

Antimicrobial Resistance Surveillance in Lebanon, A Bird Eye View

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OCTOBER 2015

Antimicrobial Resistance Committee

الجمهورية اللبنانية
وزارة الصحة العامة
الوزير
رقم المحفوظات: ٩٤ - ١/٩ يتعلق بتعديل لجنة ترشيد إستعمال المضادات الحيوية
بيروت في:

٢٠١٤
٧
إن وزير الصحة العامة
بناء على المرسوم رقم 11217 في تاريخ 2014/2/15 (تشكيل الحكومة)
بناء على المرسوم رقم 8377 في تاريخ 30/12/1961 (تنظيم وزارة الصحة)
بناء على المرسوم رقم 112 في تاريخ 12/6/1959 وتعديلاته (نظام الموظفين)
بناء على ضرورات المصلحة العامة
بناء على إقتراح مدير عام وزارة الصحة العامة،

يقرر ما يلي:

المادة الأولى: يلغى القرار رقم 1/1280 تاريخ 2010/12/17 بحيث تصبح لجنة ترشيد إستعمال المضادات الحيوية على الشكل التالي:

- | | |
|-----------|---|
| رئيساً | - الدكتورة عاتكة بري - عن وزارة الصحة (دائرة مكافحة الأمراض الانتقالية) |
| نائب رئيس | - الدكتور جاك مخياط - عن جامعة الـ LAU |
| عضواً | - الدكتورة رشا حمزا - عن وزارة الصحة (دائرة التثقيف الصحي) |
| عضواً | - الدكتورة ندى غصن - عن وزارة الصحة العامة (برنامج الرصد الوبائي) |
| عضواً | - الدكتورة ربي حسني - عن جمعية الأمراض الجرثومية |
| عضواً | - الدكتورة ريم مغنية - عن مستشفى المقاصد |
| عضواً | - الصيدلي ياسر حنيدي - عن نقابة الصيدلة |
| عضواً | - الدكتور جورج سالم - عن جمعية طب الأطفال |
| مقرراً | - الدكتور جورج أعرج - عن مستشفى الجامعة الأميركية |
| عضواً | - الصيدلي الدكتور موزل أنشيان - عن نقابة الصيدلة |
| عضواً | - الدكتورة الينار راضي - عن منظمة الصحة العالمية |

المادة الثانية: تقوم اللجنة بإعداد برامج تثقيفية بالتعاون مع نقابة الأطباء ونقابة الصيدلية، موجهة للمواطنين حول سوء إستعمال المضادات الحيوية.

المادة الثالثة: ترفع اللجنة تقارير نصف سنوية عن أعمالها لمعالي وزير الصحة العامة.

المادة الرابعة: تستعين اللجنة بمن تراه مناسباً.

المادة الخامسة: يبلغ هذا القرار حيث تدعو الحاجة.

يلتزم:

- المديرية العامة للصحة
- مديرية الوقاية الصحية
- دائرة مكافحة الأمراض الانتقالية
- دائرة التثقيف الصحي
- مجلس الخدمة المدنية
- مديرية الوقاية الصحية
- مصلحة البيوت
- أصحاب العلاقة
- منظمة الصحة العالمية
- المحفوظات

وزير الصحة العامة
وائل أبو فاعور

صورة طبق الأصل
برعت في
قام المحفل
كاتيا كتمان

Antimicrobial Resistance Task forces

- Multiple Task forces to work on multiple facets of the Problem:
- AMR Public Awareness Task Force.
- AMR Surveillance Task Force.
- Hospital Acquired Infections Task force.
- Antimicrobial Use in Hospitals Task Force.
- Antimicrobial Use in pharmacies and Dispensaries Task Force.
- Antimicrobial Use in Agriculture and animals Task force.
- Antimicrobial Use and the Lebanese Law Task force.

