

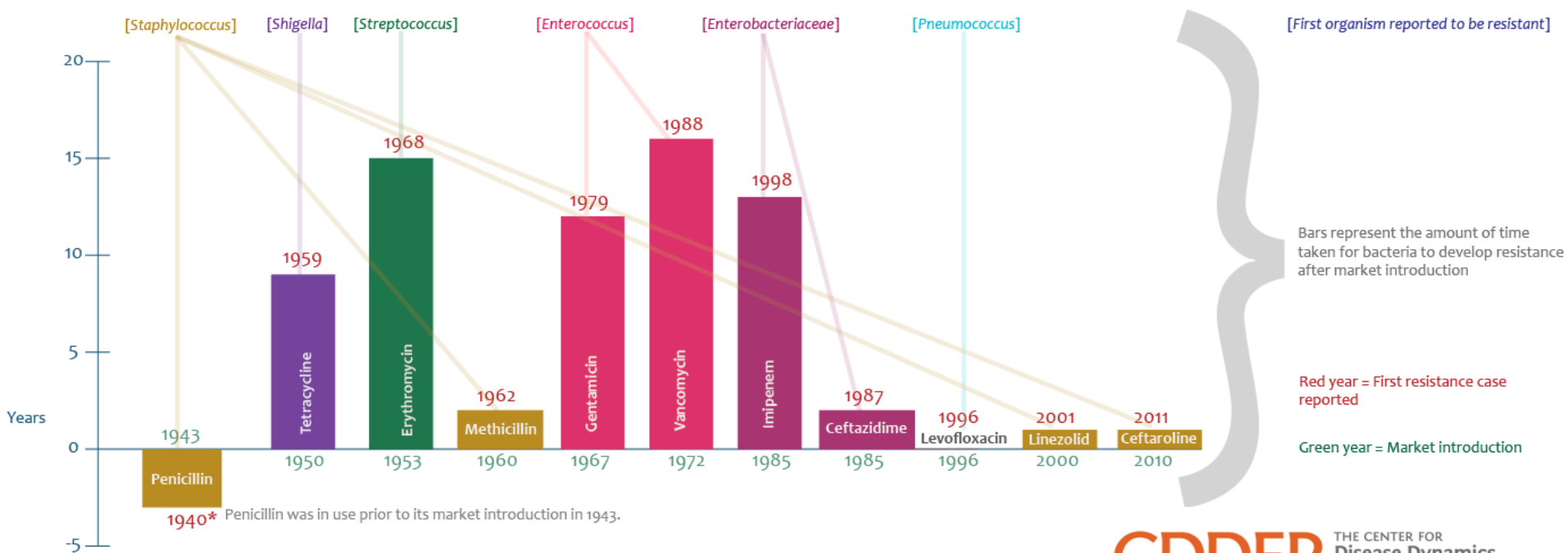
Hva må til for å få i gang utvikling av NYE antibiotika?

Christine Årdal

Avdeling for internasjonal folkehelse

Resistens mot antibiotika oppstår raskt ...

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
WASHINGTON DC • NEW DELHI

Men nye antibiotika utvikles sjeldnere...

