

# Rationell antibiotikaanvändning i Mellanöstern?!

Ulrika Snygg-Martin

Infektion

Sahlgrenska Universitetssjukhuset

The screenshot shows the website for the World Health Organization's Regional Office for the Eastern Mediterranean. The header includes the WHO logo, the text 'World Health Organization' and 'REGIONAL OFFICE FOR THE Eastern Mediterranean', and language options for Arabic and French. A navigation bar contains links for 'Health topics', 'Data and statistics', 'Media centre' (highlighted), 'Information resources', 'Countries', 'Programmes', and 'About Us'. Below the navigation bar is a 'Media centre' section with a blue banner. The banner features the text 'THE FUTURE OF ANTIBIOTICS DEPENDS ON ALL OF US' in white and yellow, with a large illustration of a purple and white capsule and a white tablet. At the bottom of the banner, it says 'World Antibiotic Awareness Week 2019'. There are also social media icons for YouTube, RSS, Twitter, and Facebook.

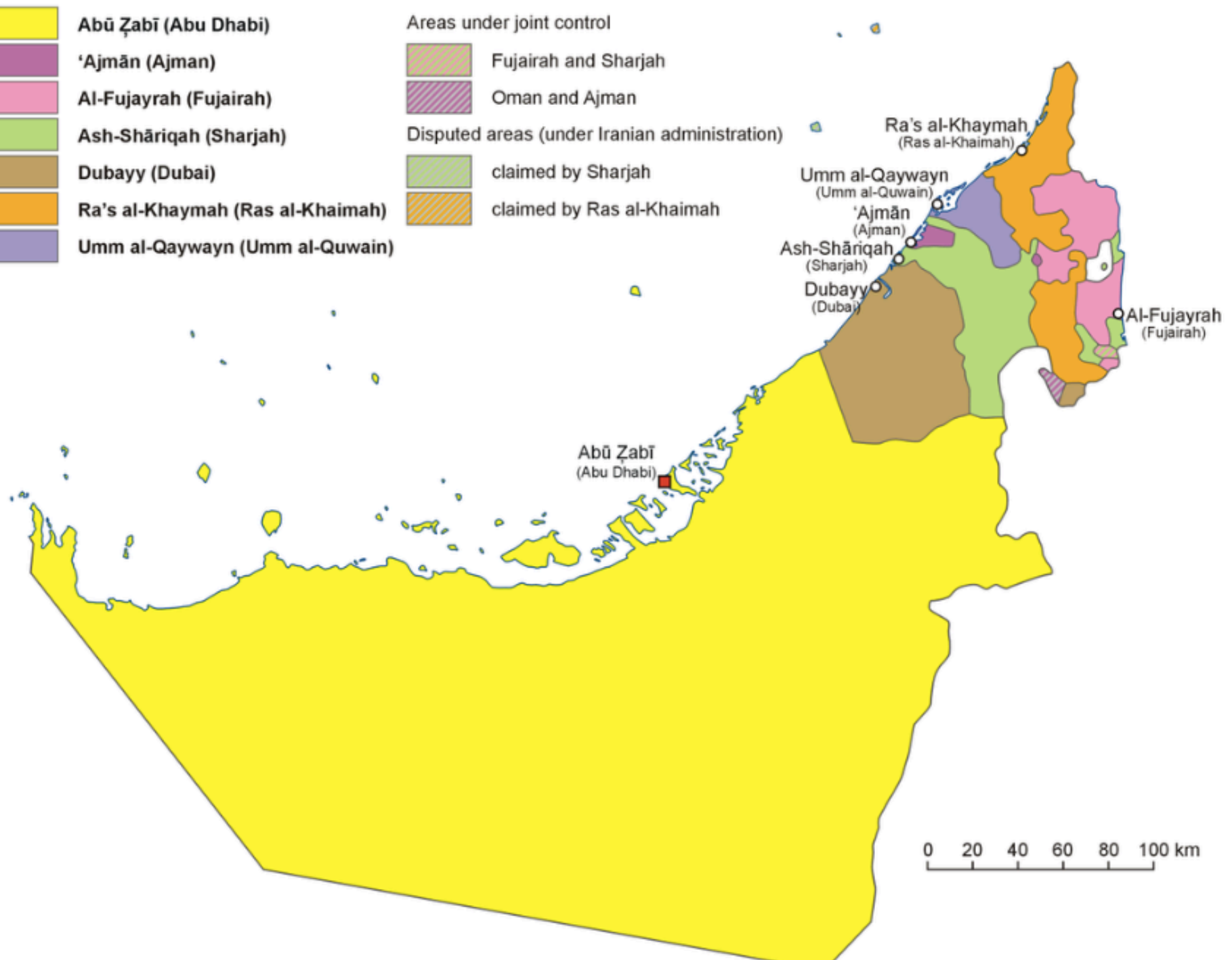
# United Arab Emirates (UAE)



- 75 mil kust
- Fyra femtedelar öken
- Temperatur upp till 48° på sommaren, medeltemp på vintern runt 24°
- Vattentemp > 33° på sommaren, 22-24° på vintern
- 6-7 cm regn per år

- Abū Ḥabī (Abu Dhabi)
- 'Ajmān (Ajman)
- Al-Fujayrah (Fujairah)
- Ash-Shāriqah (Sharjah)
- Dubayy (Dubai)
- Ra's al-Khaymah (Ras al-Khaimah)
- Umm al-Qaywayn (Umm al-Quwain)

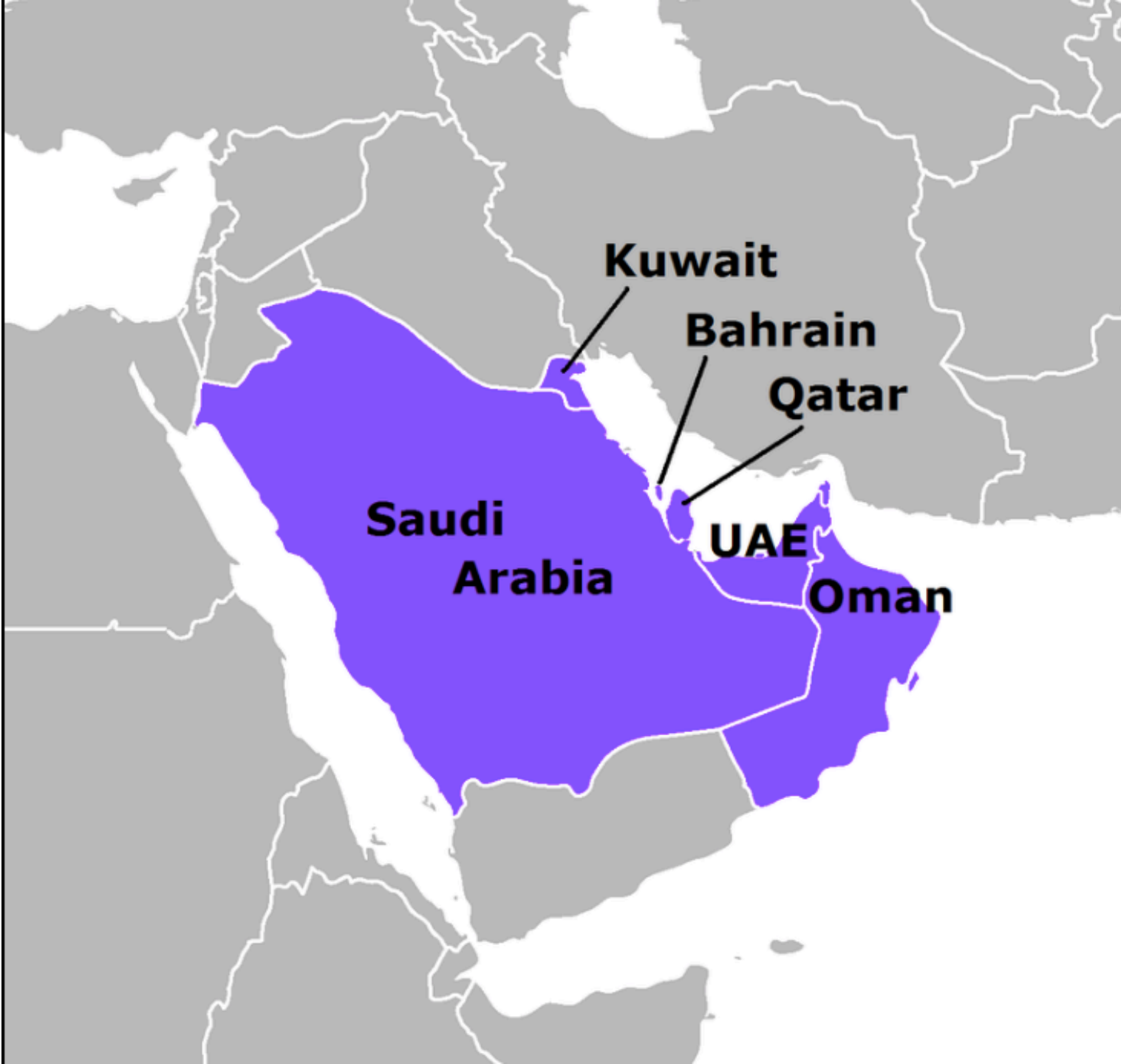
- Areas under joint control
- Fujairah and Sharjah
  - Oman and Ajman
- Disputed areas (under Iranian administration)
- claimed by Sharjah
  - claimed by Ras al-Khaimah



