The 9th International Conference on Legionella
Rome, 26th - 30th September 2017

Auditorium Antonianum
Viale Manzoni, 1 - 00185
ROME

INFO@LEGIONELLA2017.COM • WWW.LEGIONELLA2017.COM
With the Patronages of
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Dear Participants,

It is our pleasure to welcome you to the 9th International Conference on Legionella in Rome, Italy, from the 26th to 30th of September 2017.

This year we will celebrate forty years since Legionella pneumophila was identified, after the first outbreak of Legionnaires’ disease in Philadelphia in 1976.

Since then, we have learnt a lot about these bacteria, we have improved our capability to conduct appropriate epidemiological investigations, and thanks to geographical information analysis and typing methods, we are now able to better identify the source of infection.

We also have recognised the importance of appropriate risk assessment on water systems in order to rapidly apply the best control measures and adopt different disinfection procedures, being aware that there is not a single recipe. In fact, every situation must be thoroughly studied and every intervention must be tailored.

Knowledge on ecological niches of Legionella has been expanded. Moreover, the recent DNA sequencing technologies to monitor microbial population in water systems appear to be quite promising for a better understanding of behaviours devised by this intriguing bacterium to survive in the environment.

Regarding diagnostic methods, the introduction of urinary antigen detection has given a boost in detecting cases, but the development and validation of other fast and accurate molecular methods are needed.

The number of identified species is increasing day by day, and in addition to traditional procedures, integrated multi “omics” technologies help to clarify the molecular basis of pathogenesis and evolution of most of these species. However, a better understanding of the interaction between the bacterium and the host, with special reference to the population at risk, would be desirable.

We consider this International Conference a great opportunity to define state of the art about all the aspects concerning Legionella, and we do hope that new ideas for future researches and collaborative studies in this field will arise.

We warmly welcome you to Rome, the “Eternal” city. Here, the ancient Romans laid the foundations of their empire, leaving spectacular signs in culture, architecture, city planning, politics and laws, which survived to present day, leaving people coming from all over the world astonished.

The Local Organising Committee is willing to offer you the best hospitality in terms of location, accommodation and, last but not least, good food and the opportunity to choose among a number of guided trips in Rome and surroundings for you and your accompanying persons.

On behalf of the Conference organisers we sincerely welcome you to the 9th International Conference on Legionella 2017.

Paola Borella and Maria Luisa Ricci
Chairs, Legionella 2017
ORGANIZING COMMITTEE

Ashbolt Nicholas
University of Alberta, Alberta, Canada

Brandsema Petra
Centre for Infectious Disease Control, National Institute for Public Health and the Environment, RIVM, Bilthoven, The Netherlands

de Jong Birgitta
European Centre for Disease Prevention and Control, Stockholm, Sweden

De Giusti Maria
Sapienza University, Rome, Italy

Mansi Antonella
Occupational and Environmental Medicine, INAIL, Rome, Italy

Marchesi Isabella
University of Modena and Reggio Emilia, Modena, Italy

Paduano Stefania
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Rota Maria Cristina
Italian National Institute of Health, Rome, Italy

Scaturro Maria
Italian National Institute of Health, Rome, Italy

Visca Paolo
Roma III University, Rome, Italy

SCIENTIFIC COMMITTEE

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Italian National Institute of Health, Rome, Italy

Scaturro Maria
Italian National Institute of Health, Rome, Italy

Visca Paolo
Roma III University, Rome, Italy

INVITED SPEAKERS

Berjeaud Jean-Marc
University of Poitiers, Poitiers, France

Buchrieser Carmen
Institut Pasteur, Paris, France

Cooley Laura
CDC’s National Center for Immunization and Respiratory Diseases, Atlanta, United States of America

Edelstein Paul Herbert
University of Pennsylvania, Philadelphia, United States of America

Hadjichristodoulou Christos
University of Thessaly, Larissa, Greece

Hilbi Hubert
Institute of Medical Microbiology, University of Zurich, Zurich, Switzerland

Lee Susanne
Director Leegionella Ltd, United Kingdom

Palusinska-Szysz Marta
Maria Curie-Sklodowska University, Lublin, Poland

Pruden Amy
Virginia Tech, Blacksburg, United States of America

ORGANIZING COMMITTEE

Boccia Stefania
Cattolica del Sacro Cuore University, Fondazione Policlinico ‘Agostino Gemelli’, Rome, Italy

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University of Modena and Reggio Emilia, Modena, Italy

Paduano Stefania
University of Modena and Reggio Emilia, Modena, Italy

Rota Maria Cristina
Italian National Institute of Health, Rome, Italy

Scaturro Maria
Italian National Institute of Health, Rome, Italy

Visca Paolo
Roma III University, Rome, Italy
SOCIAL EVENTS

WELCOME COCKTAIL AT THE “ISTITUTO NAZIONALE DI STUDI ROMANI”
The Welcome Cocktail will be held on 26th of September, from 7.30 p.m. to 9.00 p.m., at The Istituto degli Studi Romani. The institute has its location in the former convent of Saints Bonifacio and Alessio, at the top of the hill Aventino, one of the most impressive hills of Rome. The walk (about 2.7 km), that divides the Auditorium Antonianum from the Cocktail venue, shows a view of the best monuments of the Eternal City. It begins from the Colosseum, it runs along the Palatine Hill to finally reach the Circus Maximus. Therefore, the journey from the Conference venue to the Istituto degli Studi Romani offers a precious and unique opportunity to immerse yourself in Roman history.
Transfer from Congress venue to “Istituto Studi Romani” with private bus.
The Istituto degli Studi Romani is in Piazza dei Cavalieri di Malta, 2, 00153 Rome.
http://www.studiromani.it/html/sede.htm