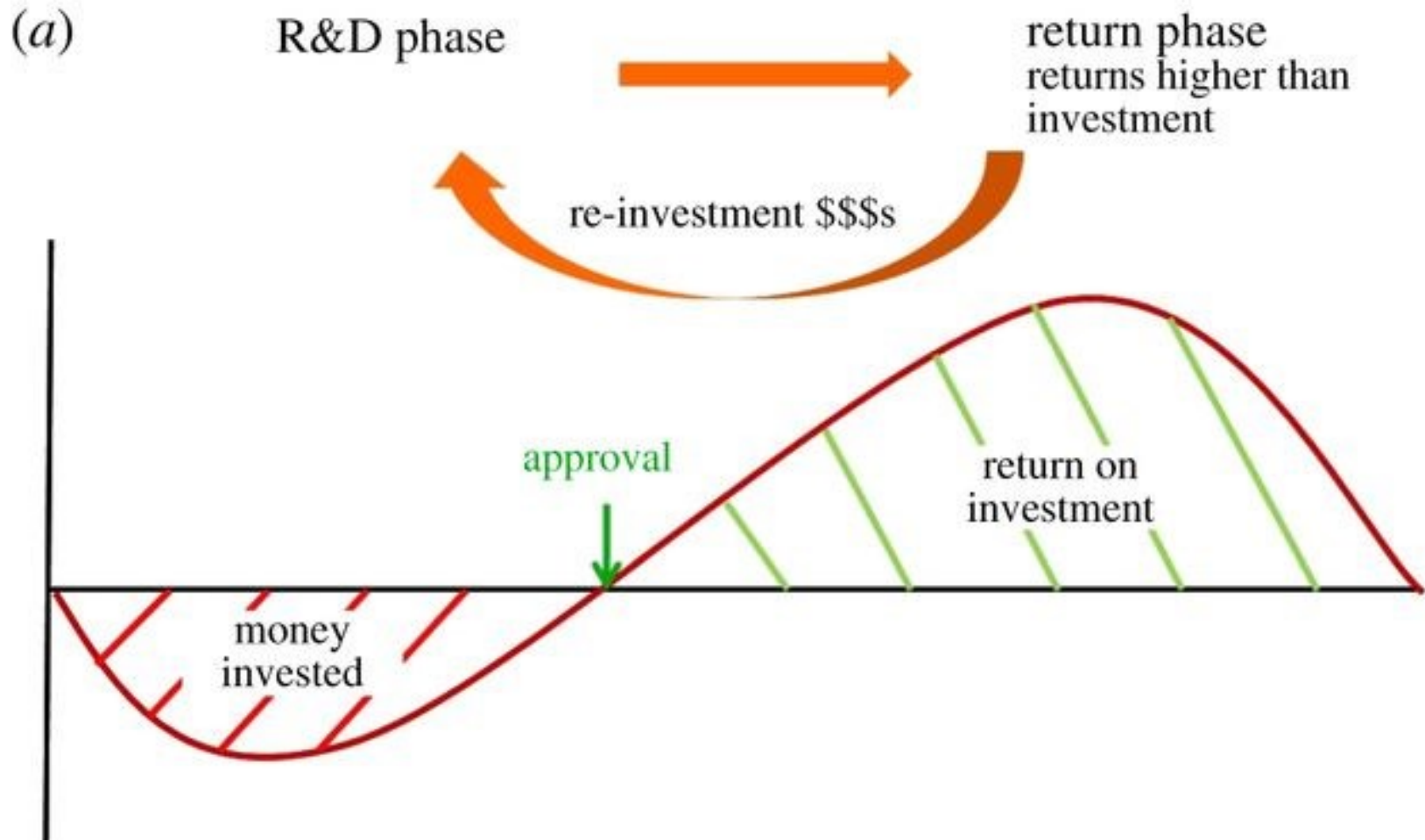
New antibiotic launches since 1994

Launch Year	Product name	Antimicrobial class (old)	Antimicrobial class (new)	Pharmaceutical Company
1994	Meropenem	Carbapenem		AstraZeneca
1999	Moxifloxacin	Fluoroquinolone		Bayer
2000	Linezolid	Oxazolidinone		Pfizer
2001	Telithromycin	Macrolide		Sanofi-Aventis
2002	Balofloxacin	Fluoroquinolone		Choongwae Pharma
	Biapenem	Carbapenem		Wyeth
	Ertapenem	Carbapenem		Merck
	Prulifloxacin	Fluoroquinolone		Nippon Shinyaku Co.
	Pazufloxacin	Fluoroquinolone		Toyama Chemical Co.
2004	Gemifloxacin	Fluoroquinolone		LG Life Sciences
2005	Tigecycline	Glycylcycline		Wyeth
	Doripenem	Carbapenem		Janssen Pharmaceuticals
2006	Daptomycin	Lipopeptide		Cubist Pharmaceuticals
2007	Garenoxacin	Quinolone		Toyama Chemical Co.
	Retaparmulin	Pleuromutilin		GlaxoSmithKline
2008	Dalbavancin	Glycolipopeptide		Pfizer
	Oritavancin	Glycopeptide		Targanta Therapeutics
	Sitafloxacin	Fluoroquinolone		Daiichi Pharmaceutical Co.
	Telavancin	Novel glycolipopeptide		Theravance
2009	Antofloxacin	Fluoroquinolone		Anhui Global
	Besifloxacin	Fluoroquinolone		SSP Co.
	Ceftobiprole	5th-gen cephalosporin		Johnson & Johnson
	Iclaprim	DHFR inhibitor		Arpida
	Tebipenem	Carbapenem		Meiji Seika Pharma Co.
2011	Ceftaroline	5th-gen cephalosporin		Cerexa
	Fidaxomicin	Macrocyclic		Optimer Pharmaceuticals
2012	Bedaquiline	Diarylquinoline		Janssen Pharmaceuticals

Fig. 3. Antibiotic pipeline for the past 20 years.