# United Arab Emirates (UAE)



- Sju emirat med varsin sheikh (emir, ruler)
- Abu Dhabi störst till ytan och rikast, mest olja
- Dubai största staden (2,4 milj, eller 1,3?)
- Sharjah mest konservativa emiratet
- ”De norra emiraten” mindre utvecklade
- Medlem i Gulf Cooperation Council (GCC)



**Kuwait**

**Bahrain**

**Qatar**

**Saudi  
Arabia**

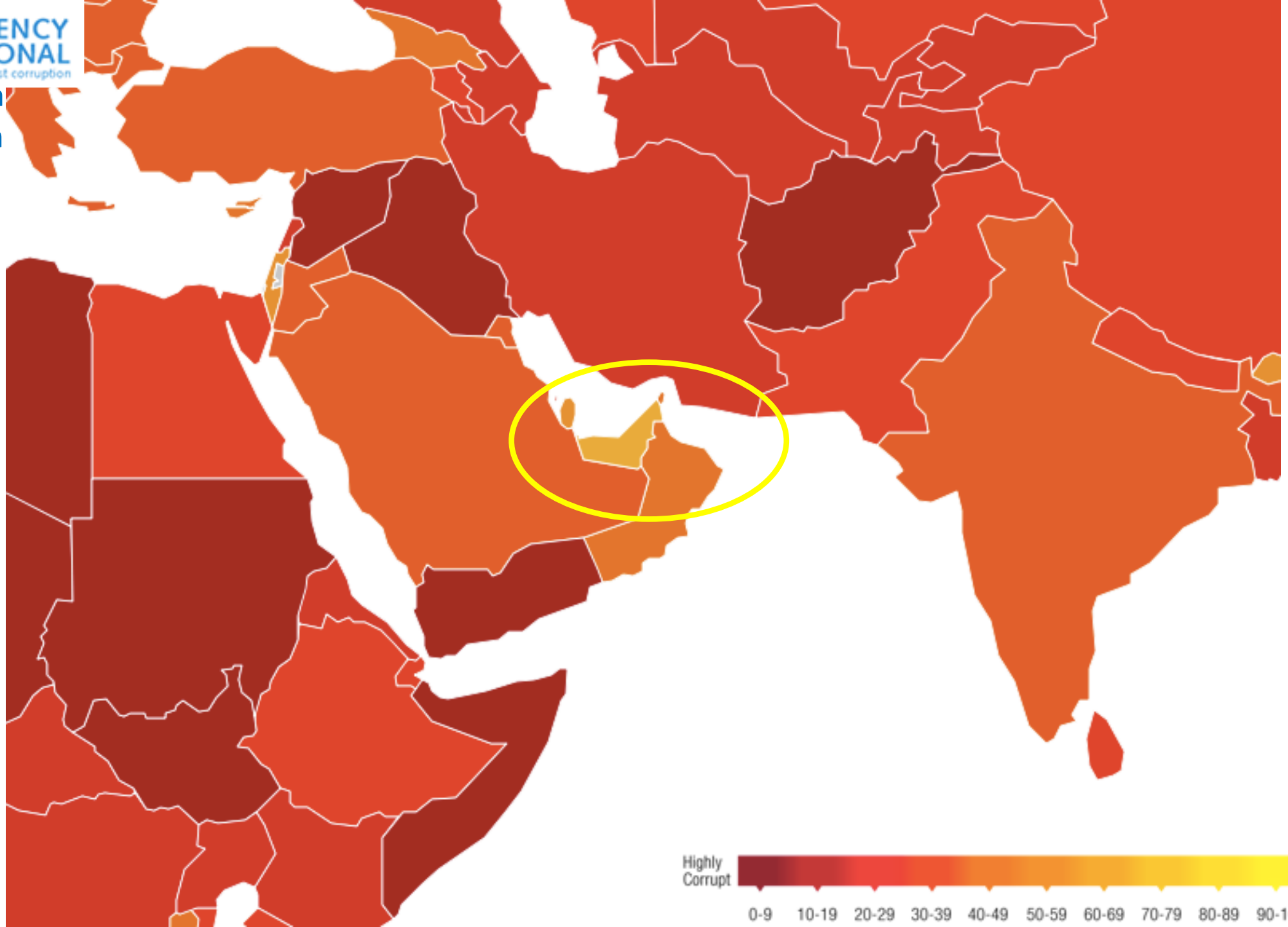
**UAE**

**Oman**

# United Arab Emirates (UAE)



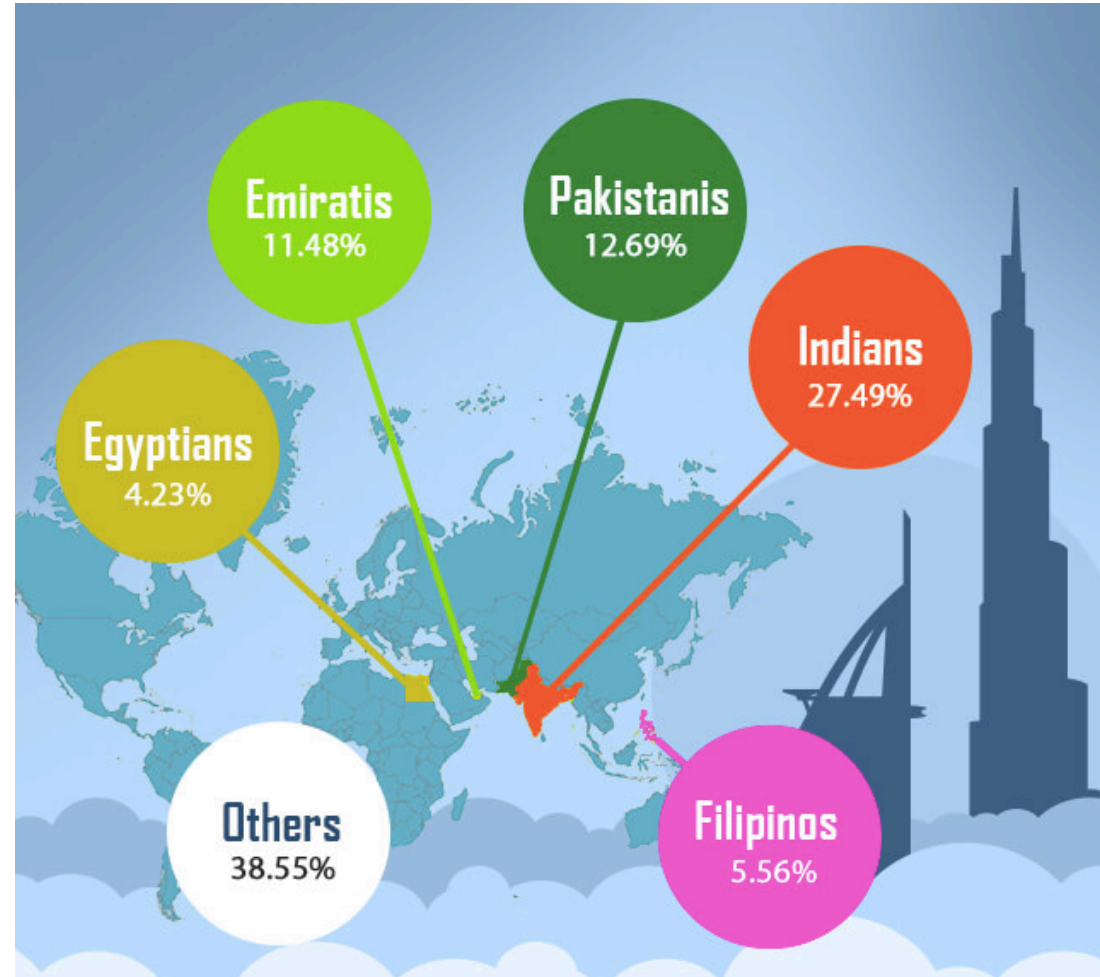
- 1820: Fredsavtal med **Storbritannien** för att bekämpa piratväldet längs Gulfkusten **Trucial coast**
- 1892: UK kontrollerar utrikeshandel, internt styre bibehållet
- 1952: Trucial Council för ökat samarbete
- 1966: Sheikh Zayed Bin Sultan Al Nahyan styr Abu Dhabi. Blir sen landsfader, styr landet till 2004
- 1968: plan för UK's tillbakadragande av trupper
- **1971**: UAE bildas



