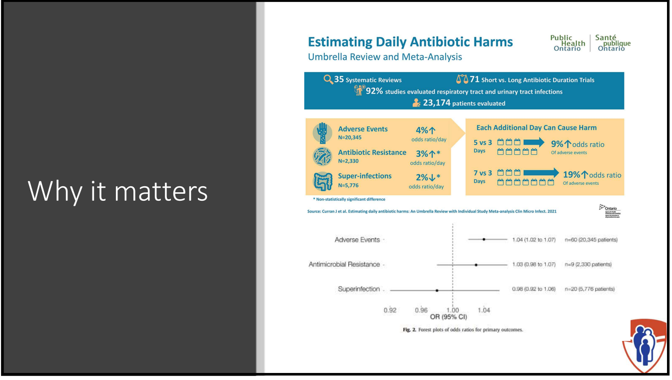

7

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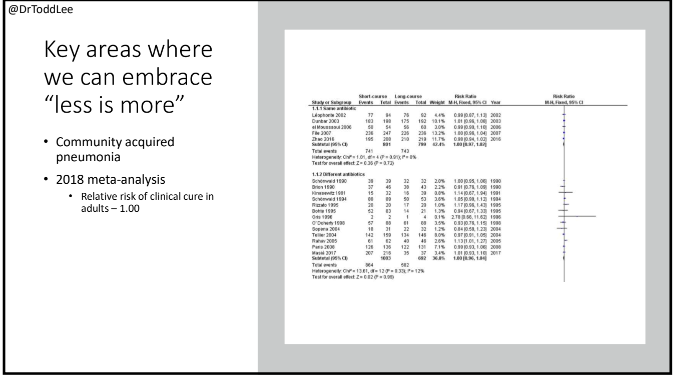
Key areas where we can embrace "less is more"

- Community acquired pneumonia
  - There are 15 randomized controlled trials which have compared shorter durations of therapy to longer, including in hospitalized patients
  - The uniform conclusion is that less therapy is non-inferior to more therapy for clinical outcomes [but has fewer side effects]
  - If the patient is afebrile and off oxygen by day 3-5, the antibiotics can stop

8



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Key areas where we can embrace “less is more”

- Community acquired pneumonia
- 2018 meta-analysis
  - Relative risk of clinical cure in adults – 1.00

Study or Subgroup	Short-course Events	Short-course Total	Long-course Events	Long-course Total	Weight	Risk Ratio M-H, Fixed, 95% CI	Year
1.1.1 Same antibiotic							
Léophonte 2002	77	94	76	92	4.4%	0.99 [0.87, 1.13]	2002
Dunbar 2003	183	198	175	192	10.1%	1.01 [0.96, 1.08]	2003
el Moussaoui 2006	50	54	56	60	3.0%	0.99 [0.90, 1.10]	2006
File 2007	236	247	226	236	13.2%	1.00 [0.96, 1.04]	2007
Zhao 2016	195	208	210	219	11.7%	0.98 [0.94, 1.02]	2016
Subtotal (95% CI)		**801**		**799**	**42.4%**	**1.00 [0.97, 1.02]**	
Total events	741		743				
Heterogeneity: $Chi^2 = 1.01$, $df = 4$ ($P = 0.91$); $I^2 = 0\%$							
Test for overall effect: $Z = 0.36$ ($P = 0.72$)							
1.1.2 Different antibiotics							
Schönwald 1990	39	39	32	32	2.0%	1.00 [0.95, 1.06]	1990
Brion 1990	37	46	38	43	2.2%	0.91 [0.76, 1.09]	1990
Kinasewitz 1991	15	32	16	39	0.8%	1.14 [0.67, 1.94]	1991
Schönwald 1994	88	89	50	53	3.6%	1.05 [0.98, 1.12]	1994
Rizzato 1995	20	20	17	20	1.0%	1.17 [0.96, 1.43]	1995
Bohte 1995	52	83	14	21	1.3%	0.94 [0.67, 1.33]	1995
Gris 1996	2	2	1	4	0.1%	2.78 [0.66, 11.62]	1996
O' Doherty 1998	57	88	61	88	3.5%	0.93 [0.76, 1.15]	1998
Sopena 2004	18	31	22	32	1.2%	0.84 [0.58, 1.23]	2004
Tellier 2004	142	159	134	146	8.0%	0.97 [0.91, 1.05]	2004
Rahav 2005	61	62	40	46	2.6%	1.13 [1.01, 1.27]	2005
Paris 2008	126	136	122	131	7.1%	0.99 [0.93, 1.06]	2008
Masiá 2017	207	216	35	37	3.4%	1.01 [0.93, 1.10]	2017
Subtotal (95% CI)		**1003**		**692**	**36.8%**	**1.00 [0.96, 1.04]**	
Total events	864		582				
Heterogeneity: $Chi^2 = 13.61$, $df = 12$ ($P = 0.33$); $I^2 = 12\%$							
Test for overall effect: $Z = 0.02$ ($P = 0.99$)							

