



LEBANON



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Professor and Vice-Chair

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American University of Beirut

6th Mena Influenza Stakeholders Meeting

Organized by Fondation Mérieux

Prague, Czech Republic

6-7 April 2017



The Center for Infectious Disease Research (CIDR)

Established with funding from the
Department of Defense, USA and
continued funding from the Dean's
Office

History

- Established with funding from DOD (\$1,000,000): Sep 2008-Sep 2011 (12)
- 6 specific projects were funded
- Established the Infectious Diseases Research Core Facility
- Additional funding from the Dean's office to establish the CIDR (\$225,000): May 2011-May 2014

Aims

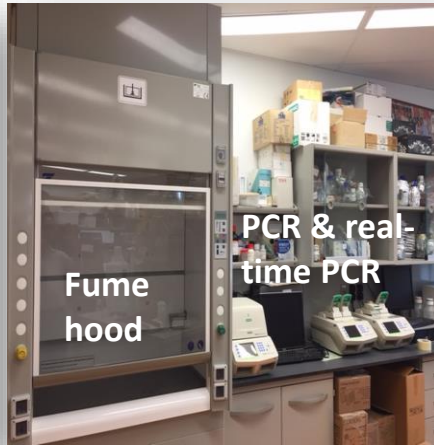
- Clinical, basic, and epidemiologic research in the area of infectious diseases with impact on relevant problems to our country and the region
- Enhancing and supporting data generation that impacts public health and policy relating to communicable diseases
- Cooperation with other medical centers, the MOH, the WHO, the CDC, and other centers with similar interests globally.

Membership from Faculty of Medicine and Faculty of Health Sciences

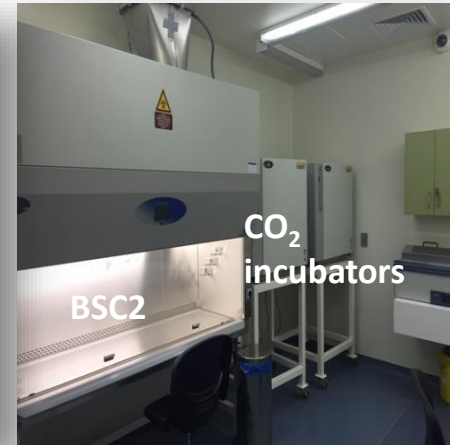
Faculty:

- Ghassan Dbaibo, M.D. (Director)
- Ghassan Matar, Ph.D. (Basic Molecular Microbiology)
- Hassan Zaraket, Ph.D. (Influenza, RSV, basic virology)
- Souha Kanj, M.D. (Health Care-Associated Infections)
- George Araj, Ph.D. (Clinical Microbiology)
- Zeina Kanafani, M.D. (Health-Care Associated Infections)
- Rami Mahfouz, M.D. (Clinical Molecular Microbiology)
- Rima Hanna-Wakim, M.D. (Pediatric Infections)
- Abdel-Rahman Bizri, M.D. (Infections in Refugees, Public Health)
- Nada Melhem, Ph.D. (HIV, Norovirus, Influenza)
- Nesrine Rizk, M.D. (HIV)
- Salim Adib, Ph.D. (Public Health and Policy)
- Ramia Zakhour, M.D. (Pediatric and Adolescent Infections)

BSL2 laboratory



BSL3 laboratory



Ongoing Projects

- Influenza studies: epidemiology (surveillance), molecular epidemiology, vaccine studies, basic studies
- Respiratory infections: RSV and other viral respiratory co-infections
- Pneumococcal studies: surveillance, burden of disease, PCR diagnosis, antibiotic resistance, and mechanisms
- Gastrointestinal infections: Rotavirus, Norovirus, and Astrovirus studies- epidemiology (surveillance, molecular typing), burden of disease.
- PulseNet (CDC)
- Rapid multiplex diagnosis and other new modalities of molecular diagnosis of infections

Ongoing Projects (continued)

- Health-care associated infections: risk factors, infection control, mechanisms
- Antimicrobial stewardship
- Central line bloodstream infections (CLABSI)
- Antibiotic resistance: molecular mechanisms
- Endocarditis
- Invasive fungal infections: Candida and Aspergillus
- Typhoid infections: risk factors, molecular typing

