

Do we have antibiotics in 20 years?

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Frank Zappa- Why Does It Hurt When I Pee.mp4

Gonorrhoea is not a serious disease, but...

J Antimicrob Chemother 2012; **67**: 2059–2061.
doi:10.1093/jac/dks188 Advance Access publication 17 May 2012

**Antimicrobial
Chemotherapy**

**The ticking time bomb: escalating antibiotic resistance in
Neisseria gonorrhoeae is a public health disaster in waiting**

David M. Whiley^{1,2*}, Namraj Goire^{1,2}, Monica M. Lahra³, Basil Donovan^{4,5}, Athena E. Limnios³, Michael D. Nissen^{1,2,6}
and Theo P. Sloots^{1,2,6}

Take home message

- All antibiotic use lead to resistance (AMR)
- Resistance will lead to a continous financial crisis
- The economic burden will be 3.5-5.6% of the worlds economy
- We can reverse AMR

● 1586 tilfeller av pneumokokk-pneumoni 1929-35 i Boston (Tilghman RC, Finland M. Arch Intern Med, 1937)

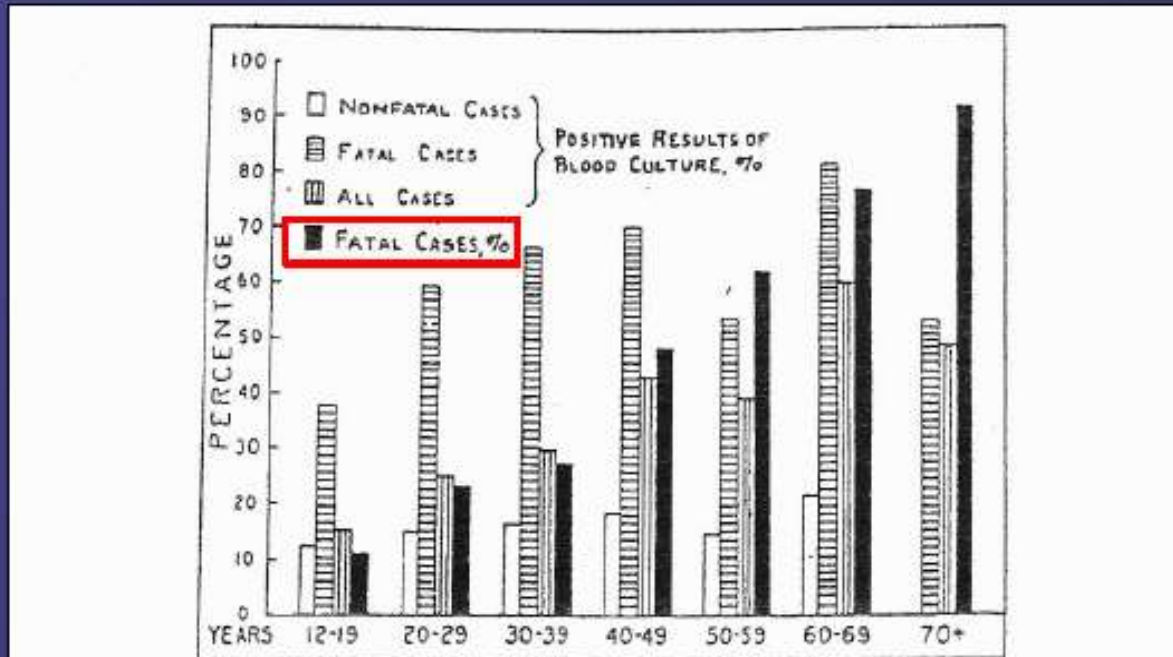
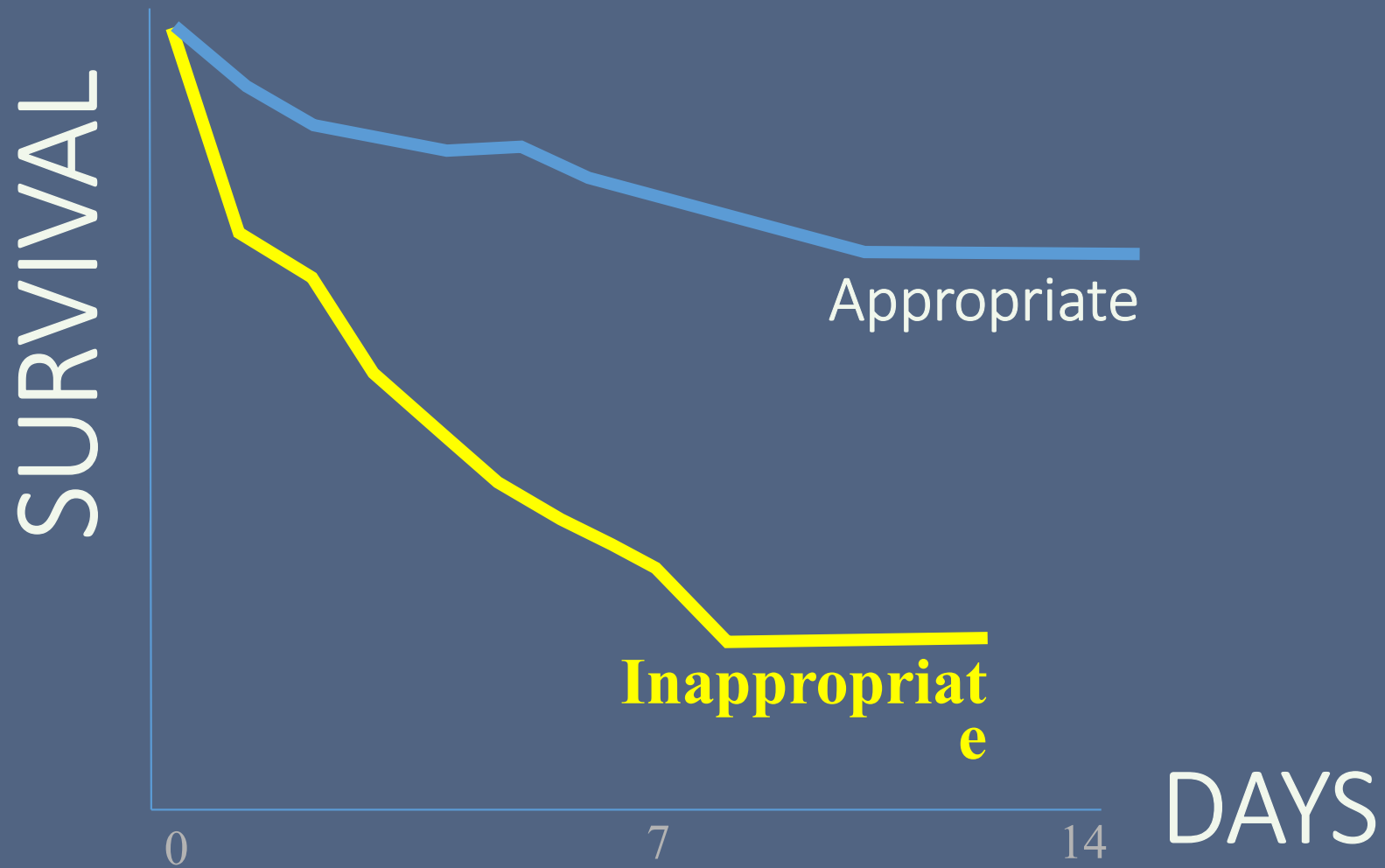
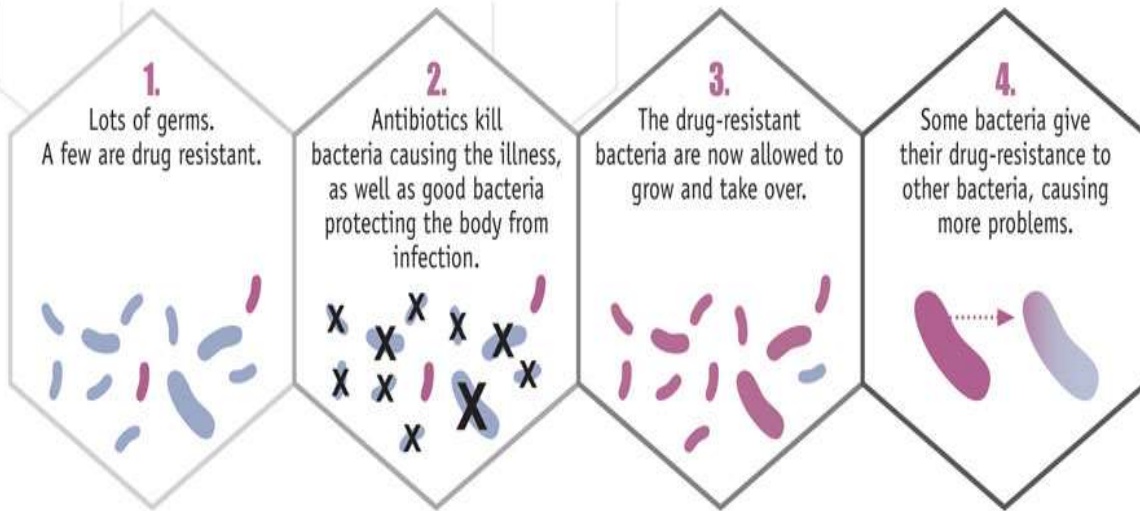