9

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Key areas where we can embrace “less is more”

- UTI
  - Step one:
    - Is this really a urinary tract infection, or is this asymptomatic bacteriuria or a contaminated specimen?

10

11

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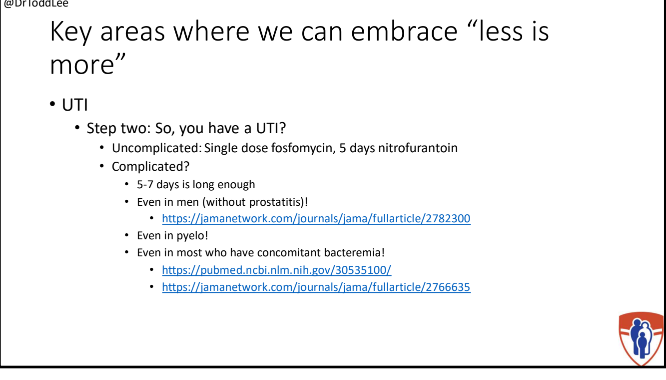
Key areas where we can embrace “less is more”

- UTI
  - “Symptom free pee” exceptions
    - Pregnancy (someone should do the RCT)
    - Pre-invasive urological procedure where blood and urine will mix
    - 1st 1-2 months post renal transplant

12



13

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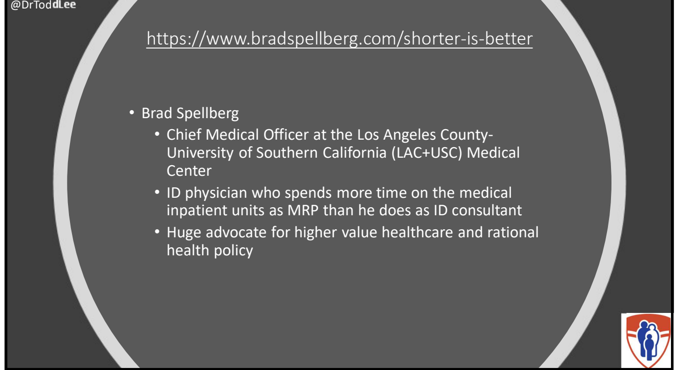
Key areas where we can embrace "less is more"