GUIDED TOUR AT “VILLA DEI QUINTILI” AND GALA DINNER AT “VILLA DINO”
On September 28th at 5.45 p.m. it will be held a guided tour of Villa dei Quintili and afterwards the Gala Dinner at Villa Dino. Villa Dino, set within one of the most important archaeological parks in the world, including Villa dei Quintili and the Seneca Mausoleum, is among the largest and most prestigious villa of Rome. Embellished with a huge park, enriched with palm, olive and lemon trees and ancient monuments, Villa Dino offers a reality out of the ordinary.
Transfer from Congress venue to “Villa dei Quintili” and “Villa Dino” with private bus.
Villa dei Quintili is in Via Appia Nuova 1092, 00178 Roma.
Villa Dino is in Via Appia Antica 249/B, 00178 Roma.
SCIENTIFIC PROGRAMME

TUESDAY, SEPTEMBER 26TH, 2017

13:00-18:45  Registration and exhibition

16:15-17:00  Welcome address and conference opening
Paola Borella  University of Modena and Reggio Emilia, Modena, Italy
Maria Luisa Ricci  Italian National Institute Health, Rome, Italy
Chairs, Legionella 2017 Organizing Committee

17:00-18:30  SESSION 1 - GLOBAL TREND OF LEGIONNAIRES’ DISEASE
Chairs: Valeria Gaia, Giovanni Rezza

17:00-17:45  Legionnaires’ Disease, a Brief History
Paul H. Edelstein  University of Pennsylvania, Philadelphia, United States of America
Lectio Magistralis

17:45-18:15  Legionnaires’ Disease from a European Perspective
Birgitta de Jong  (Invited speaker)
European Centre for Disease Prevention and Control, Stockholm, Sweden

18:15-18:45  A Watershed Moment: The Increasing Challenge of Legionnaires’ Disease in the United States
Laura A. Cooley  (Invited speaker)
Center for Disease Control, Atlanta, United States of America

19:30-21:00  Welcome Cocktail at the “ISTITUTO NAZIONALE DI STUDI ROMANI”
http://www.studiromani.it/html/sede.htm

WEDNESDAY, SEPTEMBER 27TH, 2017

08:30-18:00  Registration and exhibition

08:30-10:30  SESSION 2 - PATHOGENESIS, IMMUNOLOGY AND HOST CELL INTERACTIONS
Chairs: Carmen Buchrieser, Dario S. Zamboni

08:30-09:00  Modulation of Membrane Dynamics and Cell Migration by Legionella
Hubert Hilbi  (Invited speaker)
University of Zurich, Zurich, Switzerland

09:00-09:30  A New Approach to Identify Legionella pneumophila Effector Mutants with Distinct Virulence Phenotypes
Craig Roy  (Invited speaker)
Yale University of Medicine, New Haven, United States of America

09:30-09:45  The Dot/Icm Type IV Secretion System Effector LtpM Defines a New Family of Modular Glycosyltransferases
Gunnar Neels Schroeder
Queen’s University Belfast, Belfast, Northern Ireland

09:45-10:00  New Insights Into the Legionella Type 1 Secretion System
Hussein Kanaan
University of Lyon, Lyon, France

10:00-10:15  Legionella pneumophila Modulates Mitochondrial Dynamics To Trigger Metabolic Repurposing of Infected Macrophages
Pedro Escoll
Institute Pasteur, Paris, France
MANIPULATION OF HOST METABOLISM BY LEGIONELLA PNEUMOPHILA EFFECTORS THAT ACTIVATE AND INHIBIT mTORC1

Justin A. De Leon
University of California, Berkeley, United States of America

SESSION 2 - PATHOGENESIS, IMMUNOLOGY AND HOST CELL INTERACTION (CONTINUED)

Chairs: Craig Roy, Carmen Buchrieser

RECOGNITION OF LEGIONELLA BY INTRACELLULAR RECEPTORS IN MACROPHAGES

Dario S. Zamboni (Invited speaker)
University of São Paulo, São Paulo, Brazil

THE ROLE OF LIPIDS IN LEGIONELLA-HOST INTERACTION

Marta Palusinska-Szysz (Invited speaker)
Maria Curie-Skłodowska University, Lublin, Poland

ER REMODELING BY THE LARGE GTPASE ATLASTIN (SEY1/ATL3) PROMOTES VACUOLAR GROWTH OF LEGIONELLA PNEUMOPHILA

Bernhard Steiner
University of Zurich, Zurich, Switzerland

SNPL, A NUCLEOMODULIN EFFECTOR PROTEIN OF LEGIONELLA PNEUMOPHILA TARGETS HOST TRANSCRIPTION ELONGATION MACHINERY

Shivani Pasricha
University of Melbourne, Melbourne, Australia

STRUCTURAL INSIGHTS INTO LEGIONELLA RIDL-VPS29 RETROMER SUBUNIT INTERACTION REVEAL DISPLACEMENT OF THE REGULATOR TBC1D5

Kevin Bärlocher
University of Zurich, Zurich, Switzerland

WHEN LIFE GIVES YOU LEMONS IN THE FORM OF OXIDANTS…: A PEEK INTO THE MOLECULAR UNDERPINNINGS OF HOW LEGIONELLA COPES WITH OXIDATIVE STRESS IN WATER

Nissanka Mendis
McGill University, Montreal, Canada

POSTER SESSION 1 - ROOMS EXHIBITION AREA

PATHOGENESIS AND IMMUNOLOGY • GENETICS AND GENOMICS

SESSION 3 - GENETICS AND GENOMICS

Chairs: Hubert Hilbi, Sophie Jarraud

MOLECULAR MIMICRY OF EUKARYOTIC PROTEINS, A MAIN VIRULENCE STRATEGY OF LEGIONELLA

Carmen Buchrieser (Invited speaker)
Institute Pasteur, Paris, France

RETROELEMENT-GUIDED PROTEIN DIVERSIFICATION IN LEGIONELLA PNEUMOPHILA

Diego Arambula
University of California, Los Angeles, United States of America

GENETICS OF WIDELY DISTRIBUTED NATURAL TRANSFORMABILITY IN LEGIONELLA PNEUMOPHILA CLINICAL ISOLATES

Xavier Charpentier
International Centre of Research and Infectiology, University of Lyon, Lyon, France
**16:30-16:45** Evolution of Host-Adaptation in the Bacterial Order *Legionellales*  
**Lionel Guy**  
Uppsala University, Uppsala, Sweden