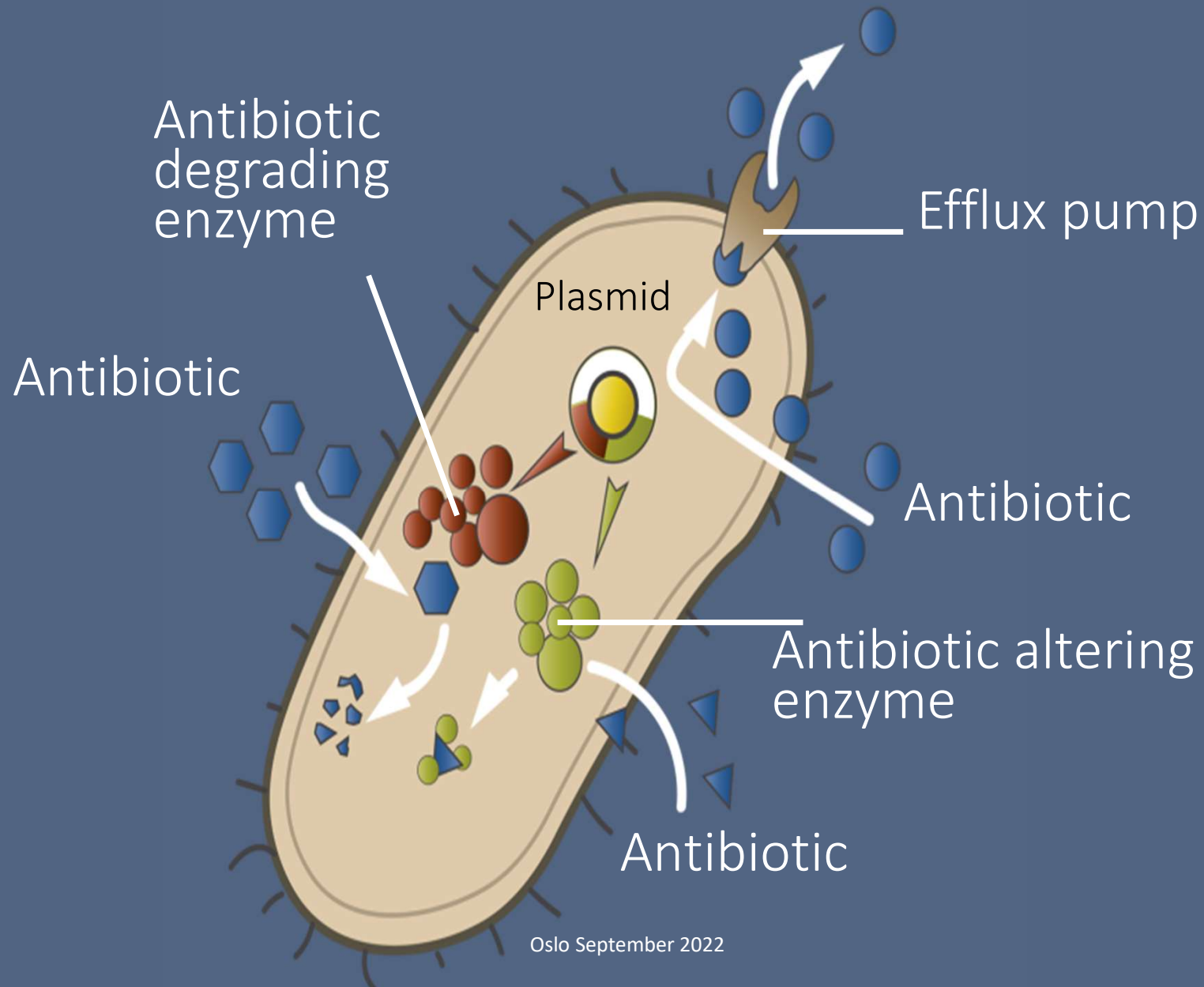
Chart 1.—Comparison of the incidence of bacteremia and the mortality for various age groups.