Laxminarayan, *Science*, 2014

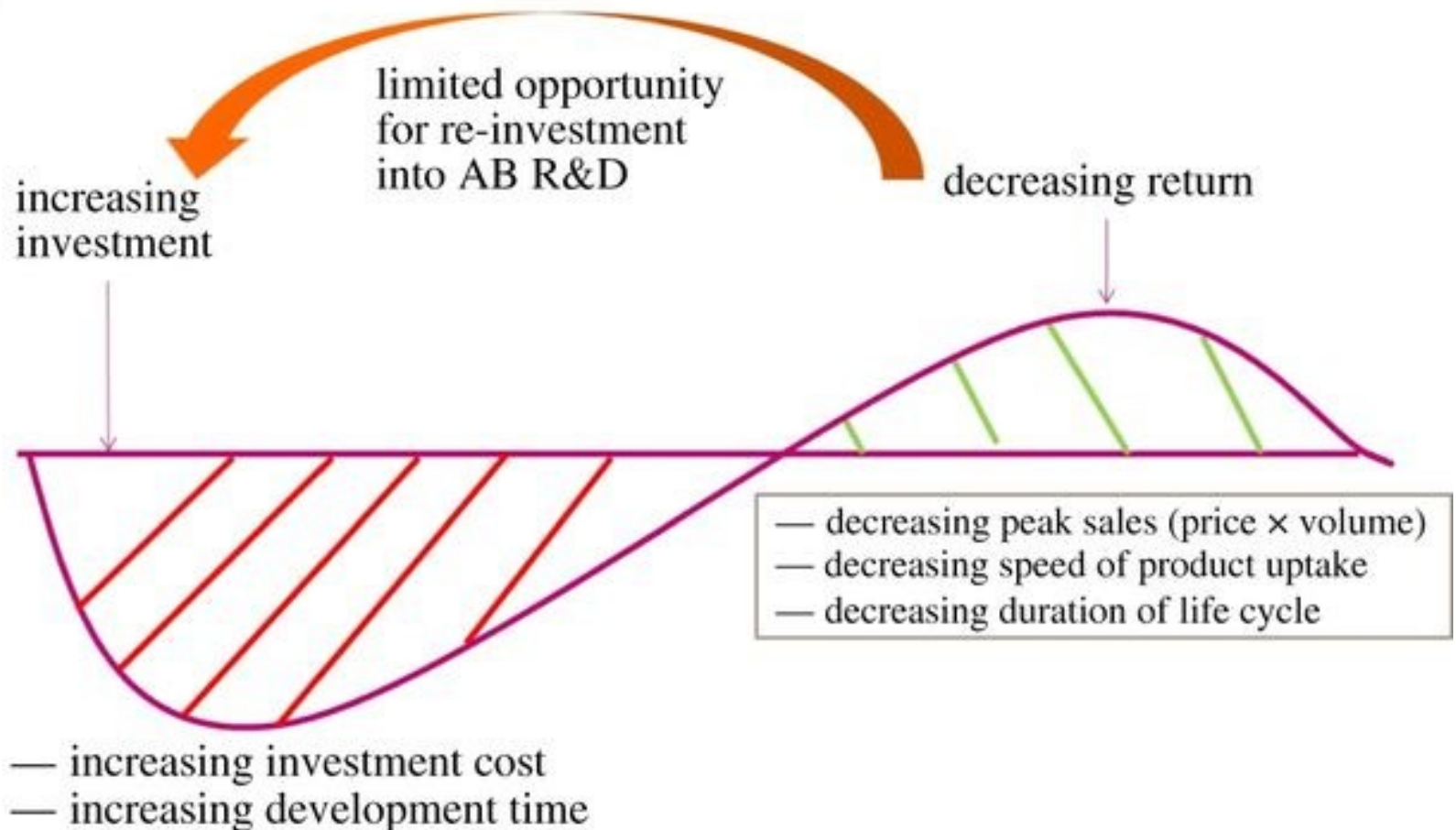
The traditional pharmaceutical commercial model