**16:45-17:15** Coffee Break

**17:15-18:00** **SESSION 3 - GENETICS AND GENOMICS (CONTINUED)**  
Chairs: Jacob Moran-Gilad, Christopher Ginevra

**17:15-17:30** Genomic Evolutionary History of Legionnaires’ Disease in Scotland  
**Bryan Wee**  
University of Edinburgh, Edinburgh, United Kingdom

**17:30-17:45** The *Legionella* Genus Genome: a Global View of the Genus Evolution  
**Laura Gomez-Valero**  
Institute Pasteur, Paris, France

**17:45-18:00** Whole Genome Sequence Analysis of the *Legionella pneumophila* Population Within the Water System of a Large Occupational Building  
**Vicky Chalker**  
Public Health England, London, United Kingdom

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**THURSDAY, SEPTEMBER 28TH, 2017**

**08:30-16:45** Registration and exhibition

**08:30-09:30** **SESSION 4 - CLINICAL ASPECTS, TREATMENT, ROUTE OF EXPOSURE AND HOST RELATIONSHIP**  
Chairs: Laura A. Cooley, Maria Cristina Rota

**08:30-09:00** Clinical Characteristics of *Legionella* Infection  
**Paul H. Edelstein** *(Invited speaker)*  
University of Pennsylvania, Philadelphia, United States of America

**09:00-09:15** Route of Exposure to Aerosol and Legionnaires’ Disease or Pontiac Fever  
**Richard Bentham**  
Flinders University, Adelaide, Australia

**09:15-09:30** *Legionella* Aerosols from Shower to an Ex Vivo Human-Porcine Respiratory Model  
**Severine Allegra**  
University of Lyon, Lyon, France

**09:30-10:00** Coffee Break

**10:00-12:00** **SESSION 5 - DIAGNOSIS AND TYPING**  
Chairs: Søren Anker Uldum, Christian Lück

**10:00-10:30** Diagnosis and *Legionella* Typing of Atypical Forms of Legionellosis  
**Sophie Jarraud** *(Invited speaker)*  
National Reference Center of *Legionella*, University of Lyon, Lyon, France

**10:30-11:00** The Future of *Legionella* Typing in the Genomics Era  
**Jacob Moran-Gilad** *(Invited speaker)*  
National Microbiology Focal Point & Head of Microbiology Cooperation, Jerusalem, Israel
SCIENTIFIC PROGRAMME

11:00-11:15  LegioTyper: a Fully Automated and Rapid Detection Method for Serotyping of *Legionella pneumophila*
Anne Gründel
Dresden University of Technology, Dresden, Germany

11:15-11:30  The Average Nucleotide Identity Index is a Taxonomic Tool That Can Also Be Useful for Determining the Epidemiological Relationship Between *Legionella pneumophila* Genomes
Maria José Figueras
University Rovira i Virgili, Reus, Spain

11:30-11:45  Utility of Rapid Techniques in the Legionnaires’ Disease Outbreak in Manzanares, Spain, December 2015-February 2016
Juan Carlos Montero
Regional Public Health Laboratory - Health Sciences Institute Talavera de la Reina, Spain

11:45-12:00  Could Legionnaires’ Disease diagnosis Criteria Be Improved? Evidence from Two Independent Real Time PCR Assays
Maria Scaturro
Italian National Institute of Health Rome, Italy

12:00-13:00  SESSION PROUDLY SPONSORED BY INDEXX
Comparing Modern and Traditional Culture-Based Methods for Detection of *Legionella* and the Significance of Quantification of *Legionella Pneumophila* Vs. All *Legionella* Species

12:00-12:05  Welcome to participants and Introduction to Legiolert
Dan Broder
Staff Scientist at IDEXX, Portland, Maine, United States of America

12:05-12:15  Performance of Legiolert vs. ISO 11731-2:2004 in German Potable Waters
Martin Exner
University of Bonn, Bonn, Germany

Maria Luisa Ricci
Italian National Institute Health, Rome, Italy

12:25-13:00  ROUND TABLE DISCUSSION:
The Merits and Concerns Associated with Exclusive Detection of *L. Pneumophila* in Conjunction with a Water Safety Plan
Participants: Martin Exner, Maria Luisa Ricci, Amy Pruden, Nicholas Ashbolt

13:00-13:40  Lunch

13:30-15:00  POSTER SESSION 2 - ROOMS EXHIBITION AREA
• EPIDEMIOLOGY AND SURVEILLANCE • OUTBREAKS INVESTIGATION AND CASE REPORT
• CLINICAL ASPECTS AND TREATMENTS • DIAGNOSIS AND TYPING

15:00-16:45  SESSION 6 - SURVEILLANCE AND OUTBREAKS INVESTIGATIONS
Chairs: Pedra Brandsema, Carmen Pelaz Antolin

15:00-15:15  Legionnaires’ Disease from the Other Side of the World: the New Zealand Perspective
David R. Murdoch
University of Otago, Christchurch, New Zealand

15:15-15:30  A National Cross-Sectional Study to Uncover the Hidden Burden of Legionnaires’ Disease: The LegiNZ Study
David R. Murdoch
University of Otago, Christchurch, New Zealand
15:30-15:45  Community-Acquired Cases of Legionnaires’ Disease: the Proportion Technically Preventable by Applying the German Drinking Water Ordinance
Udo Buchholz
Robert Koch Institute, Berlin, Germany

15:45-16:00  *Legionella pneumophila* in the Flint Water Supply: A Molecular Epidemiology and Virulence Assessment
Michele Swanson
University of Michigan, Ann Arbor, United States of America

16:00-16:15  Spatial Distribution of Legionellosis at the Small Area Level in the City of Barcelona: 2000-2016
Pau Gallés
Public Health Agency of Barcelona, Barcelona, Spain