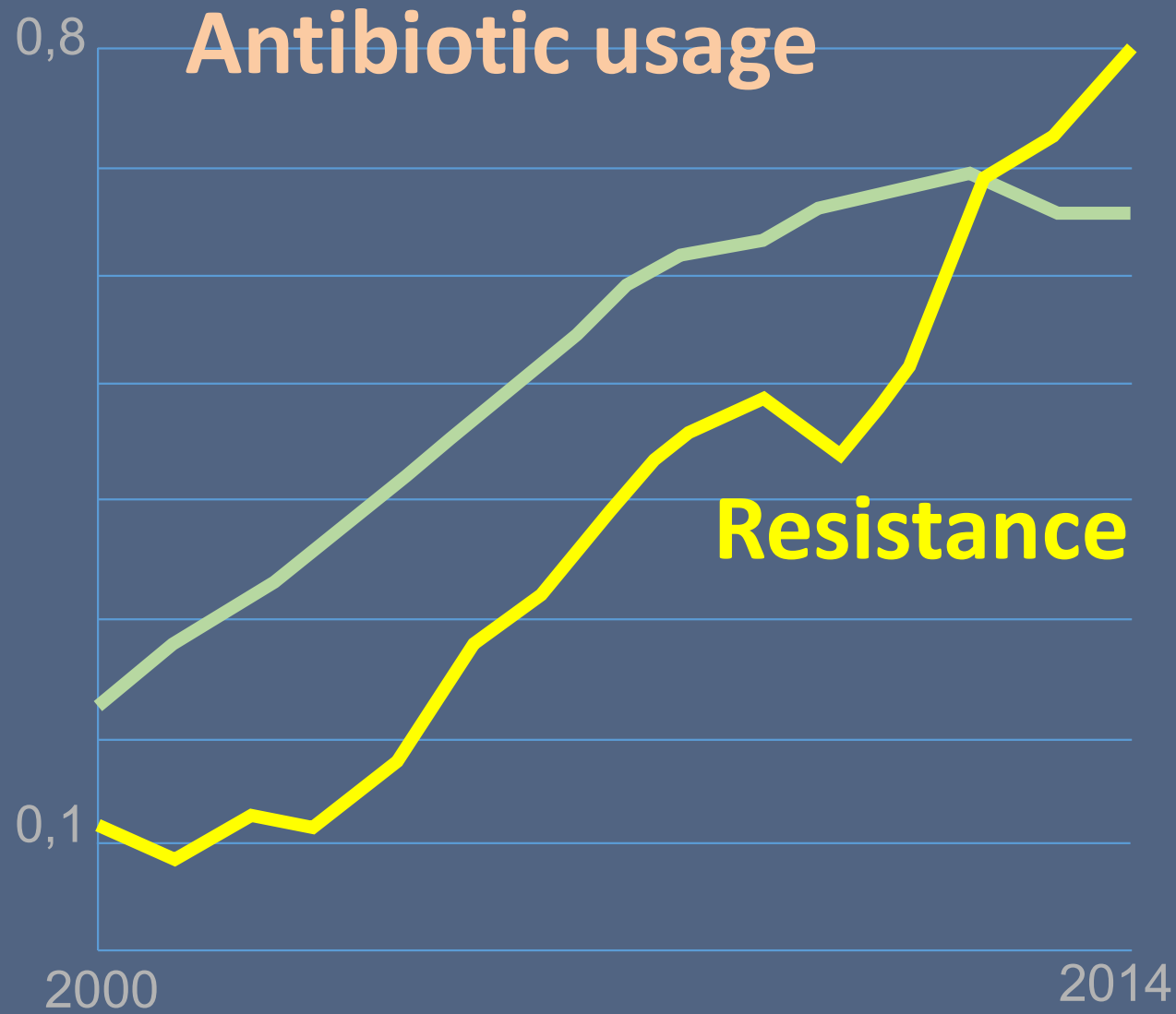




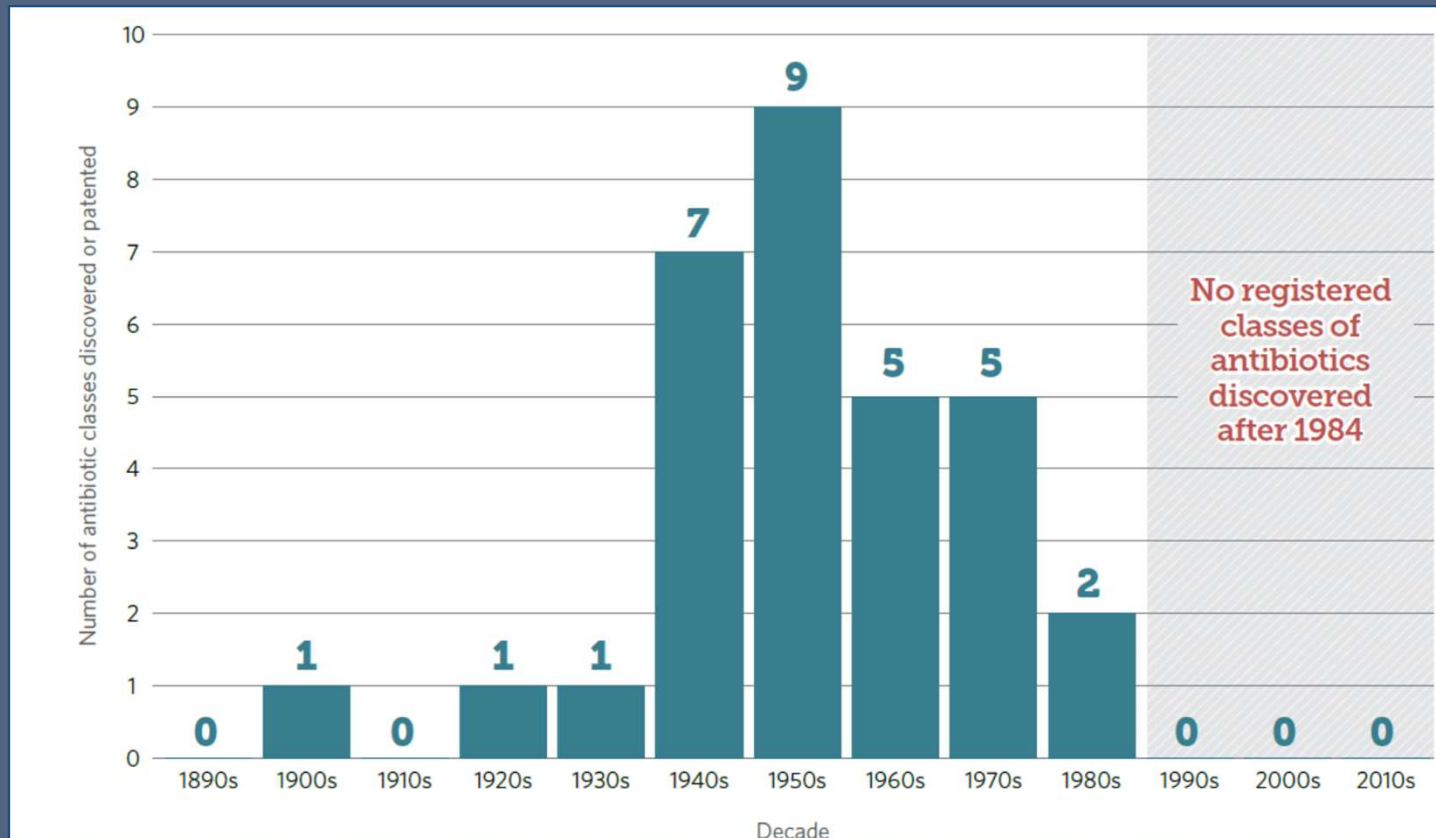
How Antibiotic Resistance Happens







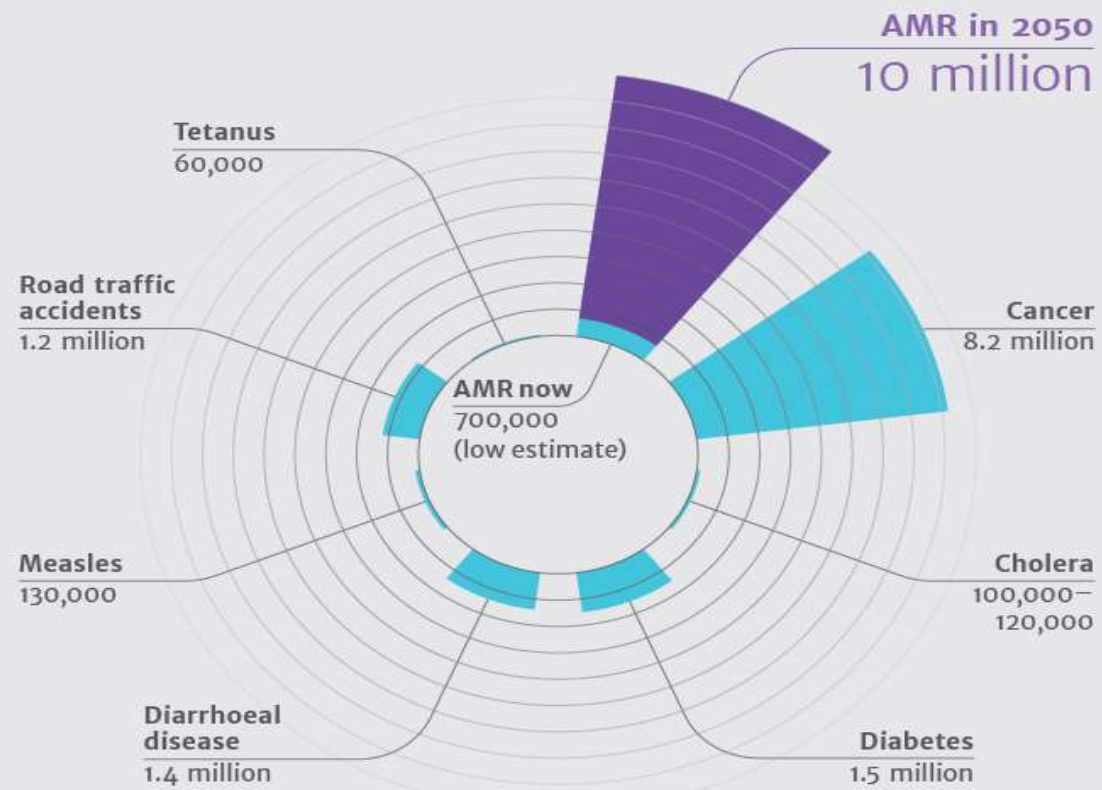
No new antibiotics the last decades



The new antibiotic



Deaths attributable to AMR every year compared to other major causes of death