Antimicrobial Resistance Surveillance Task Force

- MOH Subcommittee for Antimicrobial Surveillance (Alphabetical Order):
 - Dr Atika Berry
 - Dr Dolla Karam Sarkis
 - Dr Georges Araj
 - Dr Jacques Mokhbat
 - Dr Rima Moghnieh
 - Dr Rola Husni Samaha
-
- In coordination with the National Surveillance Office of The MOH led by Dr Nada Ghosn.

AMR Surveillance: Definition

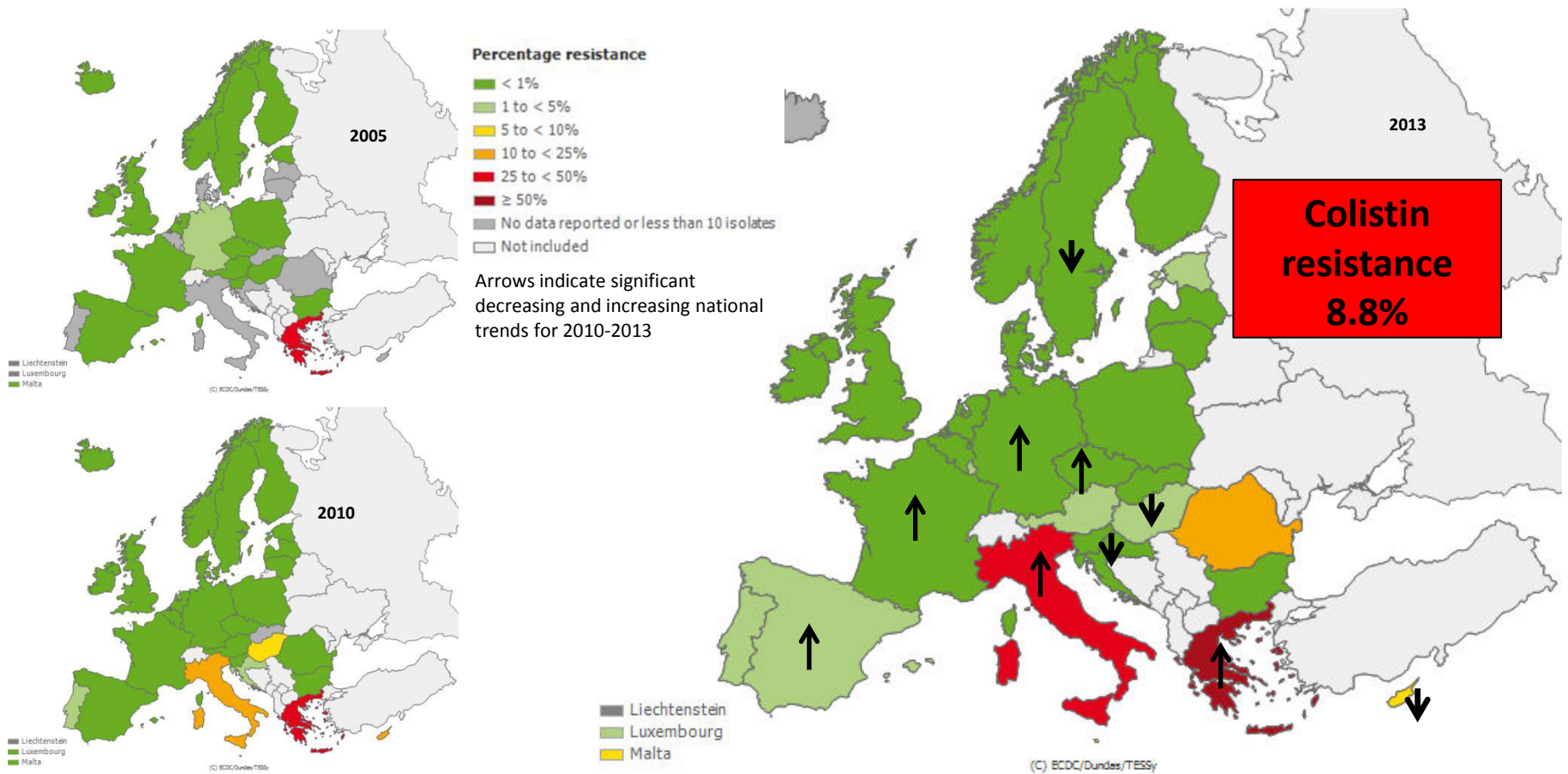
- AMR Surveillance is a:
- Systematic, **ongoing** data collection,
- Analysis and
- reporting process that
- Quantitatively monitors temporal trends in the occurrence and distribution of susceptibility and resistance to antimicrobial agents, and
- Provides information useful as a guide to medical practice, including therapeutics and disease control activities.