David J. Payne et al. Phil. Trans. R. Soc. B
2015;370:20140086

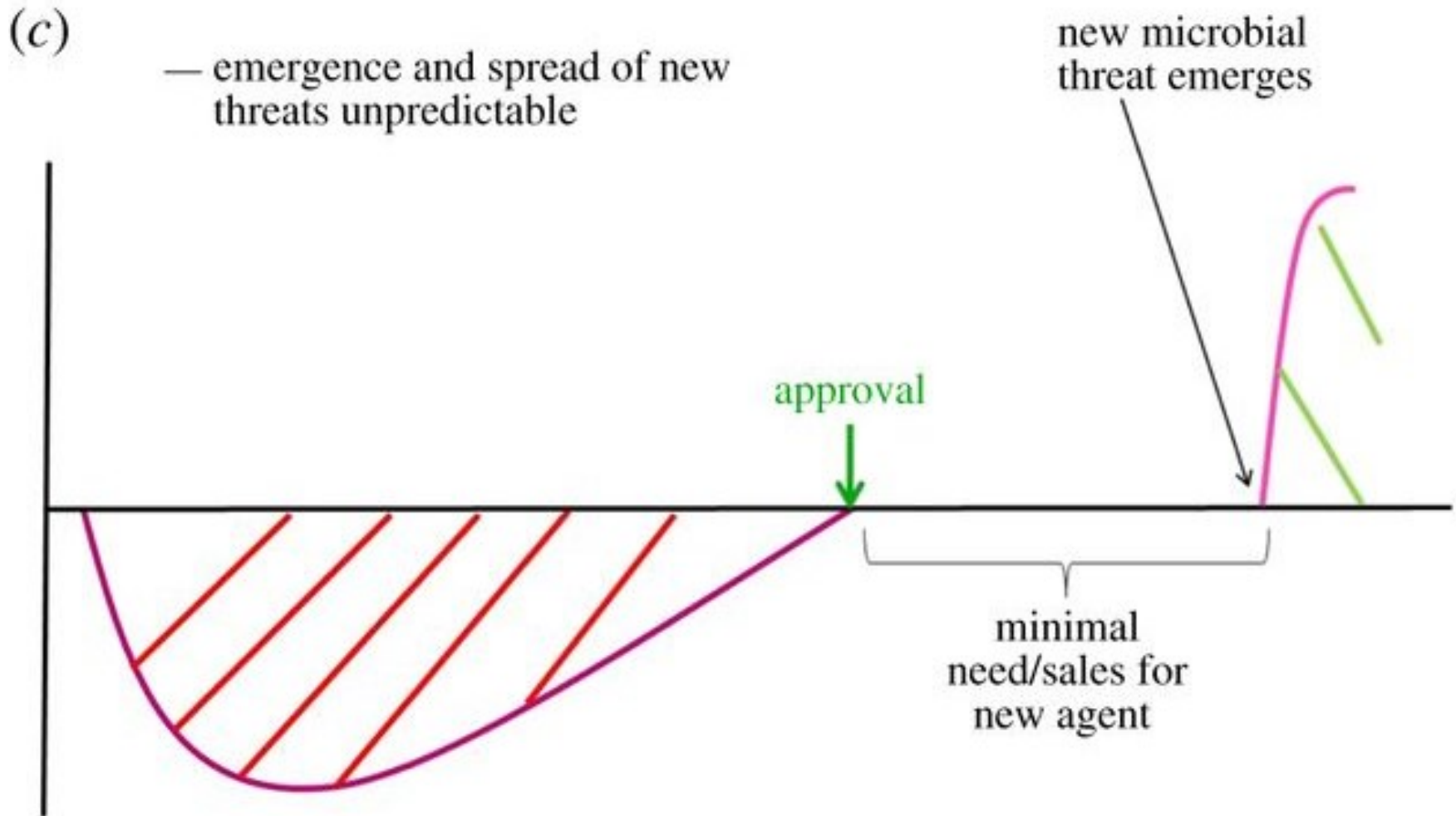
Application of traditional commercial model to antibacterials