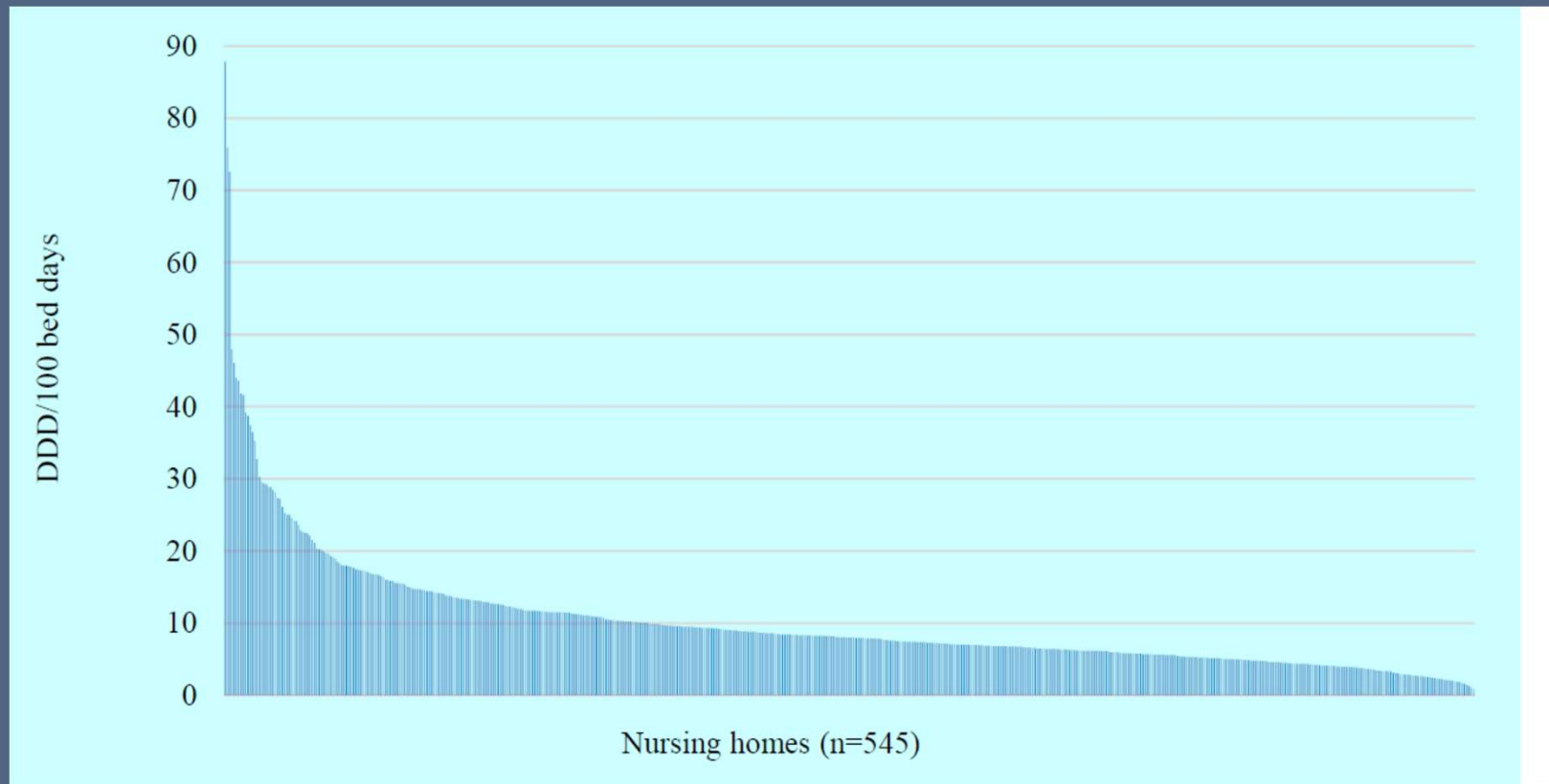
Is there light in the end of the tunnel?



Antibiotic stewardship programs leads to reduction of

- Antibiotic use and resistance
- Duration of hospital stay
- Antibiotic associated diahorrea
 - Clostridium difficile
- Reduced **costs**