16:15-16:30  Factors Associated With the Occurrence of Further Cases in Accommodations Associated With a Cluster of Travel-Associated Legionnaires’ Disease Cases After Implementation of Control Measures
Julien Beauté
European Centre for Disease Prevention and Control, Stockholm, Sweden

16:30-16:45  Epidemiology and Microbiology of Recurrent Accommodation Sites Implications for Surveillance and Prevention
Sebastian Crespi
Biolinea Int., Palma de Mallorca, Spain

16:45-23:30  Tour of “Villa dei Quintili” and Gala Dinner at “Villa Dino”

**FRIDAY, SEPTEMBER 29TH, 2017**

08:15-19:30  Registration and exhibition

08:15-10:00  **SESSION 7 - ECOLOGY OF *LEGIONELLA* AND INTERACTION WITH ENVIRONMENTAL RESERVOIRS**
Chairs: Alexander Kirschner, David R. Murdoch

08:15-08:45  The Original Cat and Mouse Interplay: With Picky Amoebae and Persistent *Legionella pneumophila*
Nicholas J. Ashbolt *(Invited speaker)*
University of Alberta, Edmonton, Canada

08:45-09:15  Natural Antimicrobial Substances to Control Proliferation of *Legionella pneumophila*
Jean Marc Berjeaud *(Invited speaker)*
University of Poitiers, Poitiers, France

09:15-09:30  Survival Patterns and Virulence of Viable but Non-Culturable *Legionellae* Induced by Starvation
Barbara Schrammel
Medical University of Vienna, Vienna, Austria

09:30-09:45  *Legionella pneumophila* Prevents Cell Division and DNA Replication of Acanthamoeba Castellanii
Ascel Samba-Louaka
University of Poitiers, Poitiers, France

09:45-10:00  Temperature Induced Viable but Non-Culturable *Legionella pneumophila* Cells are Virulent Against Amoebae and Macrophage-Like Cells
Sílvia Cervero-Aragó
Medical University of Vienna, Vienna, Austria

10:00-10:30  Coffee break
10:30-12:00  SESSION 8 - LEGIONELLA DETECTION AND DIFFUSION IN THE ARTIFICIAL THE RESERVOIRS
Chairs: Nicholas J. Ashbolt, Susanne Lee

10:30-11:00  Legionella Colonization of Water Systems Aboard Passenger Ships and Differences with Accommodation Sites (Hotels Etc)
Christos Hadjichristodoulou (Invited speaker)
University of Thessaly, Larissa, Greece

11:00-11:30  Legionella Detection in Environments and Their Impacts on the Occurrence of Legionellosis in Japan
Kura Fumiaki (Invited speaker)
National Institute of Infectious Diseases Tokyo, Japan

11:30-11:45  Prevalence and Diversity of Legionella in US Cooling Towers
Brian H. Raphael
Centers for Disease Control and Prevention, Atlanta, United States of America

11:45-12:00  Identification of Cooling Tower Microbiota Supporting the Growth of Legionella pneumophila
Sebastien P. Faucher
McGill University, Montréal, Canada

12:00-13:00  SESSION PROUDLY SPONSORED BY PALL
Can Legionella be controlled by engineering measures?
Chair & welcome and opening
Martin Exner (Invited speaker)
University of Bonn, Bonn, Germany

12:00-12:30  Compliance with Drinking Water System Regulation: The German Approach
Roland Suchenwirth
Lower Saxony Health Authorities, Hannover, Germany

12:30-13:00  Technical prerequisites for a safe Drinking Water System for Legionella
Stefan Pleischl
University of Bonn, Bonn, Germany

13:00-14:00  Lunch

13:30-15:30  POSTER SESSION 3 - ROOMS EXHIBITION AREA
• MISCELLANEOUS • MICROBIAL ECOLOGY • PREVENTION AND CONTROL

14:00-14:30  ESGLI BUSINESS MEETING

15:30-17:15  SESSION 9 - PREVENTIVE AND CONTROL STRATEGIES
Chairs: Paola Borella, Sebastian Crespi

15:30-16:00  The Evaluation of Mandatory Legionella Environmental Surveillance in Healthcare Facilities in Taiwan: Clinical and Environmental Perspectives
Yusen E. Lin (Invited speaker)
National Kaohsiung Normal University, Kaohsiung City, Taiwan

16:00-16:30  Controlling Legionella in Building Water Systems: How Does Monochloramine Measure Up?
Janet E. Stout
Special Pathogens Laboratory, Pittsburgh, United States of America

16:30-16:45  Corrosive Effect on Various Pipe Materials Following Different Treatments for Legionella Spp
Control in Hospital Water Systems
Isabella Marchesi
University of Modena and Reggio Emilia, Modena, Italy
Sponsored presentation (Grundfos) Experiences in-situ Prepared Chlorine Dioxide in Legionella Treatment  
Michael Skovgaard  
Senior Manager, Global Programs GPMA Dosing & Disinfection  

Coffee Break  

SESSION 9 - PREVENTIVE AND CONTROL STRATEGIES (CONTINUED)  
Chairs: Janet E. Stout, Yusen E. Lin  

A Multicenter Study on Legionella Air Contamination in Italian Healthcare Facilities: Comparison of Different Sampling Methods  
Osvalda De Giglio  
University of Bari, Bari, Italy  

Maxi Impact of Temperature, Copper and Silver Exposure on the Viability and Recovery of Clinical and Environmental Strains of Legionella pneumophila  
Michèle Prévost  
Polytechnique Montréal, Montréal, Canada  

Prevention and Control of Legionella spp. Colonization in Dental Units  
Beatrice Casini  
University of Pisa, Pisa, Italy  

Legionella Colonization Of Hotel Water Supply Systems In Touristic Places Of Greece: Associations With System Characteristics and Physicochemical Parameters  
Varvara Mouchtouri  
Department of Medicine University of Tessaly, Larissa, Greece  