(b)



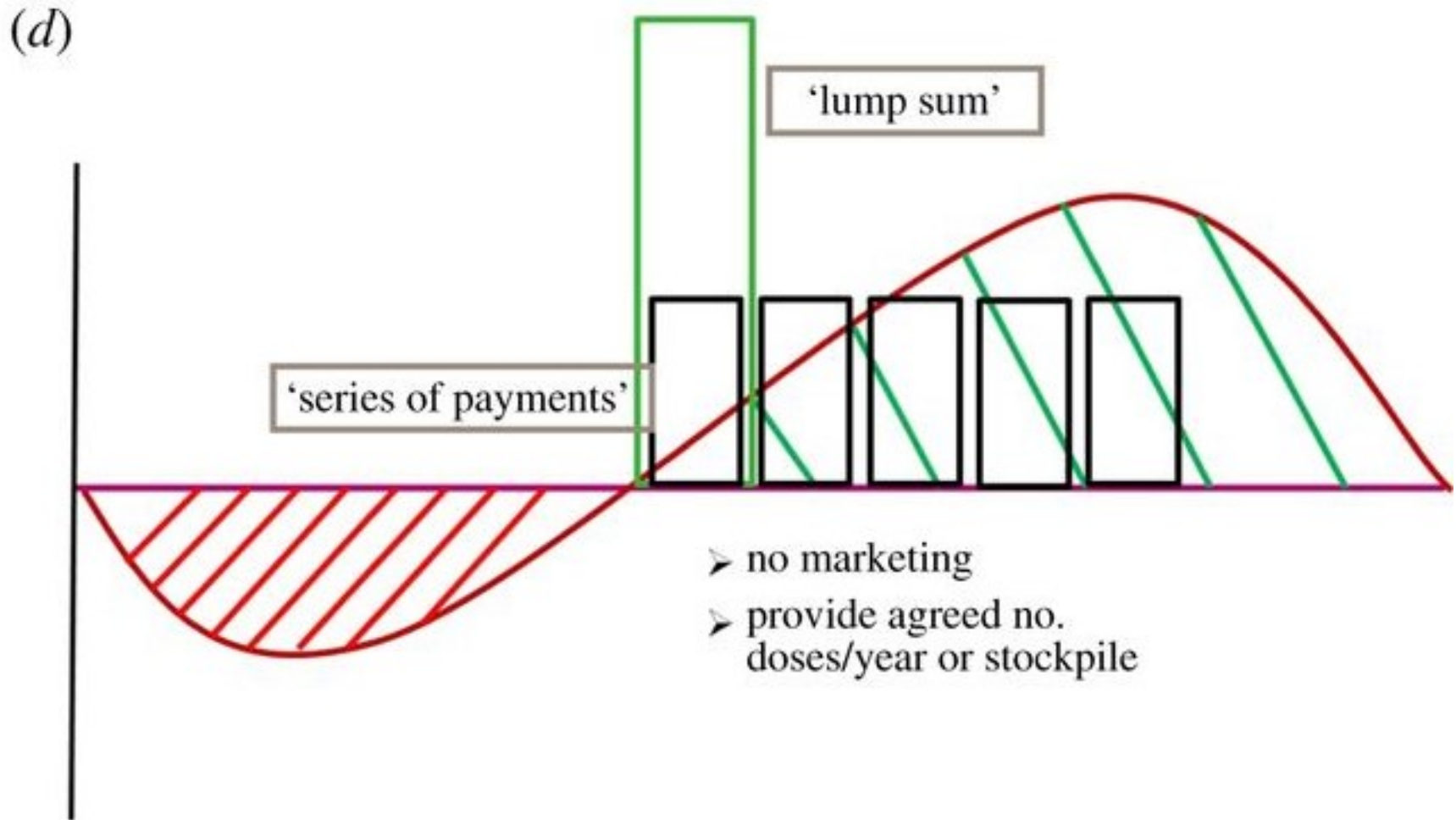
David J. Payne et al. Phil. Trans. R. Soc. B
2015;370:20140086