AMR Surveillance: How?

- Resistance rates should be obtained:
 - For well-defined microorganisms and antibiotics;
 - At regular time periods;
 - In well-defined spatial locations, i.e., country, town, hospital, or internal hospital area;
 - in precise biological or sociological clinical compartments, e.g., isolates from bacteremia, from urine, from osteomyelitis, or from individuals of a certain age, or from immigrants.
- Only in these circumstances can comparisons be made, and the differences analyzed in such a way that specific action can be taken.

Example of EARS-Net data

K. pneumoniae: percentage of invasive isolates resistant to carbapenems, 2005, 2010 and 2013. EARS-net data from ECDC



TYPES OF ANTIBIOTIC RESISTANCE SURVEILLANCE SYSTEM

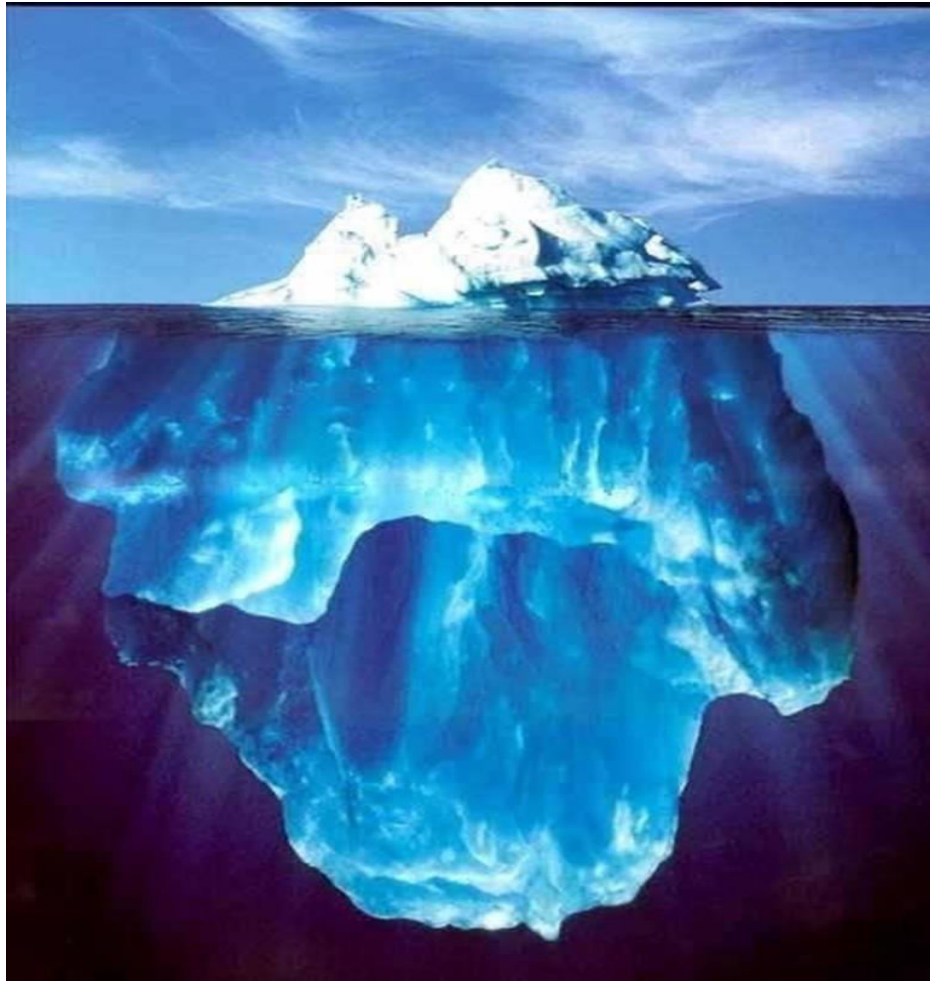
- Local surveillance systems
- Regional surveillance systems
- National surveillance systems
- International surveillance systems

