

بسمه تعالی



دانشگاه علوم پزشکی
و خدمات بهداشتی درمانی تهران

عفونت های بیمارستانی

مصرف منطقی آنتی بیوتیک ها



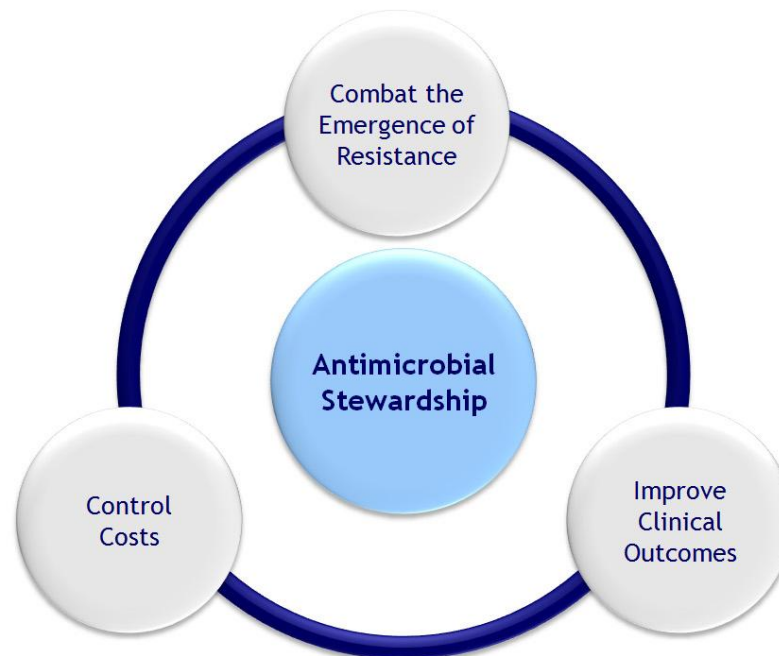
دکتر آرشی سیفی

متخصص بیماریهای عفونی و گرمسیری
فلوشیپ پیشگیری و کنترل عفونت بیمارستانی
طراح نرم افزار ملی مراقبت عفونت های بیمارستانی
مسئول واحد کنترل عفونت بیمارستان امام خمینی (ره)
عضو کمیته ی کنترل عفونت دانشگاه تهران و وزارت بهداشت
دانشیار دانشگاه، رئیس بخش عفونی بیمارستان امام خمینی (ره)

مصرف منطقی آنتی بیوتیک ها:

آنتی بیوتیک درست، در زمان درست، با مقدار درست و برای مدت درست تجویز شود.