# United Arab Emirates (UAE)

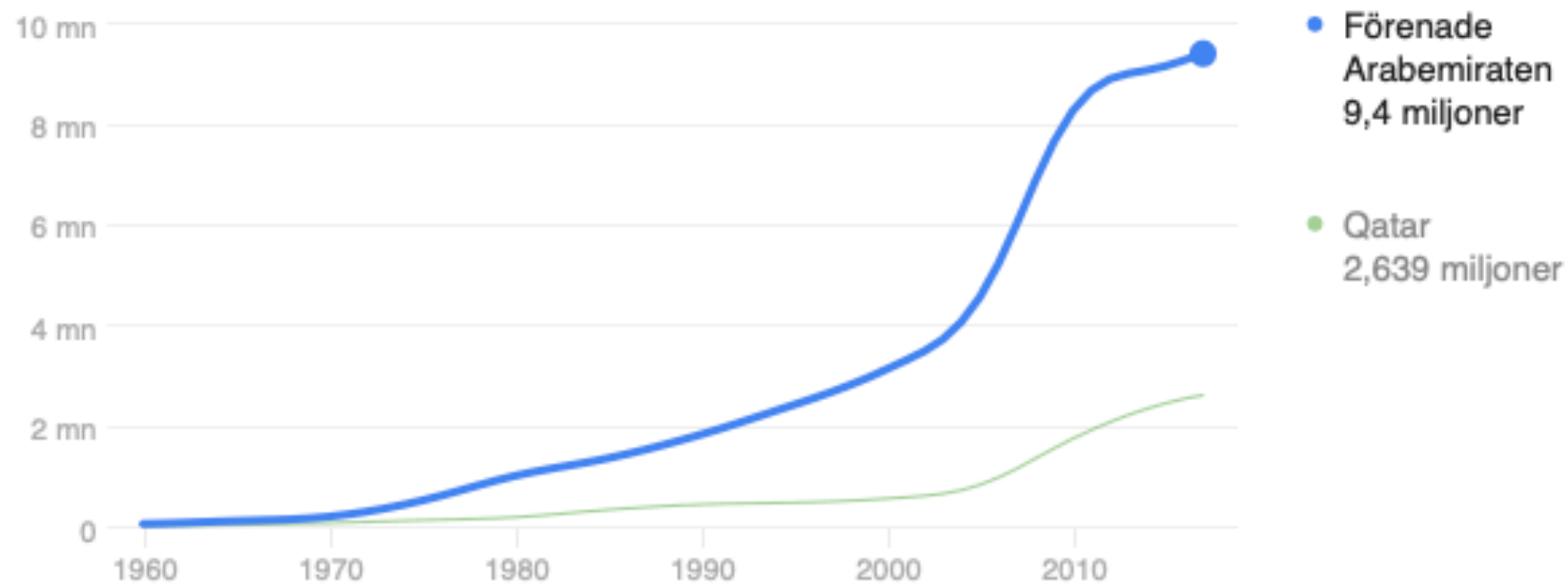


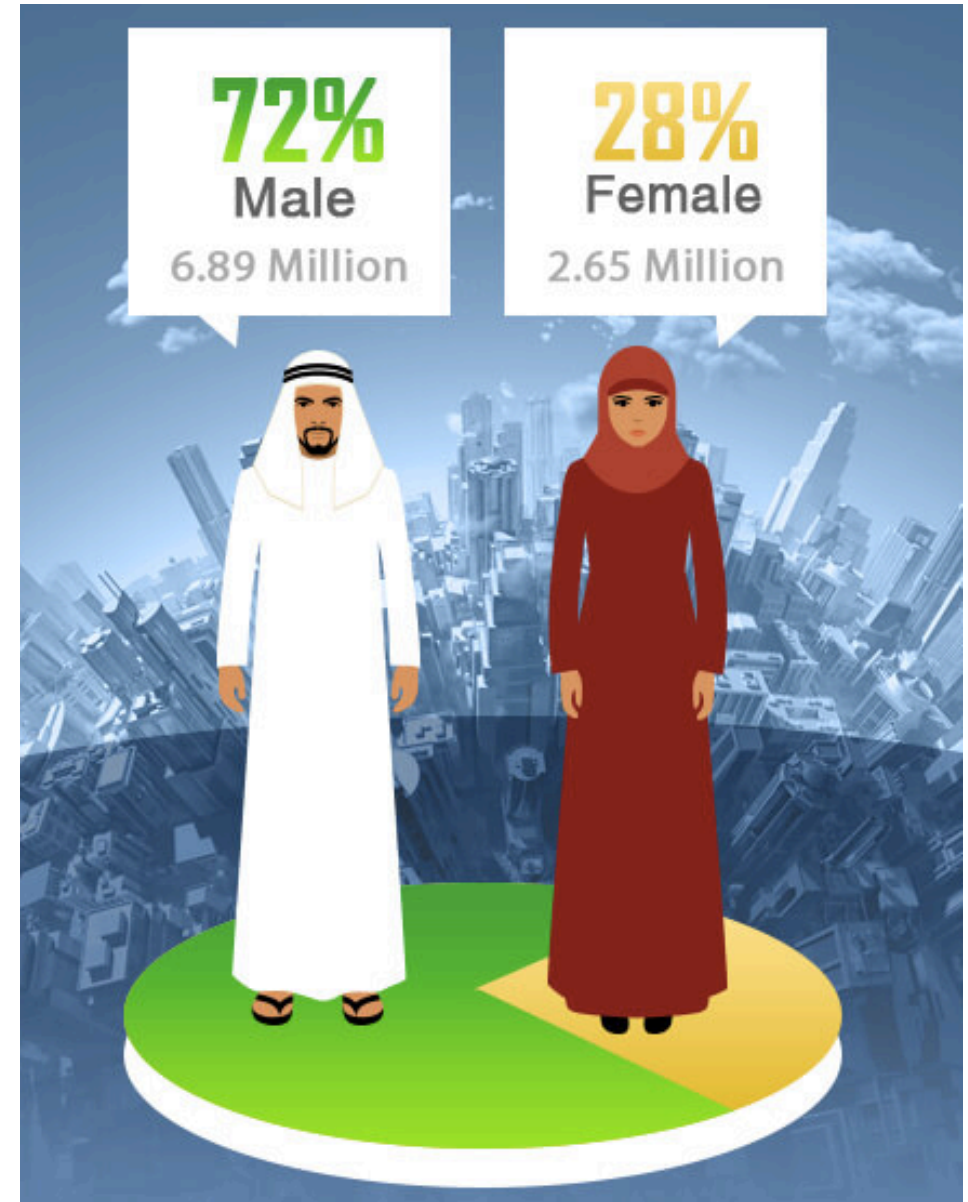
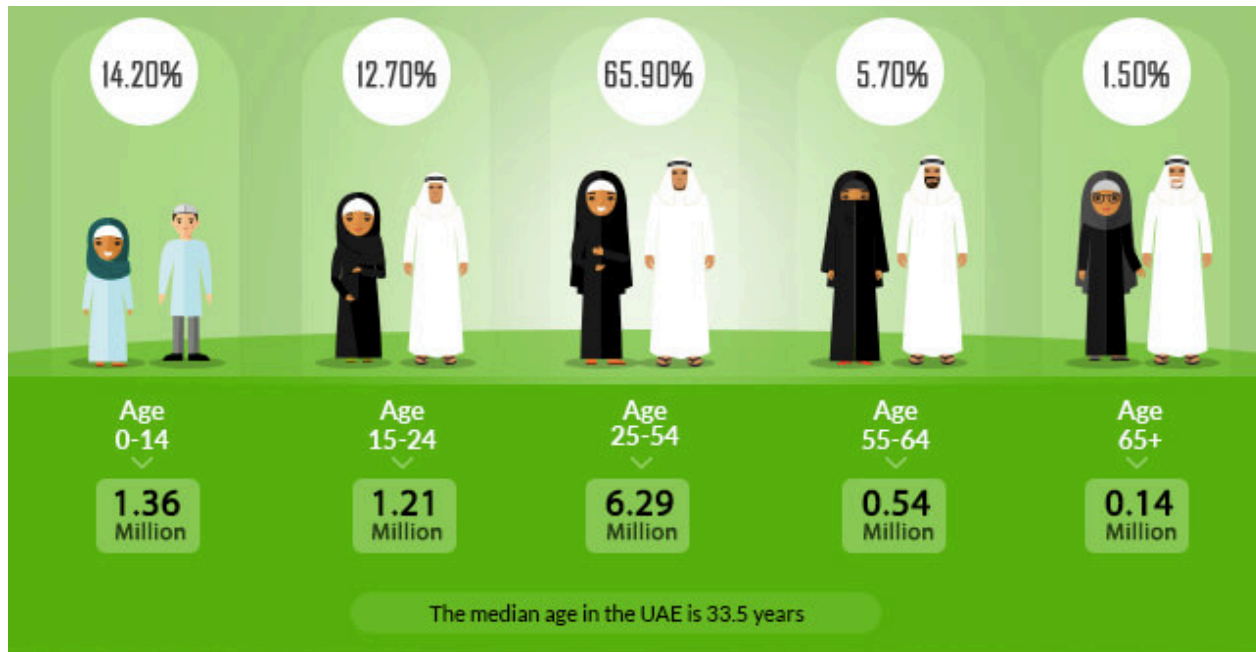
- 9,7 miljoner invånare
- 10-12 % emiratier