Surveillance Methods for Antimicrobial Resistance

Type of surveillance system	Data quality	Sensitivity	Simplicity	Resources needed	Representativeness: Denominator
Population based	High	High	Low	High	High: denominator is the population
Sentinel site	High	Moderate	Moderate	Moderate	Moderate to low: denominator can be the number of isolates, hospital days, admissions
Aggregated antibiograms	Moderate	Low	High	Low	Low: denominator is the number of isolates submitted to the laboratory
Mandatory reporting	Low	Low	High	Low	Low: no denominator data

Katherine Fleming-Dutra, Lauri A. Hicks, & Hajo Grundmann. "Chapter 18: Surveillance for antimicrobial resistance and trends in antimicrobial utilization." Infectious Disease Surveillance, Second Edition .M'ikanatha NM, Lynfield R, Van Beneden CA, de Valk H. UK: John Wiley & Sons, Ltd 2013 274-287

What is being done in in Lebanon?



Antimicrobial Susceptibility

AUBMC



*Antimicrobial Susceptibility
Patterns of Bacterial Isolates*
at the
*American University of Beirut
Medical Center*
July 1, 2013 - June 30, 2014



For Further Information Contact

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MGH



*Antimicrobial Susceptibility
Patterns of Bacterial Isolates*
at
Makassed General Hospital
January 1, 2013 – December 31, 2013



Because We Care
Tamima Jisr, M.D.
Bassima Mehdi
Rola Hajjar
Maha Hassoun
Marwa al Tawil
Inas Mansour
Jamal Hafi

Lebanon

- Individual Hospital Antibiograms.
- Aggregated Antibiograms.
- Multicenter studies.

- What is Lacking:
- Standardization of techniques ,definitions and Breakpoints .
- Representativeness of the whole Country.
- Continuity of the surveillance.

AMR Surveillance Project

- Start with a sentinel of laboratories that are spread all over the country.
- Aiming at ultimately including most of the country laboratories.
- Phase 1: Hospital Laboratories.
- Phase 2: Community laboratories.

From a Bird Eye

- Standardise and homogenise laboratory techniques ,breakpoints and Guidelines in contributing laboratories.
- Data pooling in electronic Surveillance program(WHONET).
- Yearly data analysis and report of antimicrobial Resistance trends and emerging resistance, that help in ID Guidelines and antimicrobial policies.

Example: The Greek Experience

WHONET
Greece

Last update: 17-12-2014

DATA

- [Cumulative Results](#)
- [Incidence](#)
- [Salmonella-Shigella](#)
- [Anaerobes](#)
- [Mycobacterium tuberculosis](#)
- [Primary Health Care](#)
- [Medical Data Mining Association Rules](#)

ECDC Questionnaire 2014

EDUCATIONAL RESOURCES
(in Greek)

- [PowerPoint Presentations](#)

INFORMATION

- [Management team](#)
- [Participating centers](#)

The Greek System for the Surveillance of Antimicrobial Resistance is a Public Health initiative operating in the framework of the scientific alliance between the National School of Public Health and the Hellenic Center for Disease Control and Prevention.