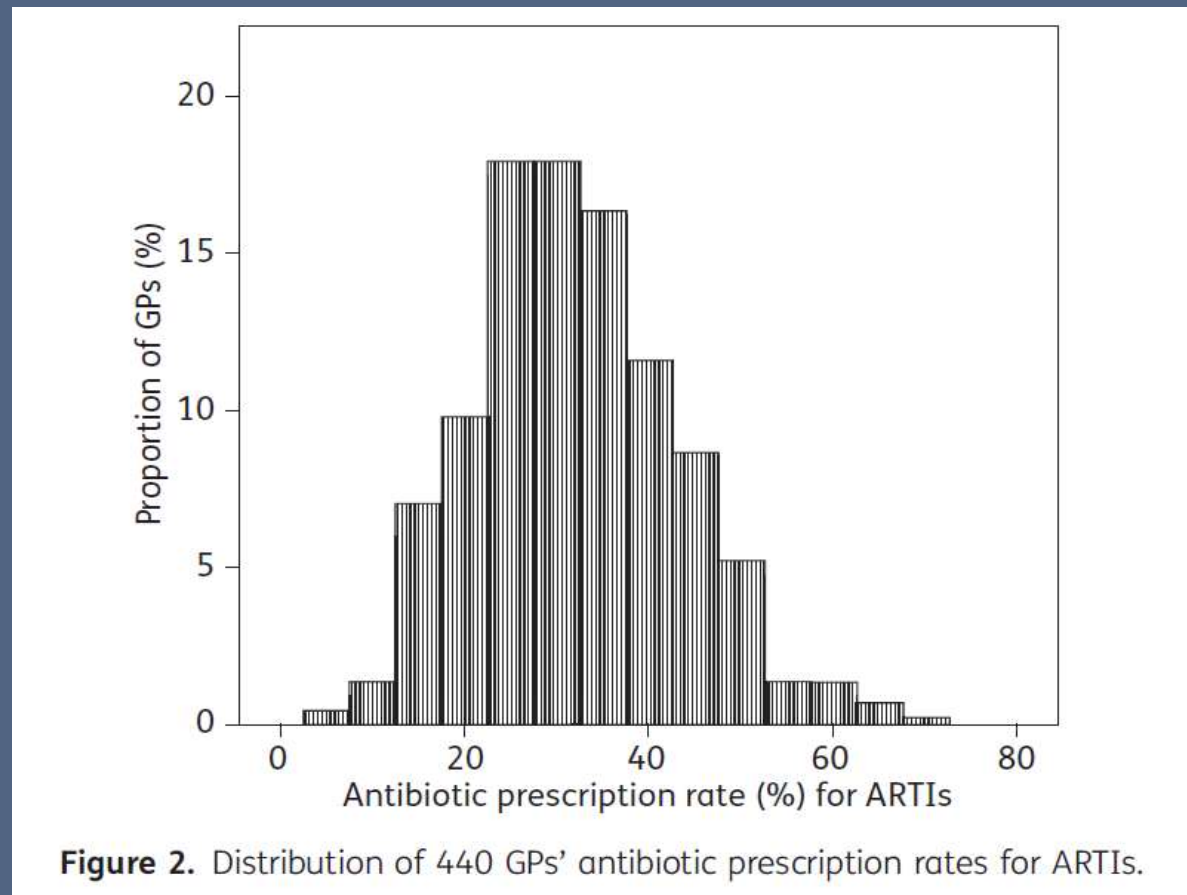
Antibiotic use Norwegian Nursing Homes 2018 (NORM)



Important

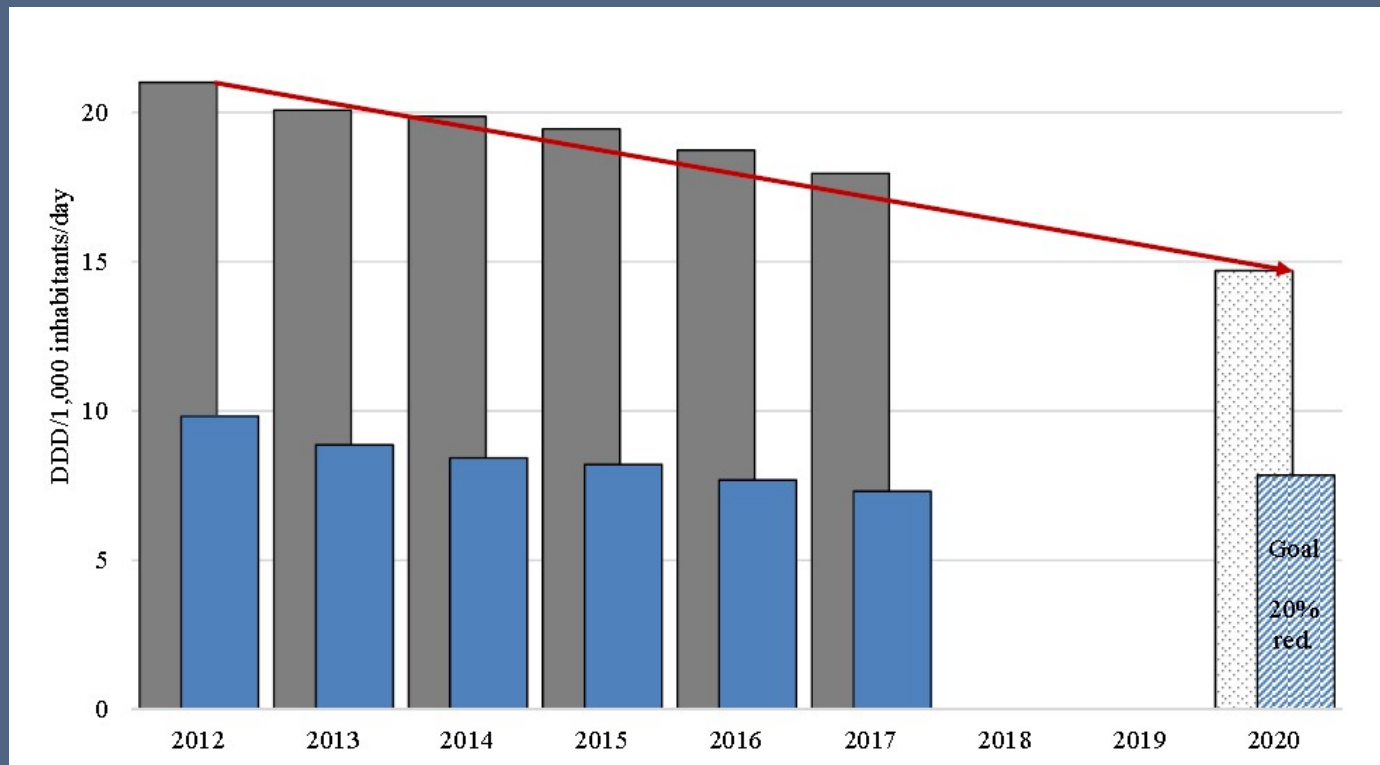
- Never treat asymptomatic bacteriuria, FP!