Risk Assessment of Legionella in Hospital Washbasins: Water and Aerosol  
Pasqualina Laganà  
University of Messina, Messina, Italy  

ROUND TABLE:  
discussion on the topics (critical aspects, pros and cons, etc.) presented in the session of the day  

SATURDAY, SEPTEMBER 30TH, 2017  

Registration and exhibition  

SESSION 10 - LEGIONELLA GUIDELINES IN DIFFERENT COUNTRIES  
Chairs: Birgitta de Jong, Maria Luisa Ricci  

European Legionella Guidelines  
Susanne Lee (Invited speaker)  
Legionella LTD., United Kingdom  

U.S. Guidance and Standards  
Janet E. Stout (Invited speaker)  
Special Pathogens Laboratory, Pittsburgh, United States of America  

The German Experiences with Legionella Risk Regulation  
Martin Exner (Invited speaker)  
University of Bonn, Bonn, Germany
10:00-10:20  
**Legionella Guidelines in the Russian Federation: Harmonization in Accordance to International Standards**  
Igor Tartakovskiy  
Gamaleya Research Center of Epidemiology and Microbiology, Moscow, Russia

10:20-10:40  
**Legionella Regulation in Australia**  
Richard Bentham  
Flinders University, Adelaide, Australia

10:40-11:00  
**Italian Legionella Guidelines: a Special Focus on Dental Unit Waterlines**  
Maria Luisa Ricci  
Italian National Institute Health, Rome, Italy

11:00-11:30  
Coffee break

11:30-13:30  
**SESSION 11 - CHALLENGES OF LEGIONELLA AND FUTURE PERSPECTIVES**  
Chairs: Paul H. Edelstein, Janet E. Stout

11:30-12:00  
**Advancing a Framework for Prebiotic/Probiotic Control of Legionella in Distribution Systems and Building Plumbing**  
Amy Pruden *(Invited speaker)*  
Virginia Tech in Blacksburg, Virginia, United States of America

12:00-12:30  
**Technology Advancement Supporting Legionella Control in Dubai**  
Redha H. Salman  
Health and Safety Department-Dubai Municipality, Dubai UAE

12:30-13:00  
**The European Perspectives of Legionella Surveillance and Control**  
Valeria Gaia *(Invited speaker)*  
Swiss National Reference Centre for Legionella, Bellinzona, Switzerland

13:00-13:30  
**Presentation of Legionella 2021**

Closing remarks: Paola Borella and Maria Luisa Ricci
GENERAL INFORMATION

CONGRESS DETAILS

DATES
26th - 30th September 2017

CONGRESS VENUE
Auditorium Antonianum
Viale Manzoni, 1 - 00185 - Rome

LANGUAGE
The official language of the Congress is English.

BADGES AND CONFERENCE MATERIALS
Name badges and conference material will be provided on-site to all registered delegates at the conference registration, from 26th - 30th September 2017. Badges are to be worn at all times, for reasons of security and identification. You will not be permitted to enter any building or room without your badges.

CERTIFICATE OF ATTENDANCE
All register delegates are entitled to a certificate of attendance. Certificates can be collected from the conference secretariat on the last day of the Conference.

LIABILITY AND INSURANCE
Delegates and exhibitors are advised to take out adequate insurance cover against any risk of loss, damage, injury or liability before travelling to the Conference. Neither the Conference Organisers nor its contractors shall accept liability for personal injury or loss/damage to property and belongings of delegates during the Conference or their stay in Rome.

MOBILE PHONES
Delegates are kindly requested to switch off their mobile phones during the Conference sessions.

PROGRAMME CHANGES
Due to circumstances beyond the control of the Congress Organisers, last-minute changes to the programme may be unavoidable.

LATE REGISTRATION FEE (IN EURO)
Registration types and fees

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<th>REGISTRATION</th>
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<tr>
<td>Full rate</td>
<td>€ 770</td>
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<td>Italian Scientific Societies</td>
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<td>Student</td>
<td>€ 500</td>
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<td>Low income Countries</td>
<td>€ 560</td>
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<tr>
<td>Gala Dinner and tour</td>
<td>€ 105</td>
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ALL PRICES INCLUDE VAT 22%.

STUDENT: this voice includes students attending degree, PhD course, Specialization School. Students must please bring Student ID to the Conference.

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Bolivia
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India
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Kazakhstan
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Kyrgyz Republic
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Lebanon
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Palau
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Peru
Philippines
Romania
Rwanda
Samoa
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Senegal
Serbia
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Sierra Leone
Solomon Islands
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South Africa
Sri Lanka
St. Lucia
St. Vincent and the Grenadines
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Suriname
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Venezuela, RB
Vietnam
West Bank and Gaza
Yemen, Rep.
Zambia
Zimbabwe
GENERAL INFORMATION

THE REGISTRATION INCLUDES
• Participation in the congress activities
• Congress Kit
• E.C.M.
• Opening cocktail (26th September 2017)
• Congress lunches (27th - 29th September 2017)
• Coffee breaks (27th - 30th September 2017)
• Certificate of attendance

SUBSTITUTIONS/NAME CHANGES
All participant substitutions who are already registered should be sent with a written request to the Organising Secretariat, specifying the name of the substituted person. Every name change will be charged of € 40,00 + 22% VAT.

E.C.M. ACCREDITATION (only for Italian participants)
This event gives right to: Nr. 6 CME credits to Physician Ref. (555 - 202428)
Educational aims: Main Guides, Protocols, Procedures for the categories: Physician, Biologist, Nurse, Biomedical Laboratory Technologist, Occupational Health and Safety Officer.
Discipline: Hematology, Gastro-enterology, Medical Genetics, Geriatrics, Respiratory diseases, Contagious diseases, Clinical and Toxicology Pharmacology, Medical Genetic Laboratory, Microbiology and Virology, Hygiene, Epidemiology and Public Health, Occupational Medicine and workplace safety, General Medicine (family doctor), Epidemiology.