- Cellulitis
  - 6-7 days seems to be as good as 10-14 in most patients

14



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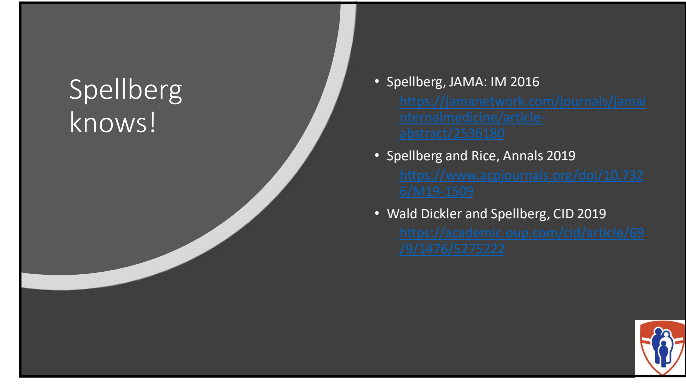
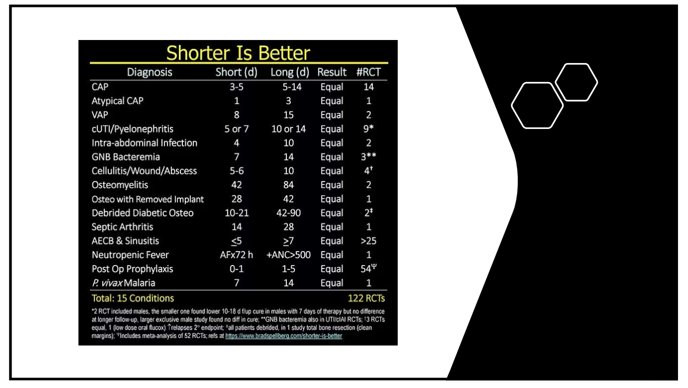


16

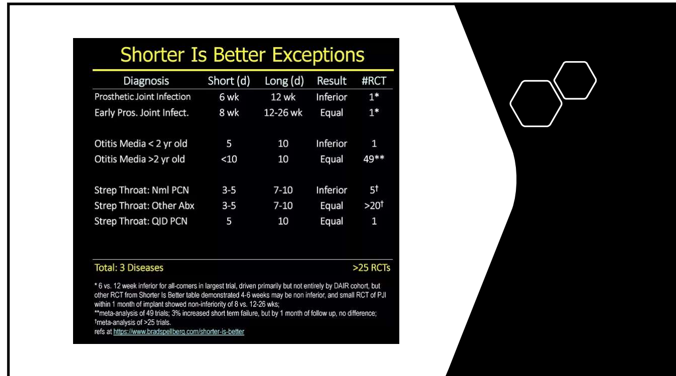


Shorter Is Better

Diagnosis	Short (d)	Long (d)	Result	#RCT
CAP	3-5	5-14	Equal	14
Atypical CAP	1	3	Equal	1
VAP	8	15	Equal	2
cUTI/Pyelonephritis	5 or 7	10 or 14	Equal	9*
Intra-abdominal Infection	4	10	Equal	2
GNB Bacteremia	7	14	Equal	3**
Cellulitis/Wound/Abscess	5-6	10	Equal	4†
Osteomyelitis	42	84	Equal	2
Osteo with Removed Implant	28	42	Equal	1
Debrided Diabetic Osteo	10-21	42-90	Equal	2‡
Septic Arthritis	14	28	Equal	1
AECB & Sinusitis	≤5	≥7	Equal	>25
Neutropenic Fever	AFx72 h	+ANC>500	Equal	1
Post Op Prophylaxis	0-1	1-5	Equal	54Ψ
P. vivax Malaria	7	14	Equal	1
Total: 15 Conditions				122 RCTs

*2 RCT included males, the smaller one found lower 10-18 d f/up cure in males with 7 days of therapy but no difference at longer follow-up, larger exclusive male study found no diff in cure; **GNB bacteremia also in UTI/cIAI RCTs; †3 RCTs equal, 1 (low dose oral flucox) ↑relapses 2° endpoint; ‡all patients debrided, in 1 study total bone resection (clean margins); ΨIncludes meta-analysis of 52 RCTs; refs at https://www.bradspellberg.com/shorter-is-better