Future Goals, Ideas for Collaboration

- Establish a nationwide network for surveillance of influenza and other respiratory viruses potentially expand to avian species
- Establish a virology unit that can provide training and capacity to diagnose and isolate potentially emerging pathogens (MERS-CoV, H5N1) as well as other viral infections that affect our patient population
- Establish the Researcher in Infectious Diseases program in collaboration with CDC, Emory, St. Jude and funding from NIH
- Strengthen the collaboration with WHO and MOH
- Serve as regional reference center for infectious diseases

LEBANON OBJECTIVES FOR THE UPCOMING 3 YEARS

- Increase evidence based data on influenza circulating strains
 - Support Influenza surveillance Laboratory for future designation as support reference lab for NIC
 - Establish sentinel network for country surveillance (mixed out- patient & in-patient)
- Increase awareness about influenza and importance of immunization
 - Establish Advisory board to generate recommendation for immunization of risk groups
 - Develop speakers network to carry out education for public and HCPs by specialty
 - Communication on Influenza to key stakeholders: MOH and societies

LEBANON EPIDEMIOLOGICAL UPDATE

- SARI surveillance: MOH/WHO effort involving 10 hospitals (inpatients with severe acute respiratory infections)
- Sentinel surveillance: AUB/CIDR effort with 5 centers (mostly outpatients with ILI)
- Ongoing burden of disease study at a single tertiary center
- Ongoing study about attitude and knowledge about influenza vaccine among physicians and parents

SARI surveillance as reported on FluNet (5/4/17)

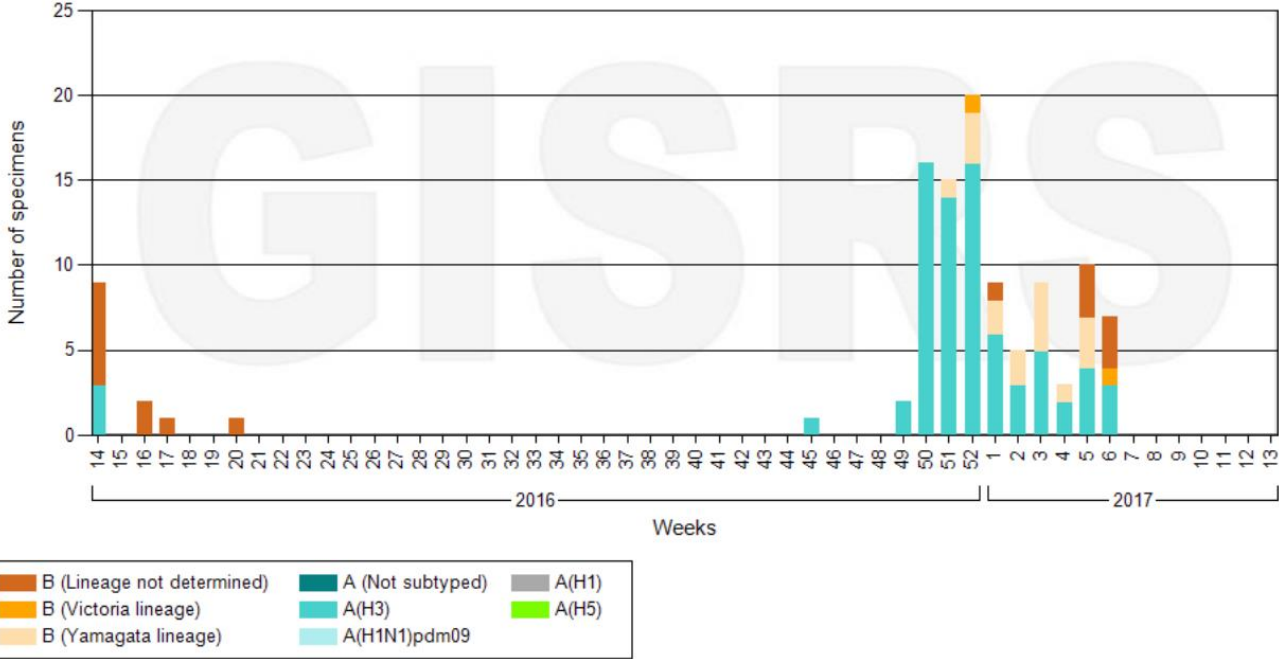


Influenza Laboratory Surveillance Information
by the Global Influenza Surveillance and Response System (GISRS)