Goals of Antimicrobial Stewardship¹

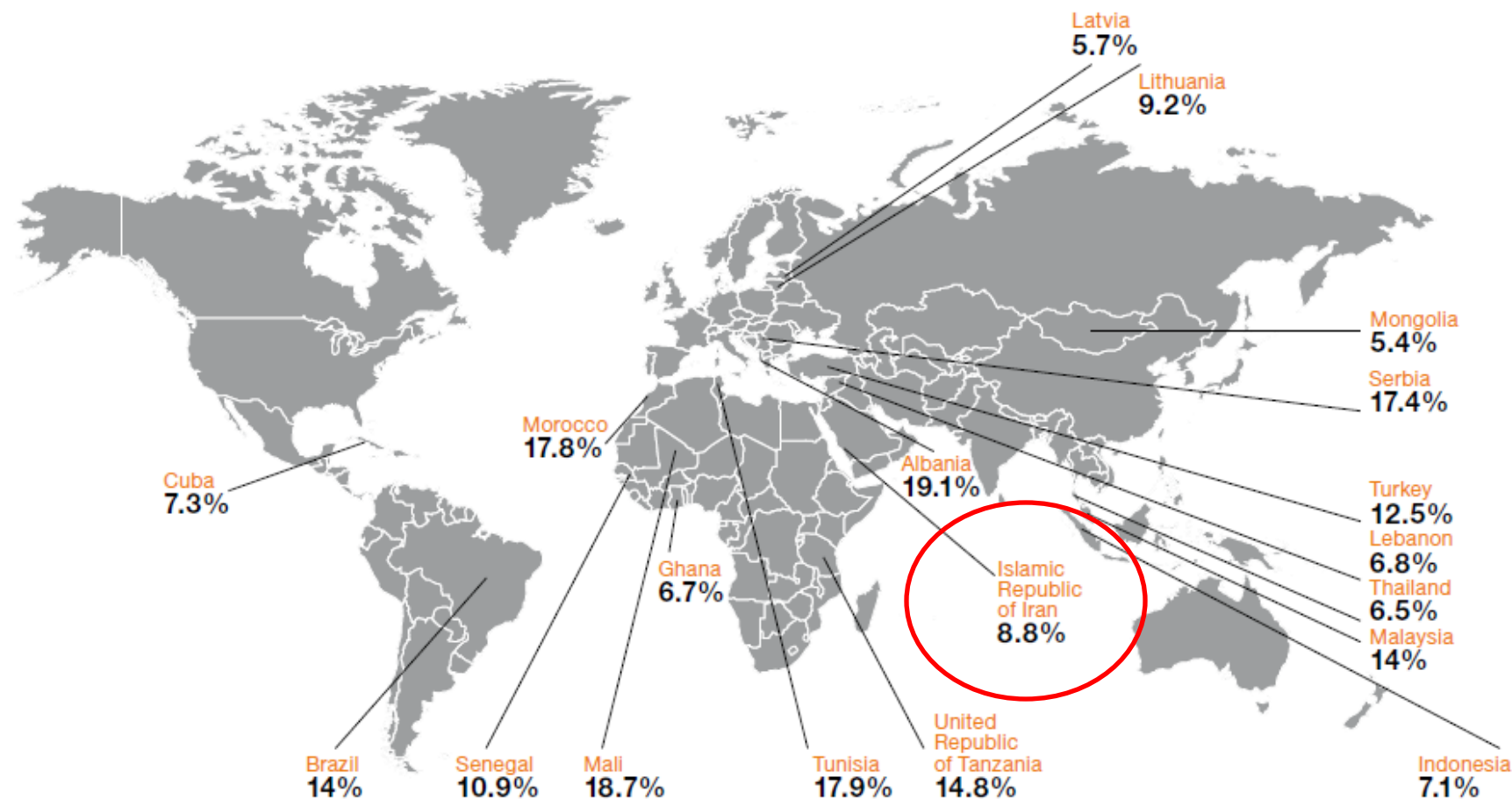


1. Lawrence KL, Kollef MH. *Am J Respir Crit Care Med*. 2009;179:434-438.

شیوع عفونت های بیمارستانی در کشورهای در حال توسعه

Figure 4.2

Prevalence of health care-associated infection in low- and middle-income countries, 1995-2010





NOSOCOMIAL INFECTIONS

Health care-associated infections, including device-associated infections, and antimicrobial resistance in Iran: The national update for 2018

MARYAM MASOUDIFAR¹, MOHAMMAD MEHDI GOUYA¹, ZAHRA PEZESHKI¹, BABAK ESHRATI¹,
SHIRIN AFHAMI², MARJAN RAHNAMAYE FARZAMI³, ARASH SEIFI^{2*}