17



Shorter Is Better Exceptions

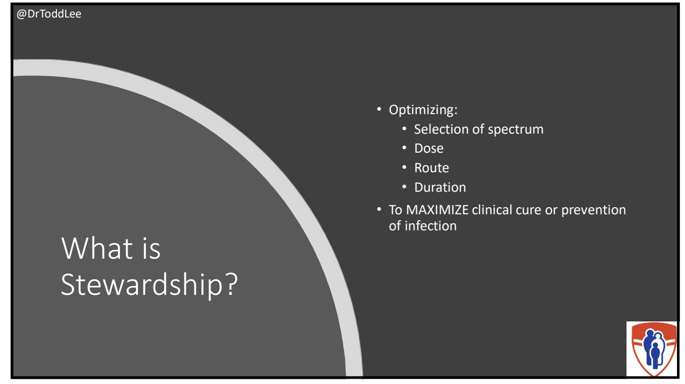
Diagnosis	Short (d)	Long (d)	Result	#RCT
Prosthetic Joint Infection	6 wk	12 wk	Inferior	1*
Early Pros. Joint Infect.	8 wk	12-26 wk	Equal	1*
Otitis Media < 2 yr old	5	10	Inferior	1
Otitis Media >2 yr old	<10	10	Equal	49**
Strep Throat: Nml PCN	3-5	7-10	Inferior	5†
Strep Throat: Other Abx	3-5	7-10	Equal	>20†
Strep Throat: QID PCN	5	10	Equal	1
Total: 3 Diseases				>25 RCTs

* 6 vs. 12 week inferior for all-comers in largest trial, driven primarily but not entirely by DAIR cohort, but other RCT from Shorter Is Better table demonstrated 4-6 weeks may be non inferior, and small RCT of PJI within 1 month of implant showed non-inferiority of 8 vs. 12-26 wks;
**meta-analysis of 49 trials; 3% increased short term failure, but by 1 month of follow up, no difference;
†meta-analysis of >25 trials.
refs at https://www.bradspellberg.com/shorter-is-better

18

19

20



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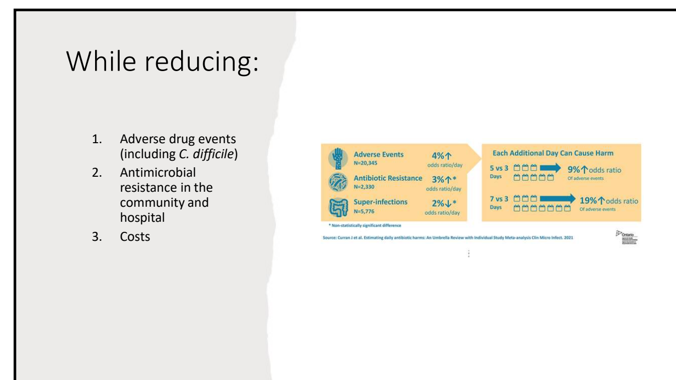

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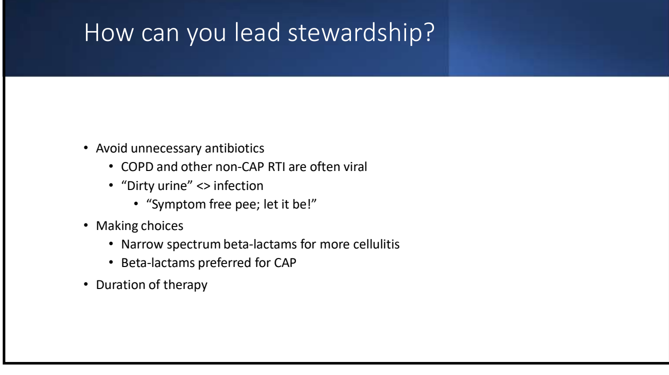
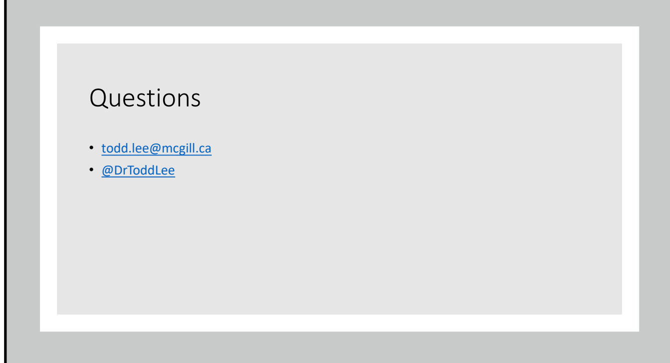


23



24