Antib. use in upper respiratory tract infection. Gjelstad S et al



Oslo September 2022

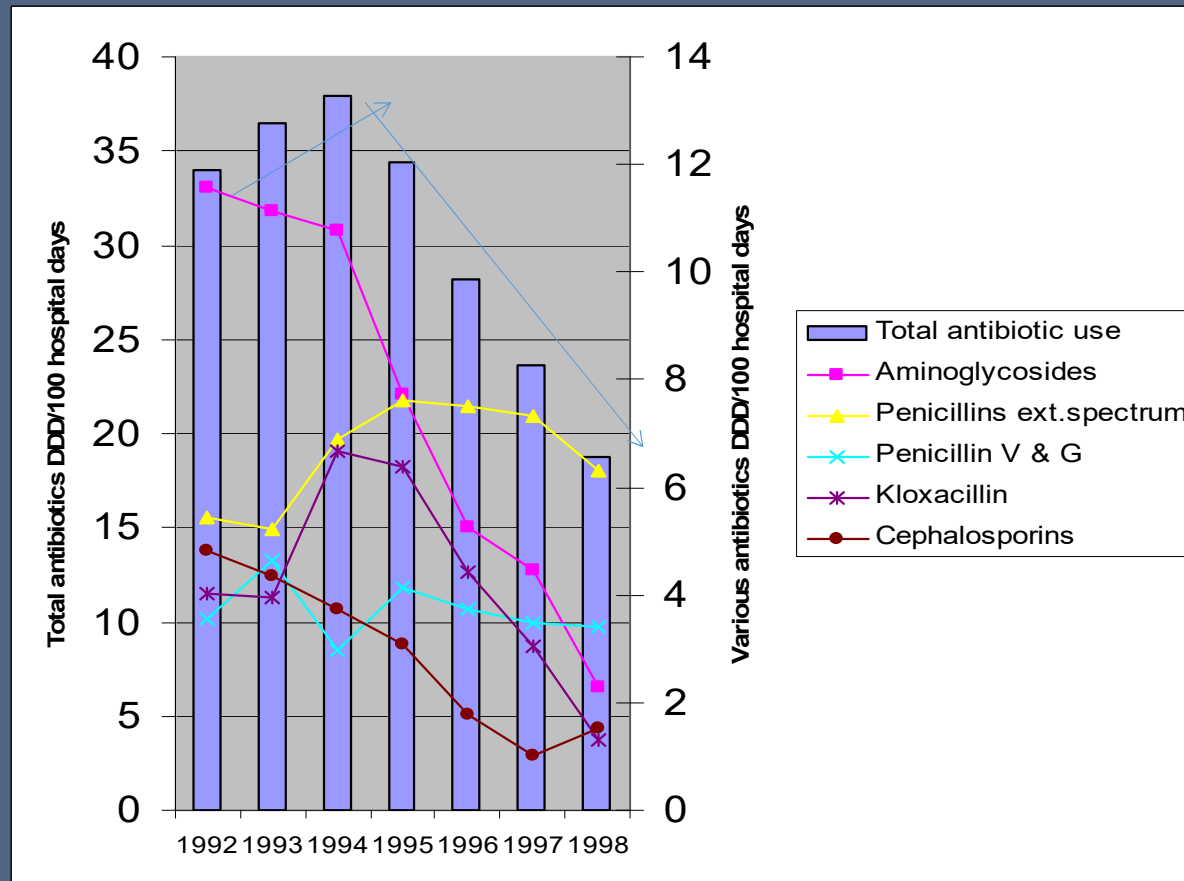
Regjeringens mål 30 % reduksjon. bredpektrede antibiotika i 2020



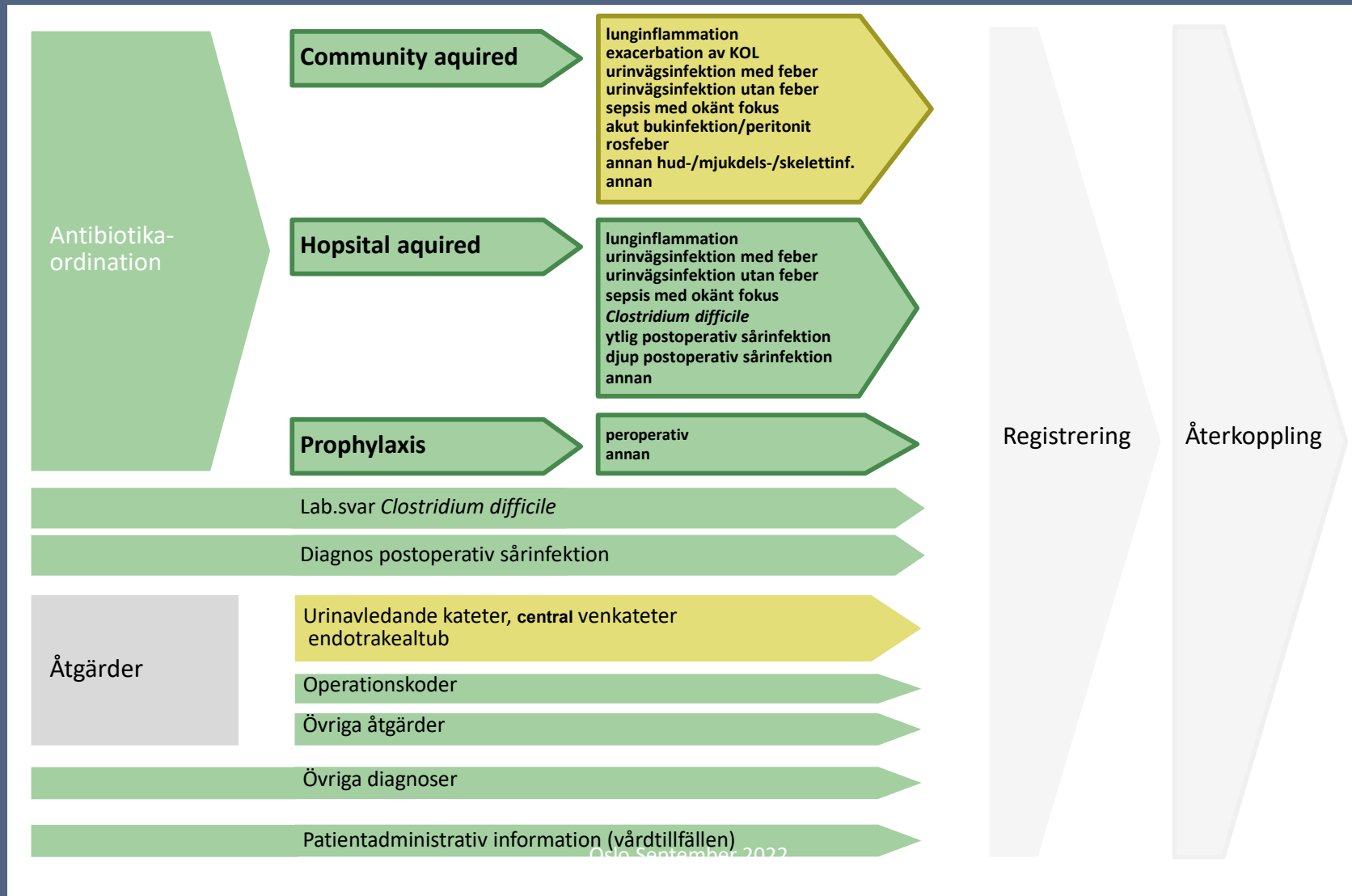
The core elements in the antibiotic stewardship program in Oslo University Hospital

- **Leadership** comittment
- Increase **compliance to guidelines**
- **Shortening** of duration of therapy
- **Revision** of AB therapy after 48-72 h.

Improved use of antibiotics in a paediatric dept.