generated on 05/04/2017 07:01:01 UTC

Lebanon

Number of specimens positive for influenza by subtype



Influenza type and subtype distribution by Gender and Age

Parameters	ILI n=288	A/H3N2 n=37	A not subtypable n=59	Influenza B n=54	Non-Influenza n=138
Gender					
Male	164(56.94)	21(56.76)	34(57.63)	34(62.96)	75(54.35)
Female	124(43.06)	16(43.24)	25(42.37)	20(37.03)	63(45.65)
Age					
<2	110(38.19)	10(27.03)	21(35.59)	18(33.33)	61(44.20)
2--4	67(23.26)	10(27.03)	16(27.12)	11(20.37)	30(21.74)
4--6	30(10.42)	5(13.51)	9(15.25)	4(7.41)	12(8.69)
6--12	47(16.32)	6(16.22)	9(15.25)	9(16.67)	23(16.67)
12--18	21(7.29)	3(8.11)	2(3.39)	9(16.67)	7(5.07)
>18	13(4.51)	3(8.11)	2(3.39)	3(5.56)	5(3.62)

Influenza type and subtype clinical features

	ILI	A/H3N2	A not subtypable	Influenza B	Non-influenza
	288	n=37	n=59	n=54	n=138
Symptoms					
Fever	279(96.88)	37(100.00)	58(98.30)	54(100.00)	130(94.20)
Headache	52(18.06)	10(27.03)	11(19.64)	18(33.33)	13(9.42)
Cough	269(93.40)	35(94.59)	54(91.52)	53(98.15)	127(92.03)
Sputum	150(52.08)	16(43.24)	34(57.63)	20(37.04)	98(71.01)
Runny Nose	258(89.58)	34(91.89)	57(96.61)	46(85.19)	121(87.68)
Tachypnea	30(10.41)	4(10.81)	4(6.78)	2(3.70)	20(14.49)
Respiratory					
Discomfort	71(24.31)	12(32.43)	15(25.42)	15(27.78)	29(21.01)
Diarrhea	75(26.04)	8(21.62)	21(35.59)	13(24.07)	33(23.91)
Abdominal Pain	45(15.63)	3(8.11)	13(22.03)	18(33.33)	11(7.79)
Nausea	33(10.42)	5(13.51)	6(10.16)	8(16.67)	14(10.14)
Vomitting	58(20.14)	5(13.51)	12(20.34)	12(22.22)	29(21.01)
Abdominal Symptoms	55(19.09)	3(8.11)	16(27.12)	19(35.19)	17(12.31)
Malaise	43(14.93)	8(21.62)	10(16.95)	11(20.37)	14(10.14)
Neurologic Symptoms	3(1.04)	1(2.70)	0(0.00)	1(1.85)	0(0.00)
Myalgia/Arthralgia	41(14.24)	11(29.73)	7(11.86)	13(24.07)	10(7.25)
Sore Throat	31(10.76)	5(13.51)	7(11.86)	10(18.52)	9(6.52)
History					
Vaccination History	109(37.84)	10(27.02)	27(45.76)	17(31.48)	55(39.85)
Cases in Family	132(45.83)	28(75.67)	29(49.15)	20(37.04)	55(39.85)

ACTION PLAN COMPONENTS UPDATE

COMPONENTS / Actions	Progress achieved since the beginning of MENA INS?	2017 – 2018- Future actions to attain (to be completed in September)	Challenges
SURVEILLANCE	<ol style="list-style-type: none"> Ongoing SARI Surveillance Sentinel surveillance 	Analyze data Prepare for next season's surveillance	Obtaining correct primers Continue/expand funding
VACCINATION	Increase of VCR to 4.5% in total pop Increase to 6% in children	Further increase in total population to 6% and 7% in children with QIV use in this age group	
SOCIAL MOBILIZATION / EDUCATION / AWARENESS	Workshops for various target groups: army – companies – Diabetes – OBGYN - New vaccination channels creation		Lack of time Lack of funding Lack of dedicated body
ADVOCACY & POLICY	Partnering with LPS for recommendation publishing for vaccination of risk groups	MOH issuing reco for immunization and endorsing vaccination campaigns through new channels	Recommendations by other relevant societies

CONCLUSIONS / HIGHLIGHTS

- Ongoing two-tier surveillance sheds light on possible differences between inpatient and outpatient distribution of influenza subtypes
- Although vaccine uptake is improving but there's still a long way to go
- The search for advocacy group continues: academics, public, and governmental representatives



The Center for Infectious Diseases Research team