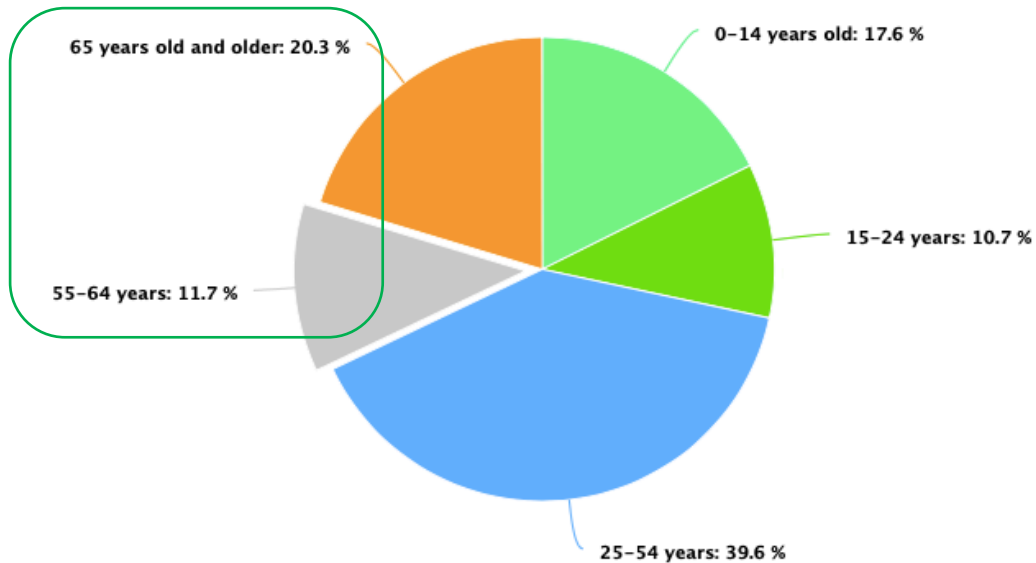
## Förenade Arabemiraten / Befolkning

# 9,4 miljoner (2017)





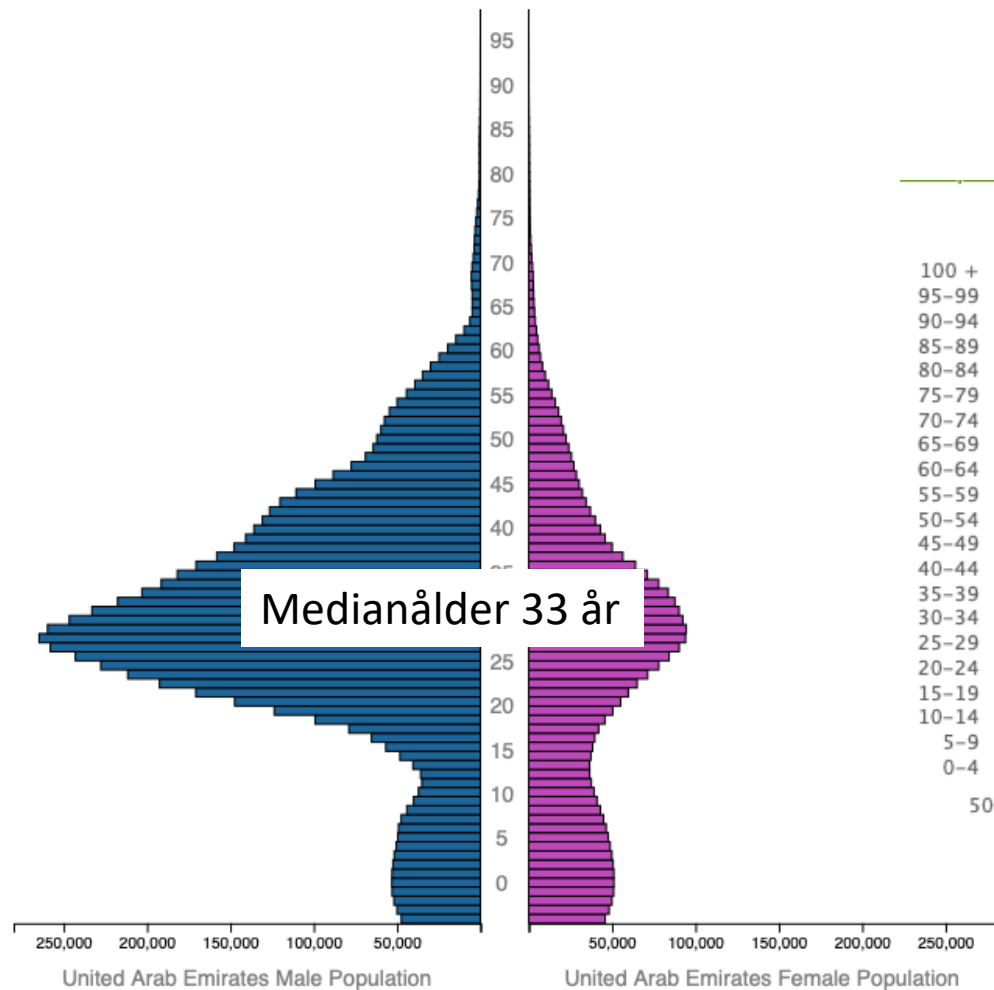
Sweden (2020 population)



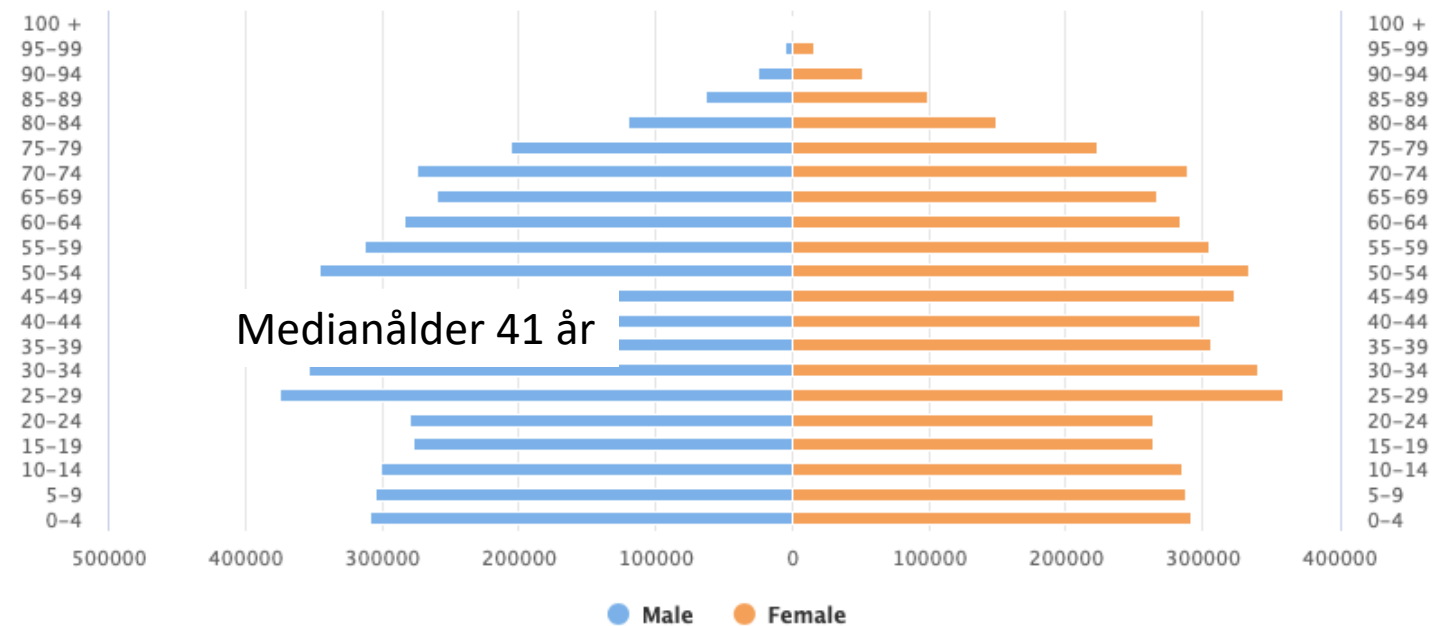
# Förenade Arabemiraten (UAE)

# Sverige