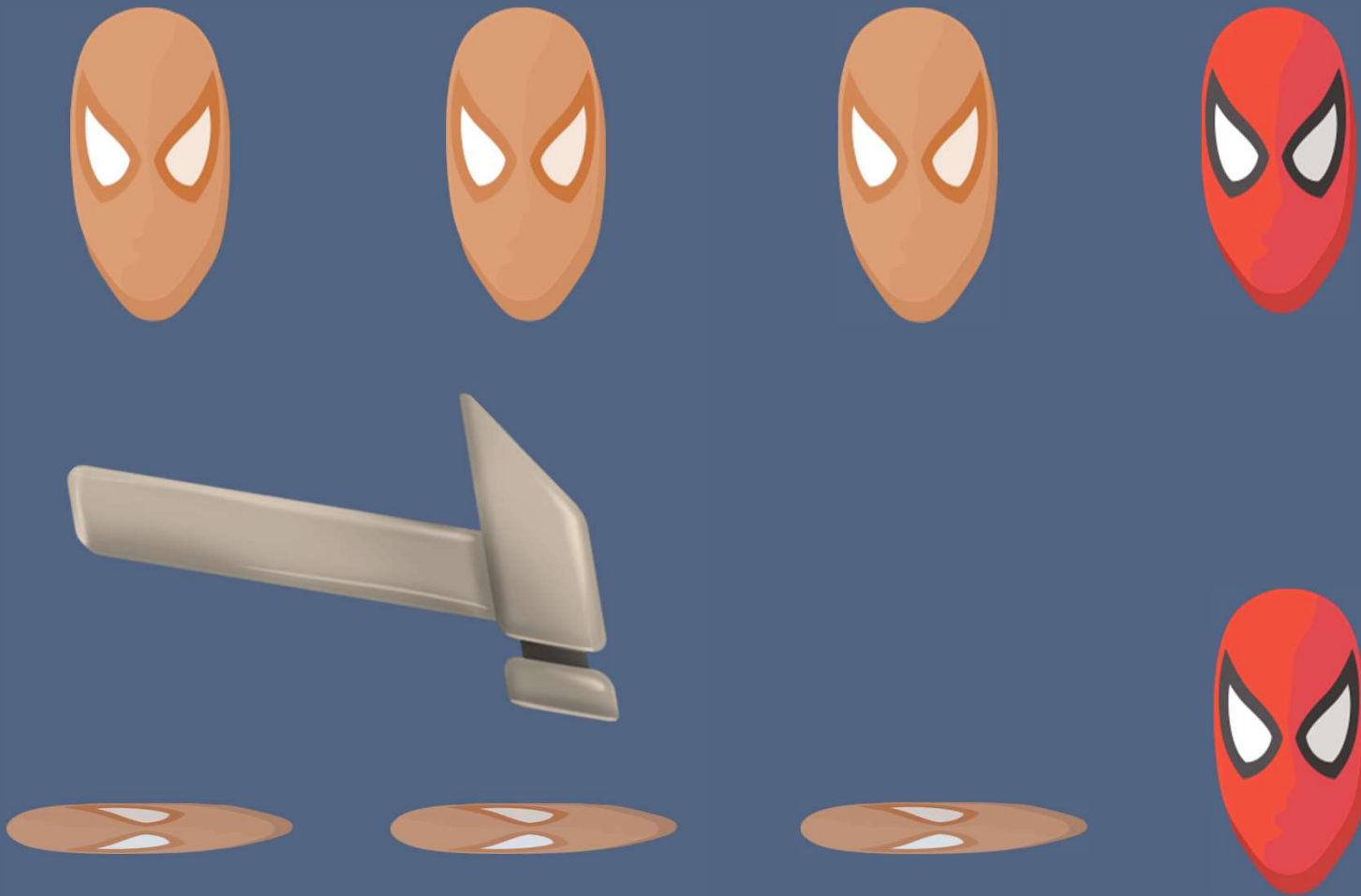


Digital support systems with decision support



We must finish the course to prevent antibiotic resistance

- It is an evidence free area
- The recommended days of treatment are only the «wholy figures» 3, 7 and 10
- Even numbers are forbidden







MRSA

CAMRSA

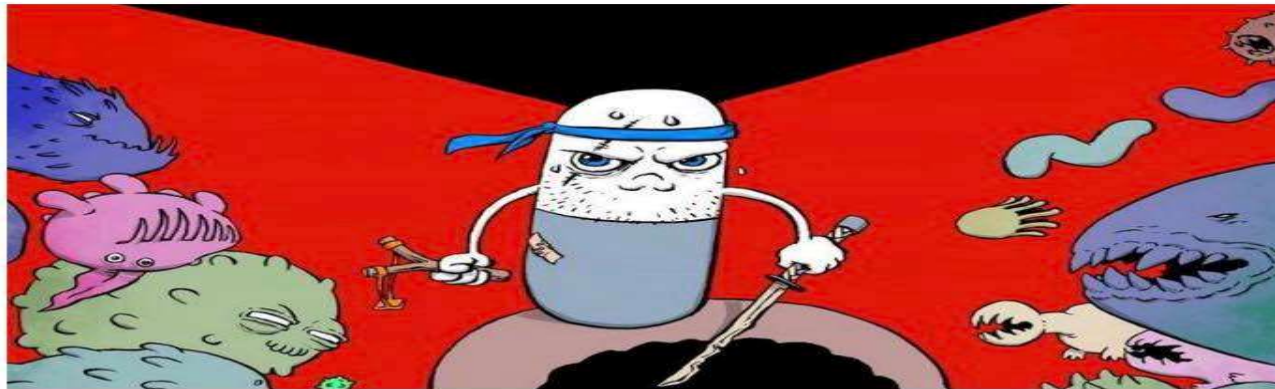
Duration of treatment (days) in hospitals

	Historical	Guidelines	New evidence
Mild/moderate Pneumonia	1-3 (1960-70)	7-14	3 (Holland)
Severe pneumoniae	10-14	10	5 (Spain)
Ventilator ass. pneumonia	14	10-14	7-8 (France)
Suspected VAP?	14	7-10?	Ultrashort (1-2 d) (USA)
Pyelonephritis	14	10-14	7 (Sweden)
Peritonitis	10	7-10	4 (USA)
Exacerbation of chron. bronchitis	7-10	7-10	<5
Gram-neg. sepsis	11-15	10-14	8 (Matched cohort)

Finish the course
should be replaced by
shorter is better if the
patient respond
clinically

Conclusion

- Antibiotics are a common good (Infrastructure)
- AMR is an ethical problem between generations
- Urgent global action is needed
- We can delay/reverse AB resistance
- We must act in concert urgently