OBTAINING TRAINING CREDITS
To obtain training credits, participants need to participate in the congress scientific activities planned for every day; once the congress is over, they will hand in their personal data, together with the scientific self-evaluation and approval questionnaires, fully filled out.

PARTICIPATION CERTIFICATE AND E.C.M. CERTIFICATE
At the end of the congress, all regularly registered participants will be issued a certificate of participation, while the E.C.M. certificate will be available on-line 90 days after the end of the event (subject to attribution by the Ministry of Health). Participants will be able to download their Italian certificates with the credits obtained, by connecting to the website www.idealcpa.com and following the simple procedures. European certificates will be sent by email to the address written on the approval questionnaire after 90 days of the end of the congress.

PROGRAMME ON LINE
The programme will be available on line only on the official congress web site: www.legionella2017.com
CONFERENCE VENUE

The 9th International Conference on Legionella will be held at the Auditorium Antonianum, viale Manzoni, 1 Rome. http://www.auditoriumantonianum.it/en/
The congress venue is located in a strategic and central area of Rome, just 1400 metres far from the principal train Termini and 100 metres far from underground station Manzoni.

HOW TO GET THERE

From both the international airport of Rome you can reach the centre of Rome quickly by train, buses or private coaches.

**TO/FROM Fiumicino Airport**

**Trains from/to the Fiumicino Airport**
From the railway station, located in the airport, near the Arrivals and Departures terminals, you can reach the city centre in many, frequent Trenitalia’s connections:
- Leonardo Express, a non-stop service exclusively for airport passengers to/from Rome Termini railway station leaving every 15 minutes* with a journey time of 32 minutes
- Regional FL1 trains to/from other stations in Rome, including Rome Tiburtina, with departures every 15 minutes on weekdays and every 30 minutes on weekends and holidays
- Departures every 30’ from Fiumicino Airport before 07.08 and after 21.08 and between 10.08/10.38 and 14.08/14.38
- Departures every 30’ from Rome Termini before 06.20 and after 20.20 and between 09.50/10.20 and 13.50/14.20
* - departures every 30’ from Fiumicino Airport before 07.08 and after 21.08 and between 10.08/10.38 and 14.08/14.38

For more information: www.trenitalia.com

**Buses from/to the airport**
A lots of buses companies are available from/to the city from “Leonardo da Vinci” Airport:

**COTRAL**
- The scheduled bus stops are opposite Terminal 2, Arrivals. To reach them follow the “Regional Bus Station” signs.
- Information on the service: tickets can be purchased at the authorized sales point (news stands, tobacconists, etc.) or, with a surcharge, on-board the bus.
- It takes about an hour.

For more information: www.cotralspa.it

**SIT Bus Shuttle**
- The buses stop at the BUS hub adjacent to the Terminal 3 exits - Arrivals, bus rank no. 1. To reach them follow the “Regional Bus Station” signs.
- Information on the service: the service operates every day, from Monday to Sunday. Tickets can be purchased online or directly on board the bus. The journey is about 35 minutes and buses leave about every 30 minutes.

**T.A.M. S.R.L.**
- The buses stop at the BUS hub adjacent to the Terminal 3 exits, Arrivals, bus rank no. 4. To reach them follow the “Bus Station” signs
- Information on the service: the service operates every day, from Monday to Sunday. Tickets can be purchased directly on board the bus. The journey is about 45 minutes - leaving every 30 minutes
http://www.tambus.it

**Terravision**
- The buses stop at the BUS hub adjacent to the Terminal 3 exits, Arrivals, bus rank no. 3. To reach them follow the “Bus Station” signs.
- Information on the service: the service operates every day, from Monday to Sunday. Tickets can be purchased online or on board the bus. The journey is about 55 minutes and buses leave about every 30 minutes.
www.terravision.eu

**ATRAL - Schiaffini**
- The buses stop at the BUS hub adjacent to the Terminal 3 exits, Arrivals, bus rank no. 4. To reach them follow the “Bus Station” signs.
- The service operates every day, from Monday to Sunday.
- Tickets can be purchased online, directly on board the bus or at the authorized agents in the Arrivals hall, Terminal 3
http://www.romeairportbus.com

**TO/FROM Ciampino Airport**

**Trains from/to Ciampino Airport**
The nearest train station to the Giovan Battista Pastine Airport is in the town of Ciampino, connected to the airport by COTRAL/SCHIAFFINI buses every 30 minutes. The journey time is, on average, 5 minutes. The cost of the ticket, for sale both on board and from the ground staff is 1,50 euro.

**Buses from/to the Ciampino Airport**
A daily connection between the airport and Rome Termini railway station is provided by these companies:

ATRAL - COTRAL - SIT - TERRAVISION - SCHIAFFINI
All the bus stops are opposite International Departures. For information on timetables, routes, and the cost of tickets see the websites of the various bus companies

**Arriving from Termini station**
- By foot, 1400 metres (about 15 minutes)
- By underground, line A (direction Anagnina), MANZONI station (100 metres)
- By bus, line 714, MERULANA/LABICANA stop

Other buses to/from the congress venue:
- Line 3 or 810, MANZONI/MERULANA stop
- Line 16 or 717, MERULANA/LABICANA

For more information consult the Local public transport website http://www.atac.roma.it/page.asp?p=52
VENUE MAP

LEVEL 0

LEVEL - 1
ABOUT ROME

VISA
Some participants may need a visa to travel to Italy. Participants are invited to check with the Italian consulate in their country. The Organising Secretariat is not responsible for obtaining visas and does not provide financial support for them.

CURRENCY
Italy is a part of the European Currency Unit and the official currency is Euro (€). Banks in Italy are usually open Monday to Friday 9:00 AM - 15:30 PM.

CLIMATE
The climate in Rome is generally mild and continental. The average temperature in Rome in September ranges from 15°C to 25°C.

LANGUAGE
Italian is the first language. The most common foreign language is English.

TIME
Italy is GMT+1
Rome 12:00 - London 11:00 - New York 12:00 - Sidney 22:00.