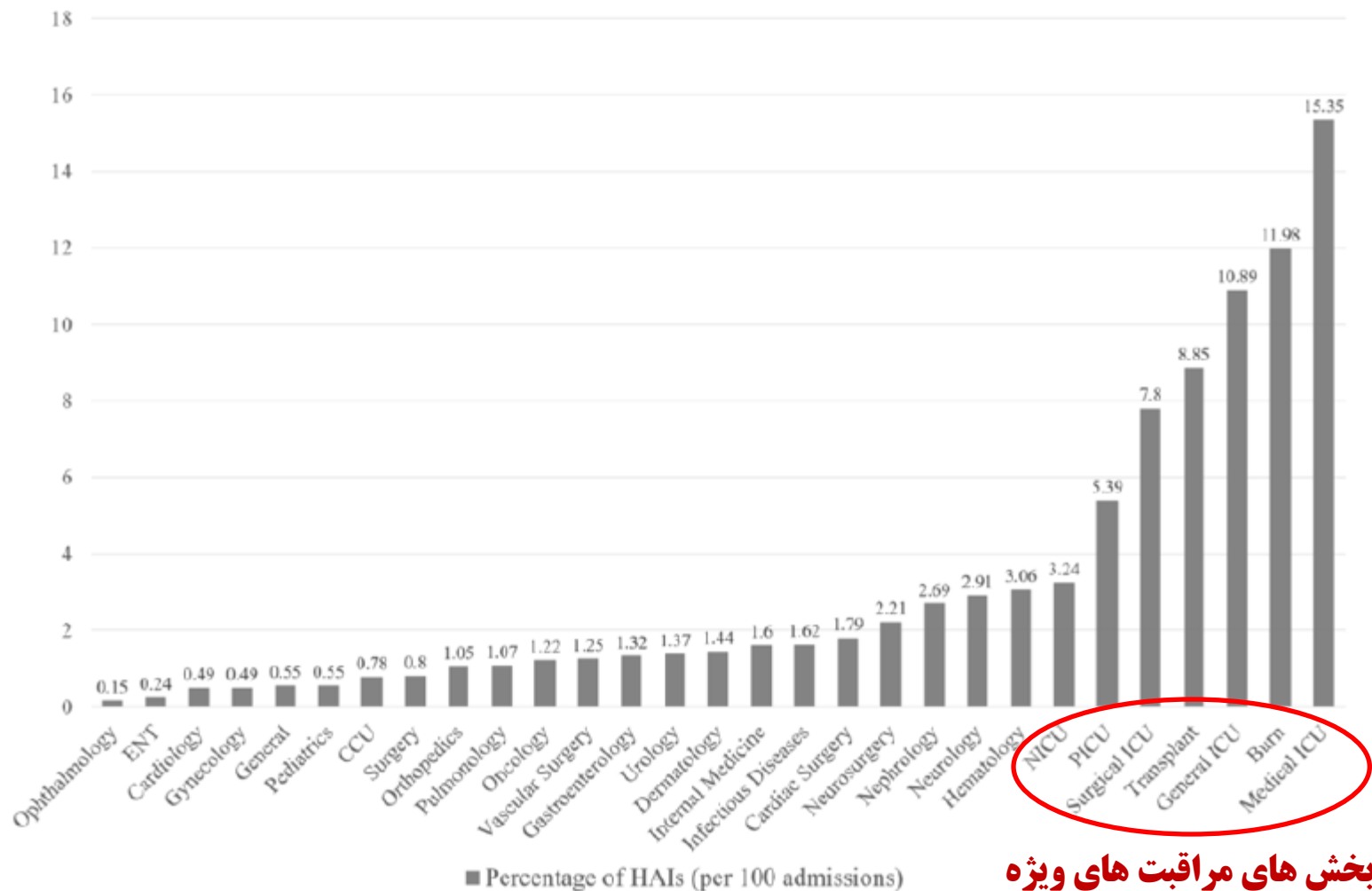
¹ Center for Communicable Diseases Control, Ministry of Health and Medical Education, Tehran, Iran; ² Department of Infectious Diseases, Faculty of Medicine, Tehran University of Medical Sciences, Tehran, Iran; ³ Reference Health Laboratory, Ministry of Health and Medical Education, Tehran, Iran

Tab. I. Summary of health care-associated infections (HAIs) in Iran, 2018.