United Arab Emirates Population Pyramid 2019



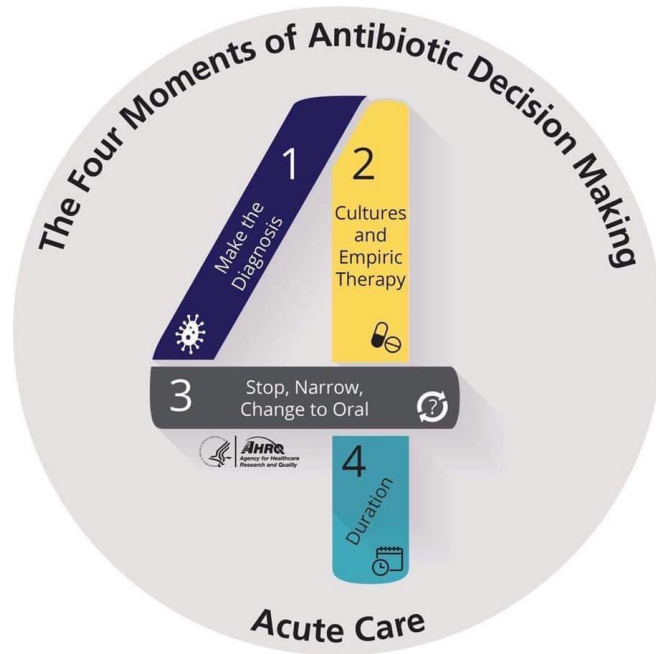
Sweden (2020 population)



Lancet. 2019 Oct 12;394(10206):1311-1312. doi: 10.1016/S0140-6736(19)32306-2.

## AMR in the Middle East: "a perfect storm".

Devi S.