TELECOMMUNICATIONS
The area code for Italy from abroad is: +39.

EMERGENCY NUMBERS
- Breakdown Service ACI - 803116
- Police - 113
- Carabinieri - 112
- FireBrigade - 115
- Local Police - 0667691
- Customs - 117
- Police Station - 064686
- First Aid - 118
- Italian Red Cross Ambulance - 06 5510
- Chemist’s Open On A Holiday - 06 228941
- Urgent Blood Transfusion - Policlinico Umberto I - 06 49970860 - 06 49970861
- Urgent Blood Transfusion - S. Giovanni Hospital - 06 77055563
- Permanent First Aid Station - 06 4826741 - 06 58201030
- Roman Green Cross Ambulance - 06 24302222

ELECTRICITY
The voltage in Rome for private homes (and thus for hotels) is 220/240 Volts.

TRANSPORTATION
During the day, buses and trams start the service at 5:30 am and run all day until Midnight in all directions. Night buses start the service at 00:30 am until 5:30 am. Buses leave from Piazza dei Cinquecento (Termini Train Station) and Venice Square (Piazza Venezia) every 30 minutes in all directions. You can buy tickets for 1 euro on board.
For more information about all routes, check the official Rome Public Transportation Agency, ATAC. There you’ll find all the up-to-date information on routes, tickets, underground and urban railways, public transport maps, wait times, and all information to get around Rome. On the ATAC website there is also an useful services: route planner that allows you to enter your starting point and the destination addresses and it will provide a map of the route you should take including the buses necessary to get there.

BY TAXI
Taxis can be called by phone or can be caught directly from the appropriate reserved taxi points, located in various parts of the city centre and in other suburban areas.

Otherwise you can call one these phone taxi numbers (remember, the meter starts from the time you call, not when you get in!)
- Ph. 06 3570
- Ph. 06 4994
- Ph. 06 6645
- Ph. 06 5551
- Ph. 06 8822
CONFERENCE INFORMATION

AUDIOVISUAL EQUIPMENT / SPEAKER’S READY ROOM
A Speaker’s Ready Room will be operating throughout the duration of the congress. Speakers are kindly requested to hand in their presentation (USB-key, CD-ROM, DVD) at least three (3) hours before their scheduled presentation time. If your presentation is scheduled early in the morning, you are kindly requested to check your presentation at the Speaker’s Ready Room the day before. All version of MS Power Point are accepted, including Mac. If you are using embedded video clips in your presentation, please remember to submit video files separately. The following equipment will be available.
- PC
- Data video Projector (Power Point presentations)
- Laser Pointer
- Microphones

ORAL COMUNICATIONS
If you are presenting a free comunication, you are kindly requested to observe the following points:
- Please declare any relevant link to industry or other conflicts of interest at the beginning of your presentation
- Please speak slowly and clearly. English is a working language of the congress, but not necessarily the native language of the delegates

POSTER PRESENTATION
For Posters to be exhibited, please note the following:
- The necessary material for displayed will be available in the poster area
- Posters panel numbers will be displayed at the top of the panel
- The corresponding poster panel number for each poster presented has been provided by the Congress Organizers, along with abstract presentation guidelines
- Please note the posters should be 70 cm (width) x 100 cm (height) maximum
- As a courtesy to other presenters, participants are kindly requested not to move or remove posters numbers or change the order of the assigned poster boards
- It is essential that presenters clear their poster board promptly and within the scheduled time. Material left on a poster board after to removal deadline will be discarded
- The Congress Organizers are not responsible for materials left behind that are stolen or damaged

MOUNTING AND DISMANTLING OF POSTERS
Poster Session 1:
Mounting  Sept 27th, 2017  H. 08:30
Dismantling  Sept 27th, 2017  H. 18:00

Poster Session 2:
Mounting  Sept 28th, 2017  H. 08:15
Dismantling  Sept 28th, 2017  H. 16:45

Poster Session 3:
Mounting  Sept 29th, 2017  H. 08:15
Dismantling  Sept 29th, 2017  H. 19:30
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<td>LegK4 from <em>Legionella pneumophila</em>, a bacterial protein kinase that targets the host cell nucleus</td>
<td>Blache Q., Baïlo N., Michard C., Doublet P.</td>
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<td>Disulfide loop cleavage of <em>Legionella pneumophila</em> PlaA boosts lysophospholipase a but diminishes glycerophospholipid cholesterol acyltransferase activity</td>
<td>Hiller M., Lang C., Michard C.</td>
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<td>Moreno AB., Guy L.</td>
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<td>Naderer T.</td>
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<td>Effect of human antimicrobial peptides against <em>Legionella pneumophila</em></td>
<td>Vandewalle M., Guillemot J., Chapalain A., Lina G., Doublet P., Jarraud S., Ginevra C.</td>
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<td>Bacterial transcript analysis reveals a compensatory role for the <em>L. pneumophila</em> type II-dependent LapA aminopeptidase and PlaC acyltransferase during infection of <em>Acanthamoeba</em></td>
<td>White R.C., Gunderson F.F., Cianciotto N.P.</td>
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<td>The GDSL hydrolase PlaD is a Dot/Icm secreted effector of <em>Legionella pneumophila</em> and confers high toxicity to eukaryotic cells</td>
<td>Hiller M., Lang C., Flieger A.</td>
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<td>Cytotoxic glycosyltransferase effectors of <em>Legionella</em></td>
<td>Levanova N., Belyi Y., Schroeder G. N., Aktories K., Jank T.</td>
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<td>Intracellular growth defect of the <em>&lt;i&gt;iroT&lt;/i&gt;</em> mutant of the <em>&lt;i&gt;L. pneumophila&lt;/i&gt;</em> despite its hypertoxicity</td>
<td>Miyake M., Tsushima Y., Marukawa T., Kuniyasu K., Sugiyama A., Yoshida I., Abu Kwaik Y., Ima Y.</td>
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<td><em>Legionella</em> effector AnkX disrupts host cell endocycling in a phosphocholine-dependent manner</td>
<td>Neunuebell M. R., Algood S. C., Badjo B. P., Noll R. R., Lein S., Pike C.</td>
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<td>Comparative whole genome sequence analysis of a <em>Legionella pneumophila</em> sg 6 clinical strain and its spontaneous avirulent mutant</td>
<td>Ricci M. L., Equestre M., Salaris S., Marcantoni C., Orsini M., Scaturro M.</td>
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<td>18</td>
<td>Rapid adaptations to the accidental human host in <em>Legionella pneumophila</em></td>
<td>Leenheer D., Pelaz C., Morin M., Hallin E., Klingenberg D., Jarraud S., Ginevra C., Guy L.</td>
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<td>19</td>
<td>The small regulatory RNA lpr0010 plays a role in <em>Legionella pneumophila</em>’s survival in water</td>
<td>Saoud J., Massé È., Faucher S.</td>
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<td>Investigating the use of metagenomic sequencing for <em>Legionella</em> detection</td>
<td>Carney S., Cox M. J., Cookson W. O., Chalker V. J., Moffatt M. F.</td>
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<td>22</td>
<td>Characterising the genome of <em>Legionella longbeachae</em> serogroup 1 clinical isolates</td>
<td>Slow S., Anderson T., Harte D., Murdoch D. R., Winter D., Biggs P. J.</td>
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<td>Role of the trans-encoded srnas lpr0014 and lpr0059 in the virulence of <em>Legionella pneumophila</em></td>
<td>Mani T., Faucher S.</td>
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<td>Looking into microbial dark matter in sediment and soil samples using metagenomics</td>
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**POSTER SESSION 2 - THURSDAY, SEPTEMBER 28TH, 2017**