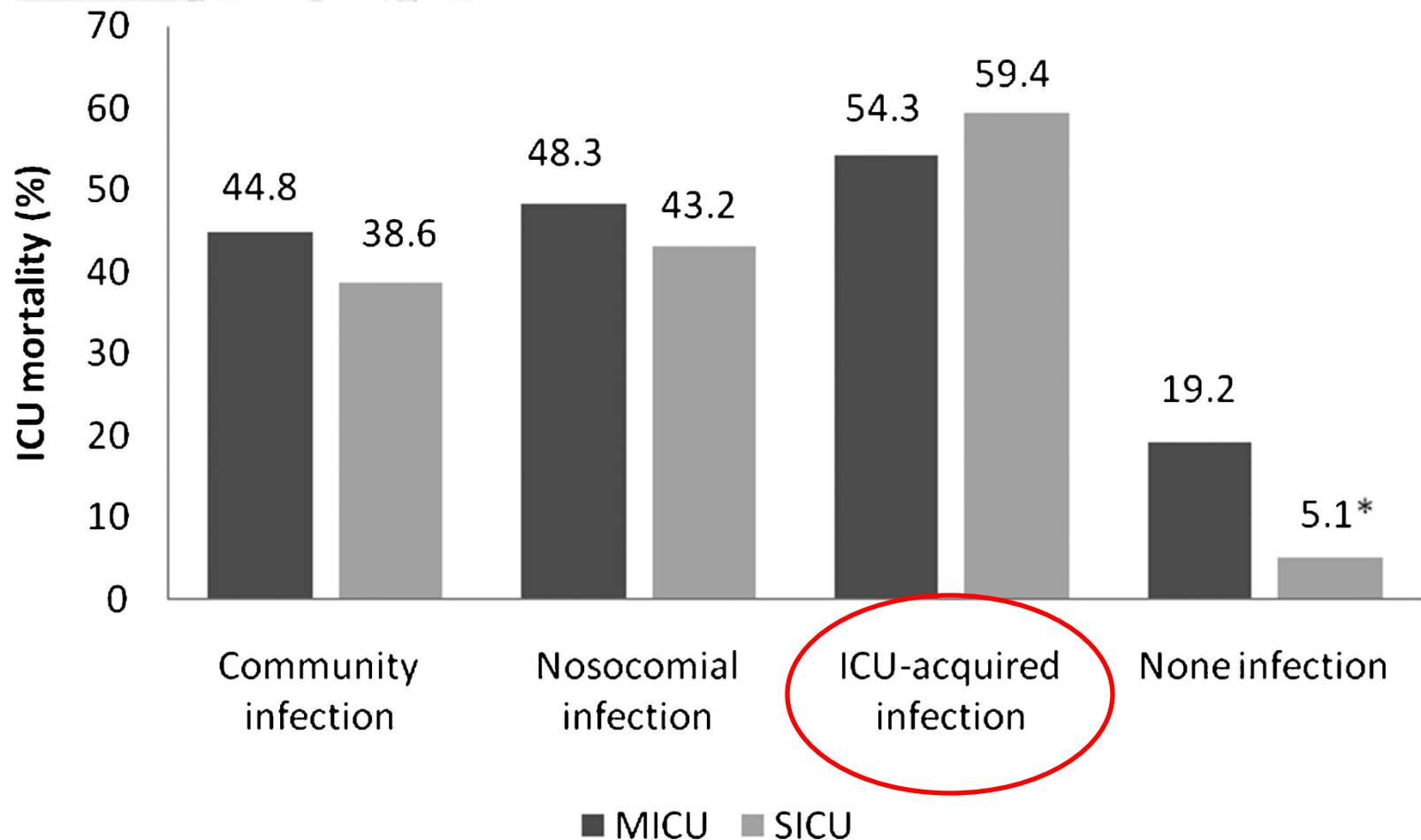
	Pneumonia*	UTI	BSI	SSI	Others	Total
Frequency (Number)	37234	32756	14843	27894	15226	127953
Relative Frequency (% of total infections)	29.1	25.6	11.6	21.8	11.9	100
Incidence (% in 100 admissions)	0.38	0.34	0.15	0.29	0.16	1.33
Incidence (in 1000 patient-days)	1.2	1.1	0.5	0.9	0.5	4.2
Crude Mortality Rate (%)	28.6	12.7	20.5	3.6	8.0	15.65

* Pneumonia: including ventilator-associated pneumonia (VAP) and non-VAP pneumonia. UTI: Urinary Tract Infection; BSI: Blood stream infection; SSI: Surgical site infection; Others: Other than 4 major infections.

Fig. 1. Incidence of health care-associated Infections (HAIs) in different wards in Iran, 2018.



میزان مرگ ناشی از عفونت های بیمارستانی



آمار کشوری مقاومت میکروبی در عفونت های بیمارستانی

Tab. II. Antimicrobial resistance pattern of main microorganisms in HAIs in Iran, 2018.

Microorganism	Antibiotic	Resistance (%)	Interpretation
<i>Staphylococcus aureus</i>	Oxacillin / Cefoxitin	49.29	MRSA
	Clindamycin	59.77	
	Vancomycin	0.04	
<i>Enterococcus spp.</i>	Ampicillin	55.88	
	Vancomycin	56.56	VRE
	Linezolid	0.76	
<i>Klebsiella pneumonia</i>	3 rd or 4 th generation cephalosporin	80.41	ESBL-producing
	Fluoroquinolone	68.19	
	Beta-lactamase inhibitor	71.63	
	Carbapenem	57.83	KPC-producing
<i>Escherichia coli</i>	3 rd or 4 th generation cephalosporin	70.16	ESBL
	Fluoroquinolone	62.69	
	Beta-lactamase inhibitor	33.96	
	Carbapenem	21.45	
<i>Pseudomonas Aeruginosa</i>	Ceftazidime	57.75	
	Fluoroquinolone	56.57	
	Aminoglycoside	54.97	
	Piperacillin/Tazobactam	54.55	
	Carbapenem	60.06	
<i>Acinetobacter baumannii</i>	Ceftazidime	93.76	
	Fluoroquinolone	92.82	
	Aminoglycoside	89.18	
	Ampicillin/Sulbactam	68.05	
	Carbapenem	93.02	
	Colistin	3.81	