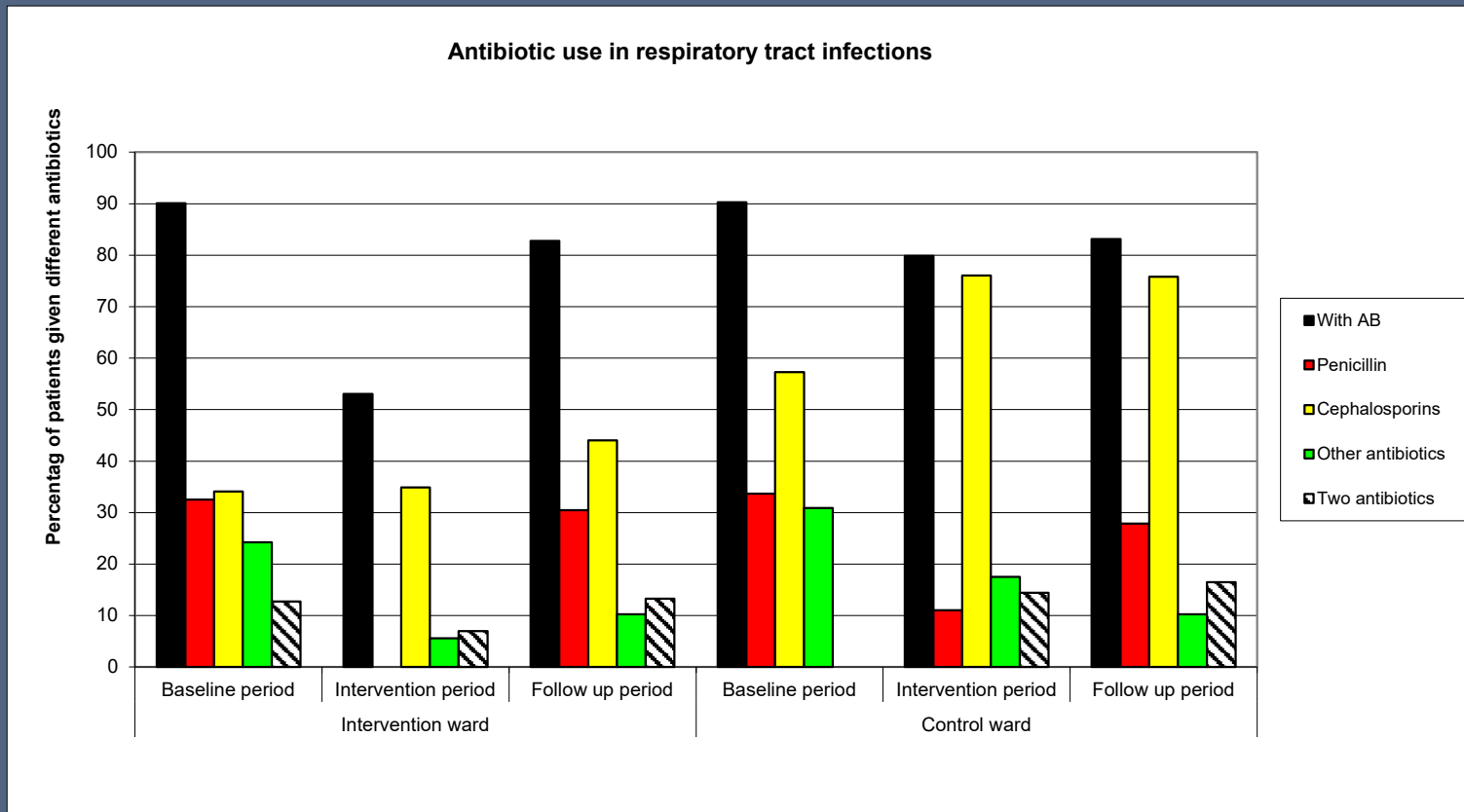
Pedagogisk blinkskudd

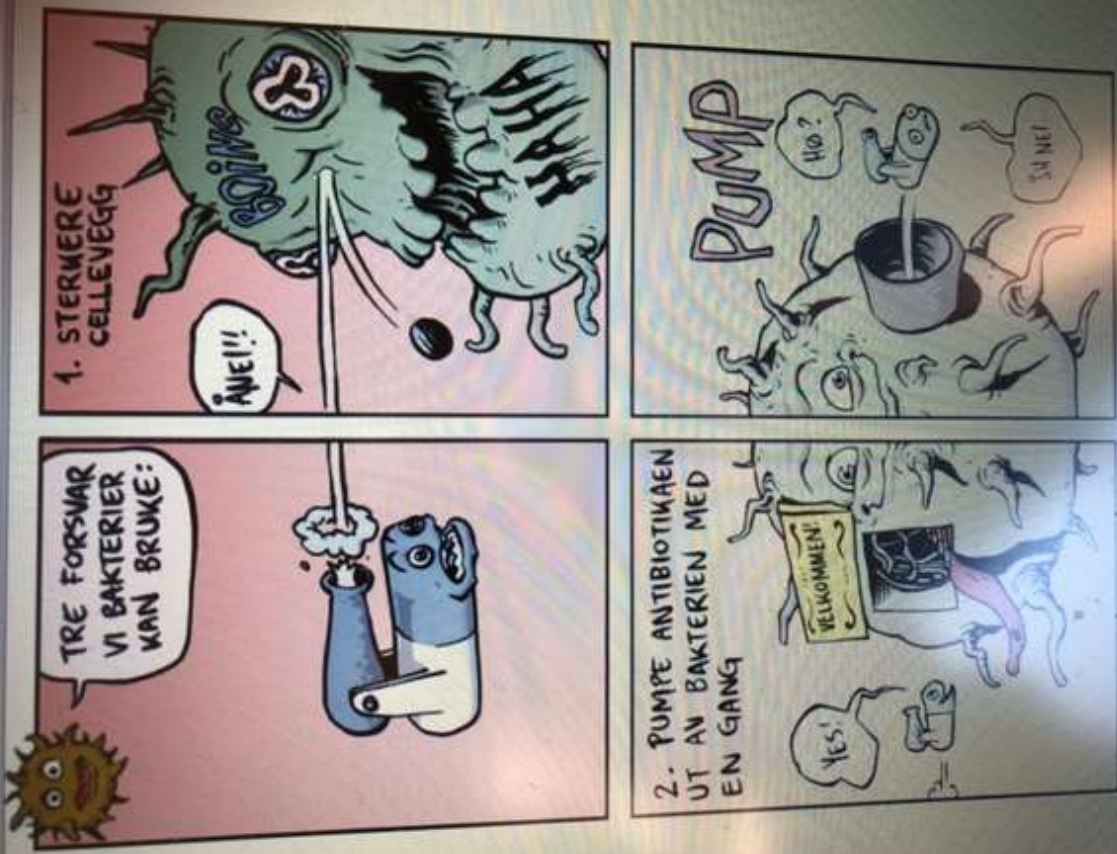
Øystein Runde bør snarest mulig inn på pensum i grunnskolen, for han har en unik evne til å bruke tegneseriefaget til å gjøre komplisert naturfag lekende lett, først med «Stamceller» (2017) og nå med «Antibiotika. Helt og antihelt» (Humanist forlag). Sistnevnte er laget med Dag Berild, professor i infeksjonssykdommer, og dette er en lettlest og lettlært historietime i antibiotikumets velsignelse og forbannelse, henholdsvis utviklingen av penicillin og hvordan overdreven bruk har ført til «medisinens klimakrise», antibiotikaresistens. Problemet med utgivelsen handler mest om målgruppe, for bare et fåtall vil bla opp 300 kroner for en tynn sakprosategneserie om antibiotika. Nei, gi heller Runde et skikkelig oppdrag: en hel naturfagbok for barneskolen i tegneserieform. Det vil gi Norge flere nobelprisvinnere i fremtiden!

VIPPS

- 295 NOK
- VIPPS 56335
- Melding: Antibiotika

Interventions are not sustainable.
Antibiotic use before, during, and after the intervention
Int J Antmicrob Chemother 2008.





Journal of Antimicrobial Chemotherapy (2006) **57**, 326–330
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JAC

Adjustment of antibiotic treatment according to the results of blood cultures leads to decreased antibiotic use and costs

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Thank you

Good luck with antibiotic stewardship programs

Antibiotic stewardship can decrease AMR and prolong life of current antibiotics

- Political/administrative leadership commitment
 - National/local action plans
- Sustainable interventions
 - Digital support systems
- More rapid and precise diagnostic tools

Negative effects of antibiotic stewardship programs?

- England children
No increase in infections
- Sweden
No increase in complications
- Alpes Maritime France
Stable rate of invasive infections