عام التسامح  
YEAR OF TOLERANCE

31<sup>st</sup> 4<sup>th</sup>  
ICC GCCMID  
DUBAI 6-9 NOVEMBER 2019  
DUBAI INTERNATIONAL CONVENTION AND EXHIBITION CENTRE

31<sup>st</sup> International Congress of Antimicrobial Chemotherapy (ICC)  
4<sup>th</sup> Gulf Congress of Clinical Microbiology & Infectious Diseases (GCCMID)

**PROGRAM**

21 European CME credits (ECMEC's)  
by the European Accreditation Council for Continuing Medical Education (EACCME)

23 CME Credits  
by World Congresses for Health Professionals

43.5 CME Credits  
by Saudi Health Authority (SHA)

ORGANIZED BY



DESTINATION PARTNER



14:30 - 14:45

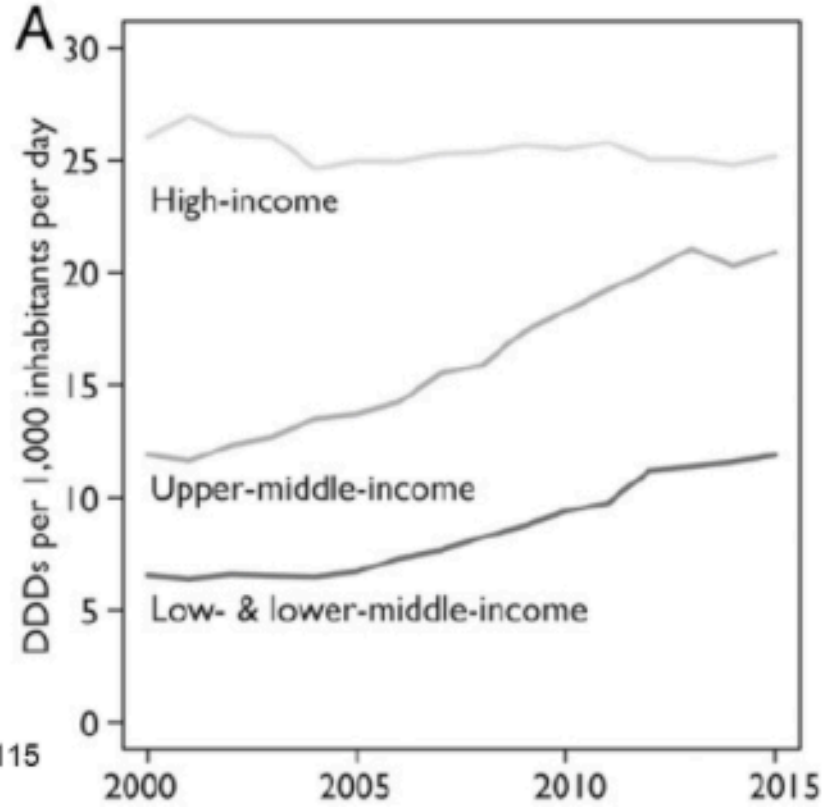
**Antimicrobial Stewardship Program in Ambulatory Care**

Aishah Yaaqib, *Pharmacy Manager,*  
*Ambulatory Healthcar Services, UAE*



# Global increase and geographic convergence in antibiotic consumption between 2000 and 2015

Eili Y. Klein<sup>a,b,c,1</sup>, Thomas P. Van Boeckel<sup>d</sup>, Elena M. Martinez<sup>a</sup>, Suraj Pant<sup>a</sup>, Sumanth Gandra<sup>a</sup>, Simon A. Levin<sup>e,f,g</sup>, Herman Goossens<sup>h</sup>, and Ramanan Laxminarayan<sup>a,f,i</sup>



[www.pnas.org/cgi/dol/10.1073/pnas.1717295115](http://www.pnas.org/cgi/dol/10.1073/pnas.1717295115)



# Hospital adoption of antimicrobial stewardship programmes in Gulf Cooperation Council countries: A review of existing evidence



Saleh Alghamdi<sup>a</sup>, Nada Atef Shebl<sup>a</sup>, Zoe Aslanpour<sup>a</sup>, Atef Shibl<sup>b</sup>, Ilhem Berrou<sup>c,\*</sup>

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<sup>b</sup> Department Microbiology and Immunology, College of Medicine, Al Faisal University, P.O. Box 50927, Riyadh 11533, Saudi Arabia

<sup>c</sup> Department of Nursing & Midwifery, University of the West of England, Bristol BS16 1DD, UK

scriptions are deemed unnecessary or inappropriate [17,18]. In the GCC region, retail trends of antimicrobials are high and continue to rise; sales increased from 27 844 defined daily doses (DDD) per 1000 population in the year 2000 to 38 788 DDD/1000 population in 2015 in Saudi Arabia, UAE and Kuwait alone [19]. Most of this inappropriate antimicrobial usage occurs outside hospitals, as non-prescription access to antimicrobials in the community is widely common in the region. However, interventions to improve antimicrobial usage and to reduce antimicrobial resistance have widely focused on hospital settings. These interventions typically involve the adoption of an antimicrobial stewardship programme (ASP).

27 DDD/person/år

38 DDD/person/år

# Hospital adoption of antimicrobial stewardship programmes in Gulf Cooperation Council countries: A review of existing evidence



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stewardship practices [31,32]. Another study in a Saudi hospital reported a reduction in antimicrobial consumption to 376 DDD/1000 patient-days compared with 2404 DDD/1000 patient-days pre-ASP adoption [48]. The study further reported a reduction in length of stay and a decrease in mortality rate from 33% to 17% [48].

84%  
reduktion



مستشفى الشيخ  
خليفة - العام

SHEIKH KHALIFA  
HOSPITAL - GENERAL





PATIENT SERVICES



BUSINESS SERVICES



Find a Facility



Donate Blood



Careers



Health Education



Patient Portal



Tenders



Virtual Tour >>

Abu Dhabi



السياحة  
العلاجية  
MEDICAL  
TOURISM



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EDITORIAL



<http://www.elsevier.com/locate/jiph>

# The strategic plan for combating antimicrobial resistance in Gulf Cooperation Council States



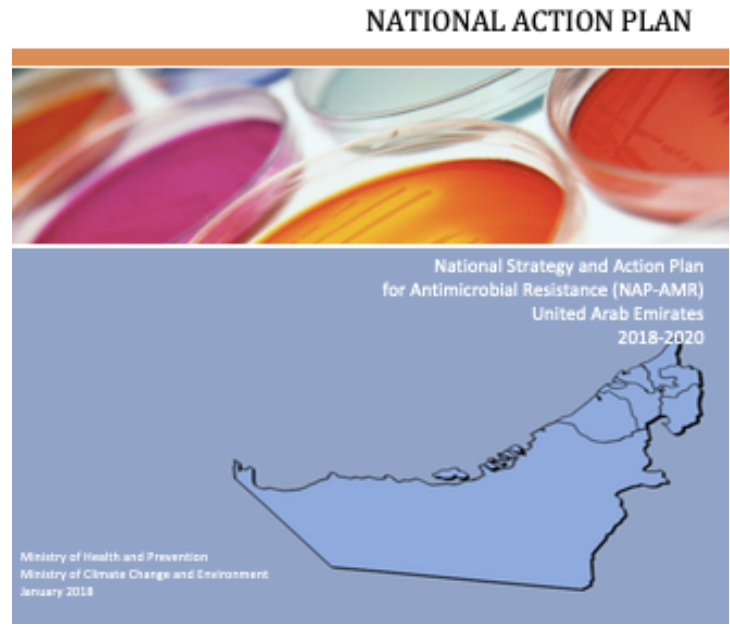
Hanan H. Balkhy<sup>a,b,c,\*</sup>, Abdullah M. Assiri<sup>d</sup>, Haifa Al Mousa<sup>e</sup>,  
Seif S. Al-Abri<sup>f</sup>, Huda Al-Katheeri<sup>g</sup>, Huda Alansari<sup>h</sup>,  
Najiba M. Abdulrazzaq<sup>i</sup>, Awa Aidara-Kane<sup>j</sup>, Didier Pittet<sup>k</sup>