HAI: Health care associated Infection; MRSA: Methicillin-resistance *Staphylococcus aureus*; VRE: Vancomycin-resistant *Enterococcus*; ESBL: Extended spectrum beta-lactamase; KPC: *Klebsiella pneumoniae* carbapenemase.

BACTERIOLOGY

Specimen: Urine Culture (u/c)

Test

Type of Specimen

Result

Midstream

Culture Result: (Acinetobacter baumannii [> 100000])

Antibiogram:

Sensitive :

Intermediate :

Resistance : Amikacin - Ceftazidime - Ciprofloxacin - Colistin - Co-Trimoxazole - Gentamycin - Imipenem - Nitrofurantoin

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BACTERIOLOGY

Specimen: BAL, Culture

Culture Result: (Klebsiella pneumonia [> 100000])

Antibiogram:

Sensitive :

Intermediate :

Resistance : Ampicillin-Sulbactam - Ceftriaxone - Ciprofloxacin - Co-Trimoxazole - Gentamycin - Imipenem - Levofloxacin - Piperacillin-Tazobactam

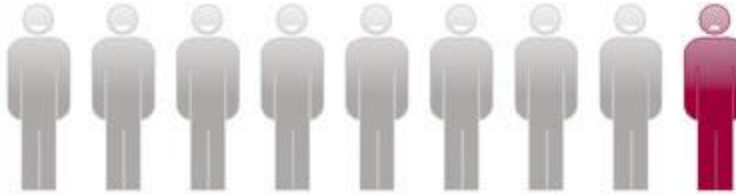
Comment : Dear Colleague: Resistance to Cefotaxime (Zone Under 27 mm), Ceftriaxone (Zone Under 25 mm) And Ceftazidime (Zone Under 22 mm) is Indicative of Extended Spectrum BetaLactamase Organisms Which Should be Further Confirmed.