Commercial model does not incentivize future potential unmet needs



David J. Payne et al. Phil. Trans. R. Soc. B
2015;370:20140086

Principles of a de-linked model



David J. Payne et al. Phil. Trans. R. Soc. B
2015;370:20140086

Mye støtte til økt investering i antibiotika FoU

G7 Health Ministers Propose Incentives For New Antibiotics, Commit Help On Ebola

12/10/2015 BY CATHERINE SAEZ, INTELLECTUAL PROPERTY WATCH — [LEAVE A COMMENT](#)

FINANCIAL TIMES

May 14, 2015 6:09 pm

New drugs way to avoid an antibiotic apocalypse

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Pharmaceutical industry needs incentives to overcome market failure

Nasjonal strategi mot
Antibiotikaresistens 2015-2020

Plan | Dato: 23.06.2015

Vi jobber med å stimulere investering i FoU...

- Forske på policyer som kan øke investering i FoU på antibiotika
- Koble med policyer for ansvarlig bruk og global tilgang
- 3-års prosjekt finansiert av EUs Innovative Medicines Initiative
- FHI med Uppsala Universitet og GSK leder den største delen – å utvikle og teste nye økonomiske modeller

Mange ulike insentiver har blitt foreslått...

Forskning

- FoU fond
- «Skatt» på bruk av antibiotika
- «Open source» tilnærminger

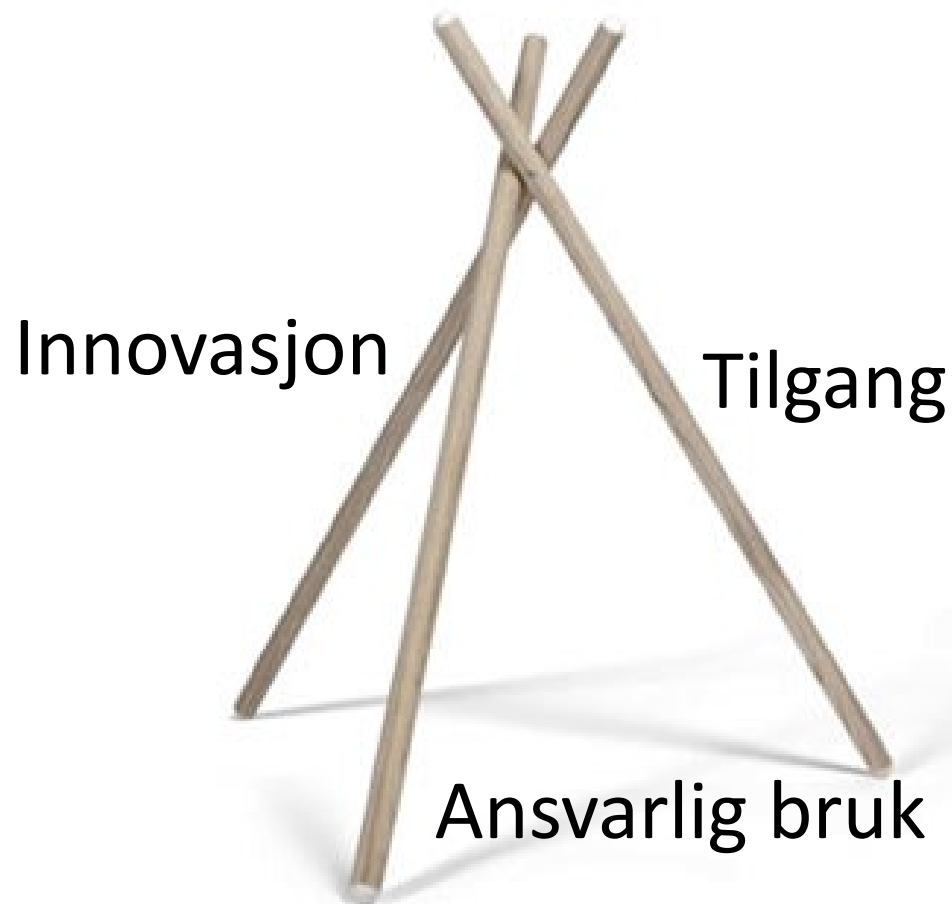
Utvikling

- Premier
- Patentforlengelser
- Eksklusiviteter på markedsførings-tillatelser
- Produktutviklings-partnerskap

Kommersialisering

- Premier
- «Advance commitments»
- Patentpooler

Antibiotika innovasjon må tilpasses...



Tusen takk!

Spørsmål?