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<td>A legionellosis case linked to contaminated hot tub water: importance of amoebae to isolate environmental <em>Legionella pneumophila</em></td>
<td>Dey R., Dlusskaya E.A., Tyrrell G.J., Ashbolt N.J.</td>
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<td>Molecular and epidemiological analysis of <em>Legionella pneumophila</em> strains in an outbreak at bath facilities in Japan</td>
<td>Amemura-Maekawa J., Kuroki T., Ohya H., Furukawa I., Suzuki M., Masaoka T., Aikawa K., Hibi K., Morita M., Lee K., Ohnishii M., Kura F.</td>
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<td>3</td>
<td>Pontiac fever outbreak during all doctors hen party</td>
<td>Scaturro M., Rota M. C., Caporali M. G., Pasticci M. B., Tozzi G., Ciani C., Mencacci A., Ricci M. L.</td>
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<td>5</td>
<td>Experience of public health officials in the investigation of a <em>Legionella</em> outbreak associated with one hotel</td>
<td>Serres M., Feliu T., Aguilar C., Minguell S., Coll C., Bieto M.</td>
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<td><em>Legionella pneumophila</em> on tap: simulating disinfection measures of case study apartment buildings</td>
<td>“Van Kenhove E., Janssens A., Laverge J., Ghent University, Ghent, Belgium”</td>
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<td>outcome of a 12 month national study of legionnaires’ disease in New Zealand: theleginz study</td>
<td>Chambers S.T.</td>
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<td>10</td>
<td>EMA or PMA combined with qPCR cannot be used to detect viable naturally grown <em>Legionella pneumophila</em> cells from aquatic environments</td>
<td>Wullings B.A., Van der Wielen P.W.J.J.</td>
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<td>Validation of a qPCR assay for the simultaneous detection of <em>Legionella pneumophila</em> and <em>L. pneumophila</em> SG1 in respiratory specimens and water samples</td>
<td>Bellido B., Pelaz C.</td>
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<td>12</td>
<td>Performance of the BinaxNOW® Legionella Urinary antigen rapid test in conjunction with the Alere reader</td>
<td>Beraud L., Montoya A., Ranc A.G., Descours G., Ginevra C., Lina G., Jarraud S.</td>
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<td>Specific real-time PCR for detection and identification of Legionella pneumophila serogroup 1 ST1</td>
<td>Ginevra C., Chastang C., David S., Mentasti M., Yakunin E., Chalker V.J., Chalifa-Caspi V., Valinsky L., Jarraud S., Moran-Gilad J.</td>
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<td>14</td>
<td>Mixed Legionella longbeachae infection identified using mip gene sequence analysis</td>
<td>Harte D., Piercy C.</td>
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<td>15</td>
<td>Hospital outbreak and post-outbreak investigation of Legionnaires Disease (LD) using Whole Genome Sequencing (WGS)</td>
<td>Decker B.K., Chen L., Kreiswirth B.N., Harris P., Muder R., Merz K.J., Sonel A.F., Clancy C.J.</td>
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<td>Simultaneous detection of Legionella spp., Legionella pneumophila and Legionella pneumophila sg-1 using a modified real time PCR recently described assay</td>
<td>Echahidi F., Soetens O., De Mendonça R., Mehbraoui A., Piérad D., Roslin S., Wybo I.</td>
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<td>Antimicrobial susceptibility testing of clinical and environmental Legionella spp. isolates in Greece, by M.I.C. gradient strips</td>
<td>Flountzi A., Velonakis E. N., Koutsioniani T., Vatopoulos A.</td>
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<td>C4diagnostics Lp kit for rapid detection of legionellosis</td>
<td>Fugier E., Dumont A., Müller A., Paillusson N., Dukan S.</td>
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<td>NF validation of a fast real-time PCR method for the quantification of legionella spp. and Legionella pneumophila in “clean” water samples</td>
<td>Poty F., Samuels E., Bouton S., Hallier-Soulier S.</td>
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<td>Comparison of the analytical sensitivity of two rapid point-of-care (POC) urinary antigen diagnostic tests for Legionella serogroups 3, 4, and 6</td>
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<td>Evaluation of an Immunoview <em>Legionella longbeachae</em> Urinary Antigen Test</td>
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