سونامی مقاومت های میکروبی



1 in 9

hospital patients in
Canada get an HAI



**HAIS ARE THE
4TH LEADING
CAUSE OF
DEATH
IN CANADA**

1. Cancer
2. Heart Disease
3. Stroke
4. HAIs
5. Accidental

رتبه ۴ علت فوت

\$1,000,000,000

How much HAIs cost the Canadian Healthcare System annually

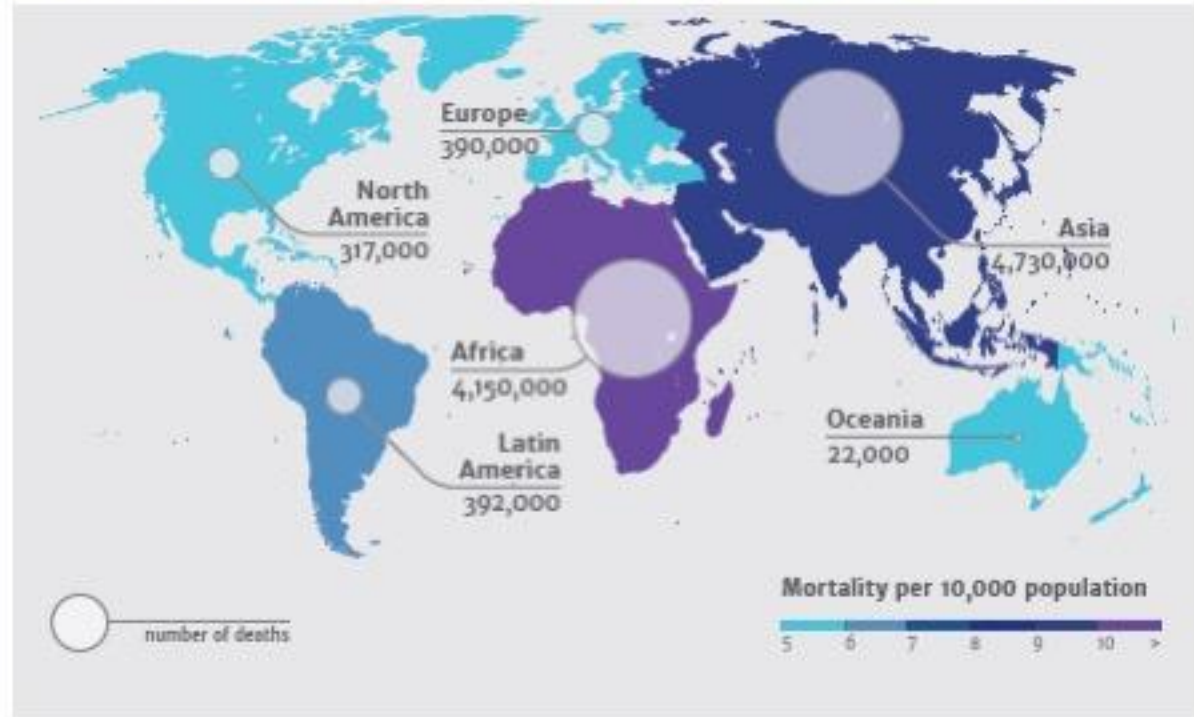
هزینه سالانه

The Ever Expanding Global Concern of AMR

Mortality & Economic impact

- By 2050, lead to 10 million deaths/year
- Reduction of 2 to 3.5 percent in GDP
- Costing the world up to \$100 trillion

Deaths attributable to AMR every year by 2050



“Drug resistance follows the drug like a faithful shadow.”

Paul Ehrlich 1854-1915
Nobel Prize winner 1908



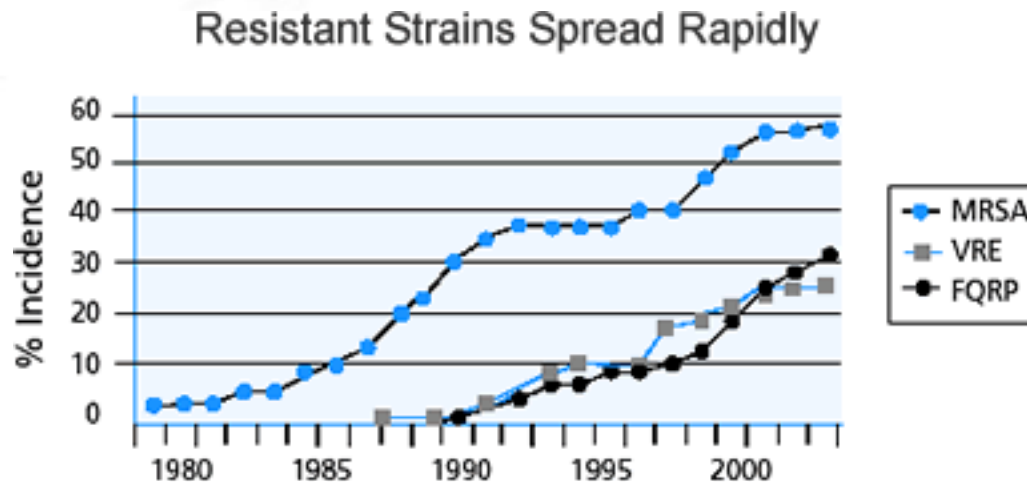
“is the danger that the ignorant man may easily under-dose himself and by exposing his microbes to non-lethal quantities of the drug make them resistant.”