[Hellenic Center for Disease Control and Prevention, Ministry of Health \(HCDCP\)](#)
[National School of Public Health \(NSPH\)](#)

The Greek System for the Surveillance of Antimicrobial Resistance is a national network for continuous monitoring of bacterial antibiotic resistance in the Greek hospitals. Its function is based on the assumption that the routine results of the antibiotic sensitivity tests performed daily in each hospital clinical laboratory should be considered as a major resource for antibiotic resistance surveillance. Moreover and since the quality and compatibility of these data are in principle uncertain, our approach is to work in parallel, on both accessing the data and assessing its quality. This is accomplished through the establishment of a quality control procedure and the adaptation of an electronic code and data format in all hospitals through the use of the [WHONET software](#). The WHONET software was originally developed by WHO Collaborating Centre for Surveillance of Antibiotic Resistance in Boston USA and further developed in the Division of Emerging and other Communicable Diseases Surveillance and Control, WHO (WHO/EMC), Geneva, Switzerland. WHONET is distributed free of charge by WHO/EMC and facilitates the management of antibiotic susceptibility test results from routine clinical isolates. A full description of the software and its potentials has been published elsewhere [\[1-3\]](#).

The analysis of the information facilitates:

1. The understanding of the trends of resistance.
2. The detection of epidemics.
3. The differentiation of epidemic from endemic infections
4. The development of a national antibiotic policy.
5. The hierarchy of priorities for further studying the genetic and molecular mechanisms responsible for the emergence of resistance.

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ECDC Questionnaire 2014

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(in Greek)

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INFORMATION

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- Studies

ΚΕΕΛΠΝΟ
ΚΕΝΤΡΟ ΕΛΕΓΧΟΥ ΚΑΙ ΠΡΟΦΥΛΑΞΗΣ ΝΟΣΗΜΑΤΩΝ ΚΕ ΕΛΛΗΝΟΣ
ΥΠΟΥΡΓΕΙΟ ΥΓΕΙΑΣ & ΚΟΙΝΩΝΙΚΗΣ ΑΛΛΗΛΕΓΓΥΗΣ
ΚΕΝΤΡΙΚΟ ΕΡΓΑΣΤΗΡΙΟ ΔΗΜΟΣΙΑΣ ΥΓΕΙΑΣ

ΕΘΝΙΚΗ ΣΧΟΛΗ ΔΗΜΟΣΙΑΣ ΥΓΕΙΑΣ

CUMULATIVE RESULTS

January - June 2014
July - December 2013
January - June 2013
July - December 2012
January - June 2012
July - December 2011
January - June 2011
July - December 2010
January - June 2010
July - December 2009
January-June 2009
July-December 2008
January-June 2008
July-December 2007
January-June 2007
July-December 2006

Acinetobacter baumannii Resistance to Imipenem (Jan-June 2014)



Acinetobacter baumannii
 resistance to **imipenem** per hospital
 All clinical specimens
 (January - June 2014)

Hospital	Medical Wards					Surgical Wards					ICU				
	%aba/total isolates	Isolates tested	%NS	%R	%I	%aba/total isolates	Isolates tested	%NS	%R	%I	%aba/total isolates	Isolates tested	%NS	%R	%I
GR005	3,6%	12	83,3	83,3	0,0	1,1%	2				12,9%	26	100,0	96,2	3,8
GR007						5,4%	2				5,4%	12	100,0	100,0	0,0
GR012	10,7%	9	66,7	66,7	0,0	17,2%	5				22,1%	27	100,0	100,0	0,0
GR014	3,8%	36	97,2	94,4	2,8	2,1%	5				16,8%	73	98,6	97,3	1,4
GR015	2,2%	2				3,6%	1				10,4%	13	100,0	100,0	0,0
GR018	2,2%	8	75,0	75,0	0,0	1,9%	4				20,8%	25	96,0	92,0	4,0
GR026	1,4%	4				0,5%	1				16,2%	11	100,0	100,0	0,0
GR030	5,4%	20	100,0	100,0	0,0	8,2%	7	100,0	85,7	14,3	16,1%	19	100,0	100,0	0,0
GR031	3,5%	28	85,7	85,7	0,0	3,6%	22	86,4	86,4	0,0	24,8%	86	98,8	98,8	0,0
GR032	3,7%	10	100,0	100,0	0,0	2,9%	3				17,7%	26	96,2	96,2	0,0
GR037	5,8%	12	58,3	58,3	0,0	14,1%	4				18,8%	7	85,7	85,7	0,0
GR039	5,1%	23	87,0	87,0	0,0	7,4%	22	95,5	90,9	4,5	14,5%	24	100,0	91,7	8,3
GR040	4,4%	22	81,8	72,7	9,1	4,9%	11	81,8	81,8	0,0	16,9%	21	100,0	100,0	0,0
GR041	5,0%	41	92,7	92,7	0,0	4,0%	11	90,9	90,9	0,0	22,2%	31	100,0	100,0	0,0