Hanan Balkhy

King Saud bin Abdulaziz University for Health Sciences | KSAU-HS · College of Medicine  
:il 38.99

# National action plan for antimicrobial resistance NAP-AMR UAE



## Antibiotic resistance surveillance

Table 2.4.1: National AMR Surveillance Sites

United Arab Emirates Ministry of Health & Prevention	هيئة الصحة بدبي Dubai Health Authority	هيئة الصحة Health Authority	وزارة الصحة Ministry of Health & Prevention
<ul style="list-style-type: none"> <li>Al Baraha hospital</li> <li>Qassimi hospital</li> <li>UAQ hospital</li> <li>Fujairah hospital</li> <li>Obaidullah hospital</li> </ul>	<ul style="list-style-type: none"> <li>Dubai hospital</li> <li>Rashid hospital</li> <li>Latifa hospital</li> </ul>	<ul style="list-style-type: none"> <li>SKMC hospital</li> <li>Mafraq hospital</li> <li>Rahba hospital</li> <li>Tawam hospital</li> <li>Al Ain hospital</li> <li>Madinat Zayed hospital</li> </ul>	<ul style="list-style-type: none"> <li>Sheikh Khalifa General Hospital (UAQ)</li> <li>Sheikh Khalifa Specialized Hospital (RAK)</li> <li>Sheikh Khalifa Medical City (Ajman)</li> </ul>

Note: This list may be subject to change depending on requirements and criteria for surveillance sites, and as more sites (e.g. from private sector) are joining the National AMR Surveillance program.

## Antimicrobial stewardship program

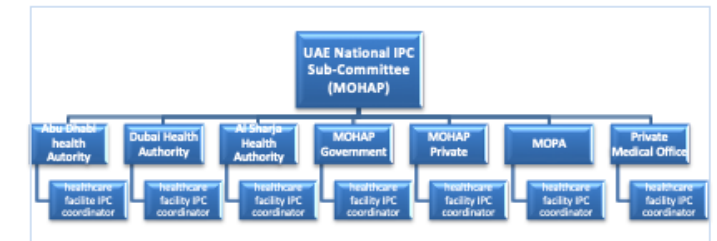
Table 3.6.1: Monitoring and evaluation plan for Strategic objective 1: Key performance indicators for National Antimicrobial Stewardship Mandate

	Planning Baseline	Input Basic resources	Process Activities	Output Results at level of sub-process	Outcome Results at level of population	Impact Ultimate impact in long term
Description/Examples	Situational analysis, needs assessment, resource analysis, synthesis of published research, ...	Policies and legislations, guidelines, standards, funding, human resources, communication facilities and materials, equipment and consumables	Research, surveillance, training, coordination, management, engagement, promotion, social mobilization, media campaigns, prevention and control, standard operating procedures and tools, quality assurance, technical support, stewardship...	Implemented programmes, networks and coordination mechanisms, resources mobilized, innovation promoted, improved methods, research agenda, laboratory capacity, good laboratory and epidemiological data, feedback to data providers, trained staff, educated public...	Greater awareness and knowledge, better behaviour, wider population coverage and access, sustainable financing, moderated consumption, stewardship and diagnosis, completeness of reporting, use of surveillance data...	Prevalence of AMR and preventable infections, attributed mortality, social impact, macroeconomic impact, microeconomic impact...
Key performance indicator	<ul style="list-style-type: none"> <li>Situational and gap analysis conducted</li> <li>Review of guidelines and international examples conducted</li> <li>National strategic and action plan for Antimicrobial Stewardship drafted (this plan)</li> </ul>	<ul style="list-style-type: none"> <li>National Antimicrobial Stewardship surveillance plan approved (this plan)</li> <li>Terms of reference available for national Sub-Committee for Antimicrobial Stewardship</li> <li>National Antimicrobial Stewardship standards developed and approved</li> </ul>	<ul style="list-style-type: none"> <li>Number of acute care hospitals and ambulatory surgery centers implemented Antimicrobial Stewardship</li> </ul>	<ul style="list-style-type: none"> <li>Percentage of Acute care hospitals and ambulatory surgery centers compliant with National Antimicrobial Stewardship Standards</li> </ul>	<ul style="list-style-type: none"> <li>Decrease in inappropriate use of antimicrobials in acute care hospitals and ambulatory surgery centers</li> </ul>	<ul style="list-style-type: none"> <li>Decrease in resistance observed amongst monitored multi-drug resistant organisms</li> </ul>

## Infection prevention and control

### 4.4 National Infection prevention and control program

Structure: UAE National Infection Prevention and Control (IPC) Program



	E.Coli % Sensitive VITEK Data						
Year	2013	2014	2015	2016	2017	2018	2019 (Jan to Jun)
(n)	103	461	553	591	446	630	320
Ceftriaxone	61	62.5	63	60	58	59	53
Coamoxi/clav	65	67	66	76	72	72	76
Pip/Taz	88	91	91	92	90	93	93
Meropenem	100	100	100	99	99	99	98
Ciprofloxacin	66	67	61	64	61	63	59
Nitrofurantoin	85	85	90	93	94	93	92
Gentamicin	78	83	83	85	85	84	88
Amikacin	100	99	100	99.5	99	99.5	100

# MRSA (%)



N= 520

N= 292

2013

2014

2015

2016

2017

2018

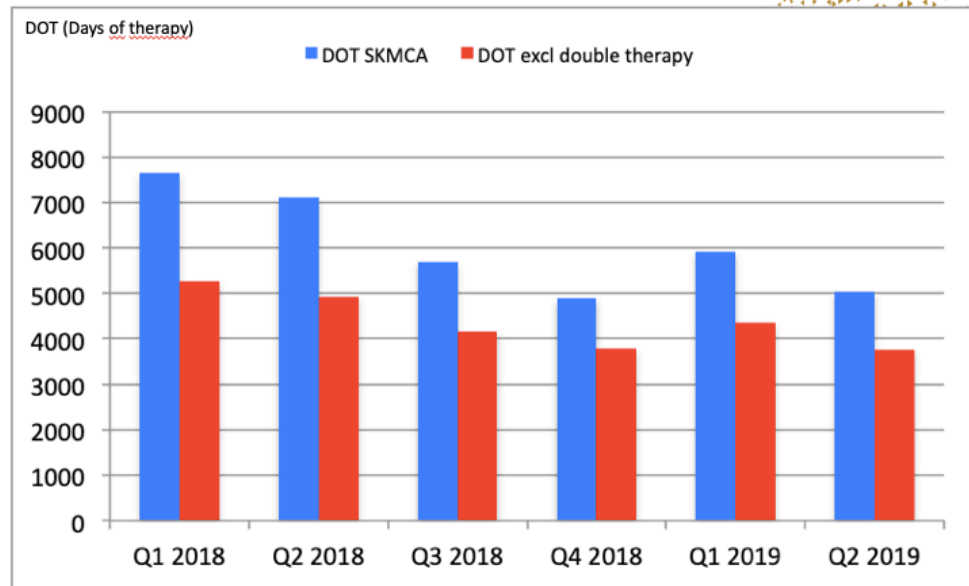
2019 (6M)