Alexander Fleming,
Nobel prize lecture, 1945



افزایش مقاومت های میکروبی

- AMR is a Serious threat that is increasing rapidly



Source: Centers for Disease Control and Prevention

MRSA = Methicillin-resistant *Staphylococcus Aureus*

VRE = Vancomycin-resistant *Enterococci*

FQRP = Fluoroquinolone-resistant *Pseudomonas aeruginosa*

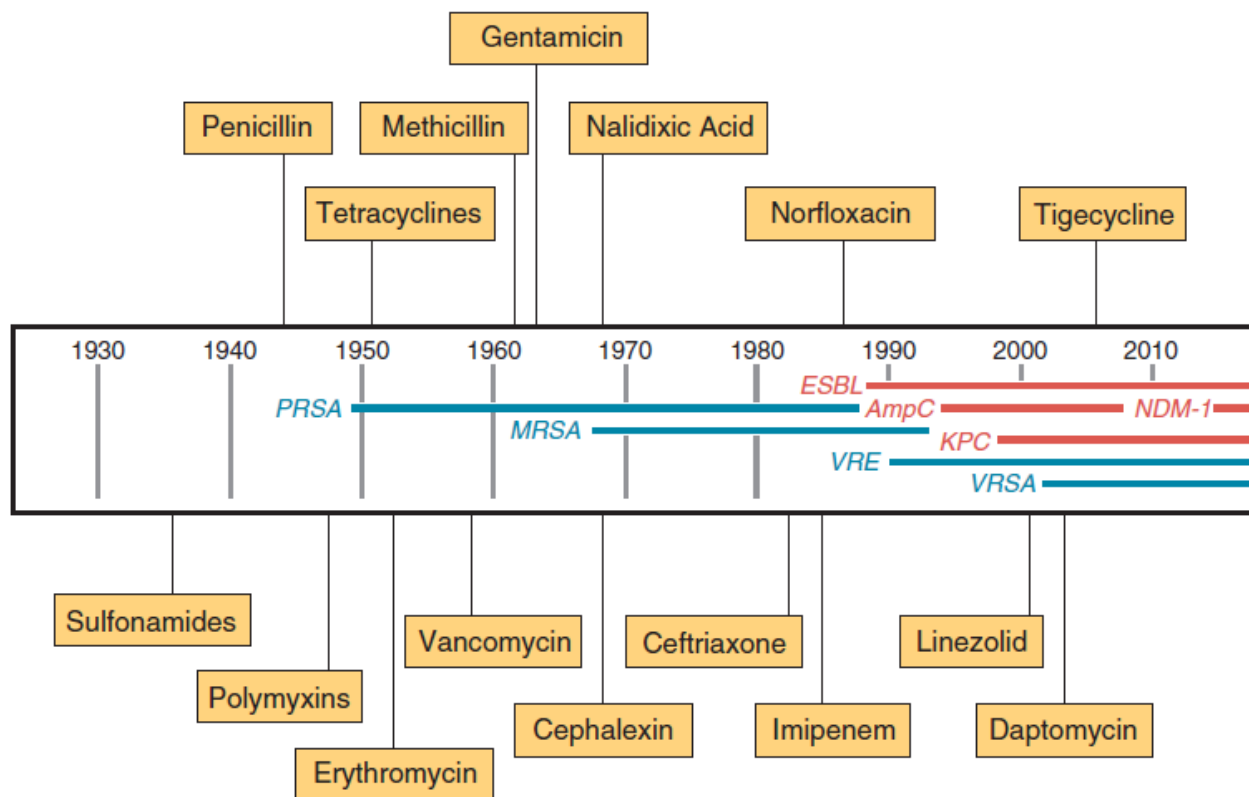
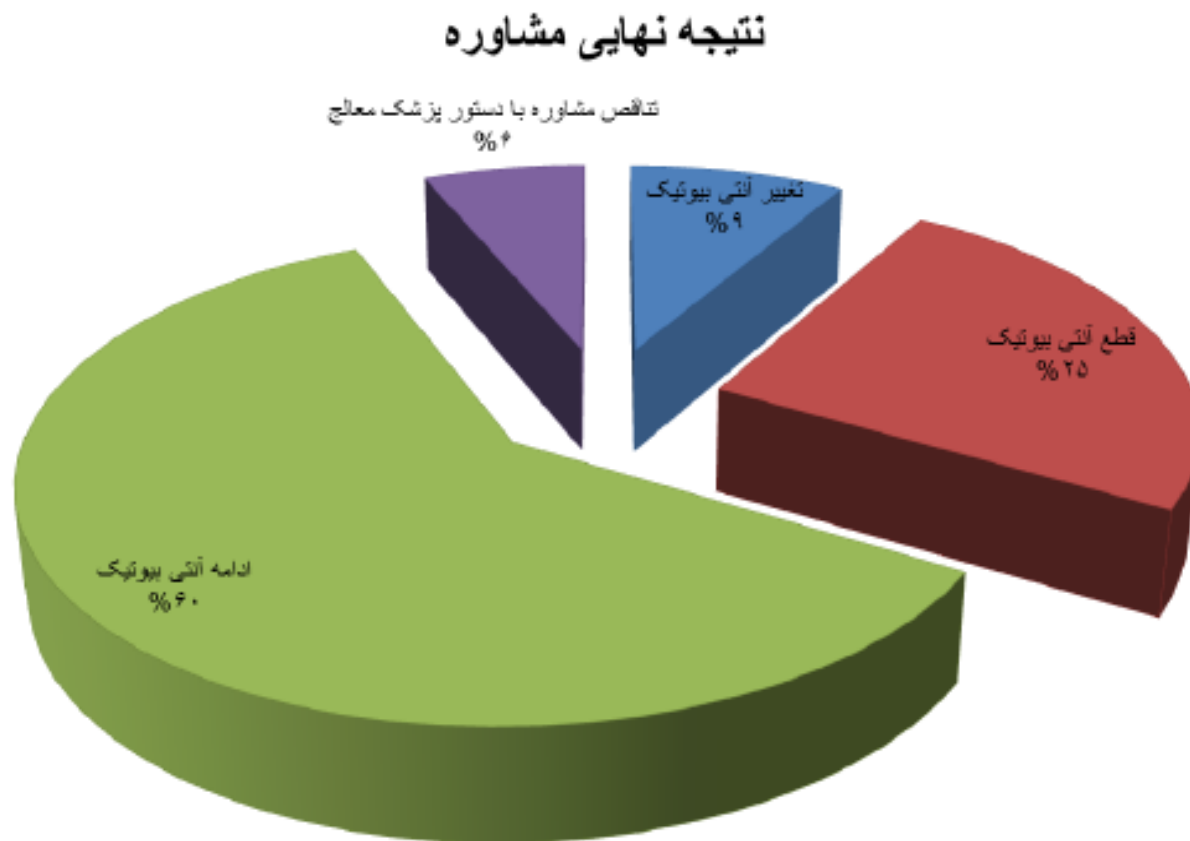