Klebsiella pneumoniae Resistance to Imipenem (Jan-Jun 2014)



Klebsiella pneumoniae % resistance to imipenem per hospital All clinical specimens (January - June 2014)

Hospital	Medical Wards					Surgical Wards					ICU				
	% kpn/total isolates	Isolates tested	%NS	%R	%I	% kpn/total isolates	Isolates tested	%NS	%R	%I	% kpn/total isolates	Isolates tested	%NS	%R	%I
GR005	12,7%	42	45,2	45,2	0,0	6,9%	12	41,7	41,7	0,0	9,9%	20	65,0	65,0	0,0
GR007	16,5%	20	35,0	35,0	0,0	8,1%	6				8,3%	20	70,0	70,0	0,0
GR012	9,5%	8	50,0	50,0	0,0	13,8%	4				22,1%	26	92,3	92,3	0,0
GR013	8,0%	21	33,3	33,3	0,0	5,3%	6				16,5%	17	70,6	70,6	0,0
GR014	10,4%	128	53,1	53,1	0,0	8,2%	28	28,6	28,6	0,0	16,8%	80	86,3	86,3	0,0
GR015	8,7%	8	12,5	12,5	0,0						16,0%	19	100,0	100,0	0,0
GR018	4,0%	16	0,0	0,0	0,0	7,9%	17	17,6	17,6	0,0	19,2%	24	70,8	58,3	12,5
GR026	4,1%	12	33,3	33,3	0,0	5,2%	10	30,0	30,0	0,0	2,9%	2			
GR030	8,0%	27	66,7	63,0	3,7	11,8%	10	80,0	80,0	0,0	18,5%	20	100,0	100,0	0,0
GR031	10,1%	83	32,5	31,3	1,2	7,8%	46	52,2	52,2	0,0	14,6%	55	54,5	52,7	1,8
GR032	13,8%	32	28,1	28,1	0,0	6,7%	6				10,2%	14	92,9	92,9	0,0
GR037	16,1%	68	47,1	41,2	5,9	17,5%	32	65,6	65,6	0,0	14,8%	23	82,6	78,3	4,3
GR039	14,0%	82	50,0	50,0	0,0	10,5%	47	61,7	55,3	6,4	11,4%	45	77,8	75,6	2,2
GR040	16,8%	117	38,5	38,5	0,0	15,5%	36	58,3	58,3	0,0	14,9%	47	91,5	91,5	0,0
GR041	12,4%	49	44,9	40,8	4,1	6,4%	12	41,7	41,7	0,0	27,8%	38	94,7	94,7	0,0
GR042	9,5%	37	18,9	16,2	2,7	14,3%	6								
GR043	19,9%	157	29,9	29,9	0,0	24,4%	10	60,0	60,0	0,0	26,3%	70	82,9	82,9	0,0
GR048	12,0%	4				9,3%	6								
GR051	6,4%	7	28,6	28,6	0,0	9,3%	7	14,3	14,3	0,0	11,0%	6			
GR055	13,5%	23	4,3	4,3	0,0	4,6%	4				13,9%	5			
GR057	10,1%	8	0,0	0,0	0,0										

Ultimate Goal

Containment of AMR for a better future in antimicrobial Therapy.

THANK YOU