# Antimicrobial stewardship program (policy)

- **2.1 Antimicrobial stewardship team**
- **2.2 Antibiotic (antimicrobial) prescribing**
- **2.3 Restricted antibiotics (antimicrobials)**
- **2.4 Prospective audit and feedback**
- **2.5 Cultures before antibiotic administration**
- **2.6 Antibiotic (antimicrobial) list management**
- **2.7 Clinical Practice Guideline for antibiotic treatment and prophylaxis**
- **2.8 Analyze and report of antibiotic use**
- **2.9 Report on culture results and bacterial resistance rates**
- **2.10 Diagnostic stewardship**
- **2.11 Infection Control**
- **2.12 Education related to appropriate use of antibiotics and antimicrobial resistance**

## Antibiotic use (Quarter)

Days of therapy (DOT) per quarter 2018 - Q1-2 2019 SKMCA

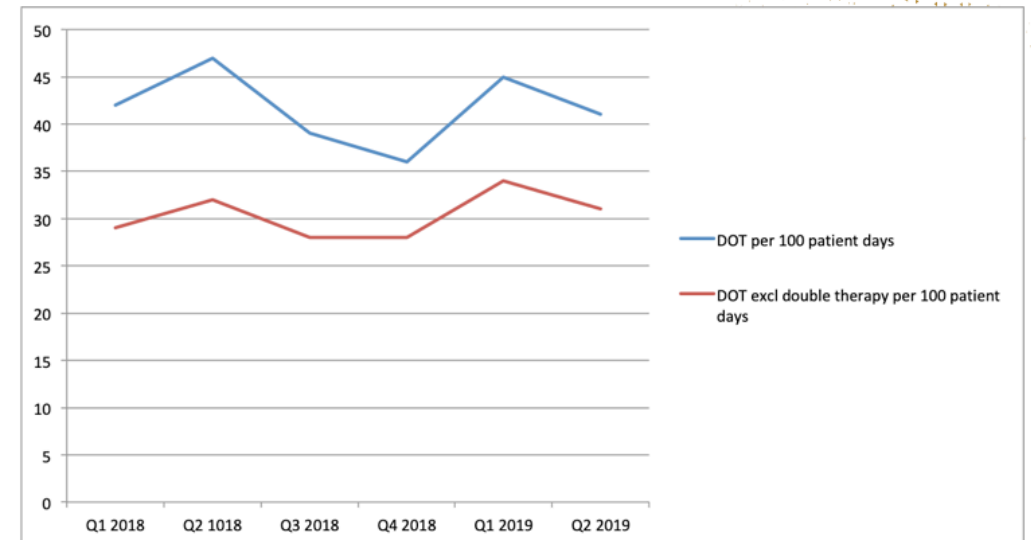


No of patient days / Q 18157 15167 14703 13566 13012 12109

## Antibiotic use (Quarter)

Days of therapy per 100 patient days 2018 - Q1-2 2019 SKMCA

DOT (Days of therapy)/  
100 patient days



## Restricted antibiotic (antimicrobial) list

- Meropenem (and other carbapenems)
- Vancomycin (and teicoplanin)
- Linezolid
- Tigecyklin
- Colistin
- Caspofungin, anidulafungin
- Non-formulary antimicrobials

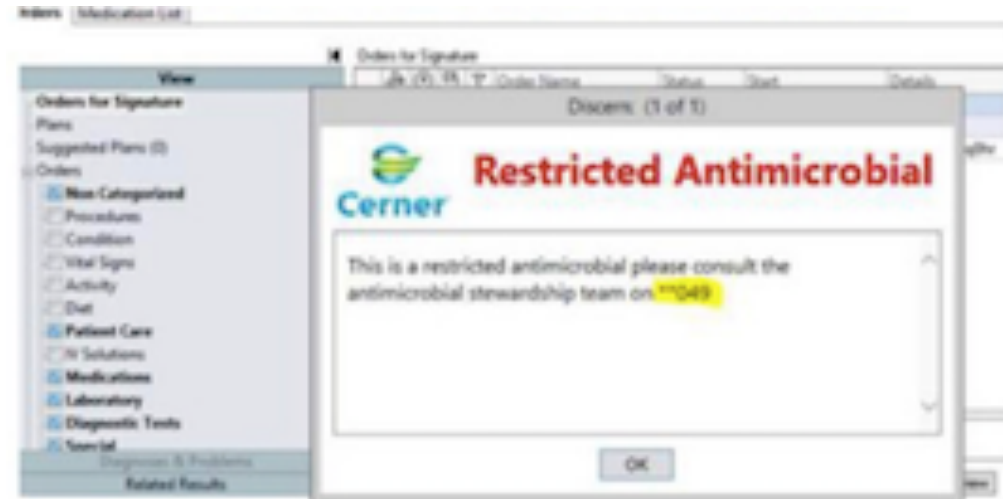
8.3.1 Restricted antibiotics (appendix 1) can be **prescribed empirically** for indications as recommended in guidelines.

8.3.2 The order should get **approval from the ID consultant within 3 days** through a written or oral consultation.

8.3.3 **Clinical pharmacist/Pharmacy should report** restricted antibiotic prescriptions to the ID Consultant within 3 days of initial prescription

# Restricted antibiotic (antimicrobial) list

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- Tigecyclin
- Colistin
- Caspofungin, anidulafungin
- Non-formulary antimicrobials



PRIMARY_MNEMONIC
meropenem
ertapenem
vancomycin
teicoplanin
linezolid
colistin
caspofungin
anidulafungin
ceftolozane-tazobactam
avibactam-ceftAZidime

# Risk stratification has been key: when is there a proven effect of antibiotics?

## No effect

- Common cold
- Tonsillitis if neg Strep A rapid test
- Acute bronchitis

## Minor/no effect?

- maxillary sinusitis
- sore throat (<3 centor) and pos StrepA
- acute otitis media (AOM) 1 - 12 years

## Reduce symptoms

- lower UTI (not quinolones)
- tonsillitis (3 or 4 Centor) + pos Strep A

## Reduce complications


- erytema migrans (Lyme/Borrelia)
- STI
- AOM < 1 year, > 12 years,
- AOM bilat, perfor., hearing deficit
- some skin and soft tissue infections

## Lifesaving

- meningitis
- septicaemia
- pneumonia
- erysipelas, fasciitis
- pyelonephritis

## Message:

”Don’t use antibiotics if there is no or only minor effect”



Imipenem+  
linezolid

Cefepime

Risk-taking can  
ruin your career

Pip-Tazo  
+ Cipro

Ceftazidime  
+Clindamycin  
+ Gentamicin  
+ Caspofungin  
+linezolid

# Key elements

---

- Dedicated work among many different professions
- **Bottom-up approach with continuous work closely with prescribers at the local level**
- Strong political support
- Regular media initiatives
- Fact-based public education
- Interactions with policy makers including the political level



## Antibiotic stewardship

“...we suggest viewing antimicrobial stewardship as a **strategy**, a coherent set of actions which promote **using antimicrobials responsibly.**”

“...continuous need for ‘responsible use’ to be **defined and translated to context-specific and time-specific action**”