FIGURE 14-10 Antibiotic and resistance timeline. This timeline indicates the approximate dates that the major antibiotic classes or important antibiotics of each class were introduced into clinical use. The dates that resistant organisms were identified are shown in the center of the timeline. AmpC, AmpC-producing *Enterobacteriaceae*; ESBL, extended-spectrum β -lactamase-producing *Enterobacteriaceae*; KPC, *Klebsiella pneumoniae* carbapenemase-producing *Enterobacteriaceae*; MRSA, methicillin-resistant *Staphylococcus aureus*; NDM-1, New Delhi metallo- β -lactamase-1-producing *Enterobacteriaceae*; PRSA, penicillin-resistant *S. aureus*; VRE, vancomycin-resistant *Enterococcus*; VRSA, vancomycin-resistant *S. aureus*. (From Molton JS, Tambyah PA, Ang BS, et al. The global spread of healthcare-associated multidrug-resistant bacteria: a perspective from Asia. Clin Infect Dis. 2013;56:1310-1318.)



نتیجه نهایی مشاوره



دستور العمل ها

SUPPLEMENT ARTICLE

Identifying Best Practices Across Three Countries: Hospital Antimicrobial Stewardship in the United Kingdom, France, and the United States

COMBATING ANTIBIOTIC RESISTANCE: Policies To Promote Antimicrobial Stewardship Programs

A Strategy for the Control of
Antimicrobial Resistance in Ireland



Policy Statement on Antimicrobial Stewardship (SHEA), the Infectious Diseases Society of America (IDSA)
Author(s): Society for Healthcare Epidemiology of America and Pediatric Infectious Diseases Society
Source: *Infection Control and Hospital Epidemiology* (April 2012),
Published by: Cambridge University Press
Stable URL: <http://www.jstor.org/stable/41400000>
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Antibiotic



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PRACTICAL GUIDE TO ANTIMICROBIAL STEWARDSHIP IN HOSPITALS

Core Elements
of Hospital Antibiotic
Stewardship Programs



National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion



کلیپ های آموزشی مصرف منطقی آنتی بیوتیک ها

<http://medicine.tums.ac.ir/infectious-disease/en/page/stewardship>



پاندمی بعدی ... پاندمی میکروب های مقاوم





از توجه شما متکرم

