



**isirv**  
International Society for  
Influenza and other  
Respiratory Virus Diseases



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# Respiratory Virus Report

spring 2008

## OPTIONS VII HONG KONG

Hong Kong will host the next  
*Options* meeting in 2010  
continued on page 7



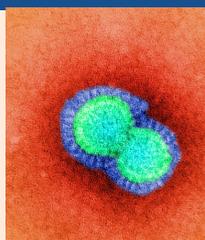
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### isirv events:

**isirv International Symposium  
on Viral Respiratory Disease  
Seville, Spain  
25-27 March 2009**

***Options for the Control of  
Influenza VII  
Hong Kong  
2-7 September 2010***



## Zoonotic Swine Influenza Infections: Public Health Implications

by Gregory C Gray, MD, MPH, FIDSA, (gregory-gray@uiowa.edu)



Small group of pigs on a U.K. farm

In recent years we have learnt quite a bit about occupational zoonotic influenza virus infections in man. While sporadic cases of swine influenza virus infection in man had been previously noted,<sup>1</sup> in 2002 Olsen et al published a controlled serological study of swine workers showing 23 per cent had elevated titers against swine H1N1 influenza virus compared to < 1 per cent in non-swine-exposed controls.<sup>2</sup> This was followed by a series of cross-sectional and prospective studies confirming their work.<sup>3-6</sup> In the largest of these studies, 800 rural lowans were followed prospectively for 2 years. Swine-exposed adults (OR = 54.9, 95% CI:13.0-232.6) and their non-swine-exposed spouses (OR 28.2, 95% CI: 6.1-130.1) were found to have a markedly increased odds of elevated antibody level to swine influenza (H1N1) virus compared with nonexposed controls.<sup>6</sup> Study data also suggested incident swine influenza virus infections among the cohort and a triple reassortant swine H1N1 virus was recovered in an ill swine farmer.

While it is likely that most of these swine virus infections are subclinical or mild, some can lead to severe disease. Myers et al recently reviewed 50 reports of swine influenza virus infections in man documenting an aggregate mortality of 7 per cent. Evidence is also mounting that these viruses are spread from human-to-human. In her review of human infections, Myers et al found that 12

of 27 well-described swine influenza cases implicated human-to-human transmission.<sup>7</sup> Two recent studies<sup>8,9</sup> have documented serious swine influenza virus infections among non-swine-exposed children that likely represent secondary transmission from swine-exposed family members. The message seems clear that swine influenza viruses frequently infect persons exposed to pigs, that they can be transmitted from human-to-human, and that they may occasionally cause severe disease.

Recently, a novel H2N3 recombinant largely avian virus was detected in two large swine facilities in the United States.<sup>10</sup> It was fully adapted to pigs and found to be highly transmissible in pigs, mice, and ferrets. There is concern that this virus may have pandemic potential as there are many people alive today who have not been exposed to a H2 influenza virus or received vaccines against such viruses. Fortunately, no further detections of this virus in pigs or man have yet been made.

**Agricultural workers  
should be included in  
influenza surveillance  
and vaccination plans**

However, if such a novel emergent influenza virus enters swine herds and is easily transmitted from pig to pig, swine workers and their family members may be at increased risk of infection. Mathematical modeling of influenza transmission in modern confinement facilities suggest the impact of a pandemic virus may be amplified in rural communities as much as 86 per cent where a large portion of adults work in swine facilities.<sup>11</sup> Should such a novel virus of pandemic potential cause only mild disease in pigs it might be easily missed by pig influenza surveillance systems, amplified, and introduced to rural communities that support modern swine facilities. As we do not often perform intense influenza surveillance in these rural communities, detection of a novel virus, virulent to man,

## Zoonotic Swine Influenza Infections: Public Health Implications *continued*

by Gregory C Gray, MD, MPH, FIDSA, (gregory-gray@uiowa.edu)

might be delayed long enough for the virus to establish itself in numerous geographical regions and thus become difficult to eradicate. Swine workers may also contribute to the generation of novel virus through their personal infection with multiple influenza viruses or by serving as a bridging population to facilitate transmission of viruses across species barriers. For these reasons, it seems prudent to include agricultural workers in national influenza surveillance plans, and in annual and pandemic vaccine plans. We have recently argued for such interventions in two editorials.<sup>12,13</sup> I urge **isirv** members to consider such intervention options when they have opportunity to influence their national influenza preparedness plans.

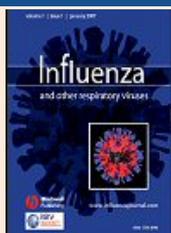
*Dr Gray is Director, Center for Emerging Infectious Diseases and Professor, Department of Epidemiology, at the University of Iowa College of Public Health.*

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**Would you like to see a synopsis of your recent research in the isirv newsletter?** Drop us a line at [marge.tamas@intmedpress.com](mailto:marge.tamas@intmedpress.com).



## **Influenza and Other Respiratory Viruses— The First Year**

by Judith Barback

2008 marks the end of the first year's publication of *Influenza and Other Respiratory Viruses*, and the start of the journal's bright future. **isirv** and Blackwell Publishing (now Wiley-Blackwell, following Blackwell's merger with John Wiley & Sons) worked together to create the journal, launching the first issue early 2007. Since then *Influenza* has attracted much attention as it is the first journal to specialise exclusively on influenza and other respiratory viruses.

**Key challenges for the second volume are to continue growing the audience and increasing the number of quality manuscript submissions**

*Influenza* is steered by a dedicated global editorial team, with Editor-in-Chief, Alan Hampson (Melbourne) at the helm, supported by Deputy Editor, Geoffrey Schild (London), and newly appointed Reviews Editor, John Wood (London). Incoming manuscripts are processed by Manuscript Central, an online manuscript submission system and fielded out to international Editorial Board members, who assist with the peer review process. Upon acceptance, articles are transferred electronically to production, where they are typeset and published online as soon as possible, making it possible for readers to access articles "hot off the press" prior to the compilation of the next issue.

The editorial strategy from the beginning has been to focus on publishing quality articles. While it is understandably difficult to attract many manuscripts to a newly launched journal, *Influenza* has succeeded in pursuing this strategy and has published some fine papers. For example, both Alexander and Capua's article, "Avian influenza infections in birds—a moving target" (2007;1[1]:11-18) and Haaheim's article, "Vaccines for an influenza pandemic: scientific and political challenges"

(2007;1[2]:55-60) have both been downloaded a great number of times. Reprints of Oxford's article on "Antivirals for the treatment and prevention of epidemic and pandemic influenza" (2007;1[1]:27-34) have also been sold.

*Influenza* enjoyed great exposure at the *Options* meeting in Toronto in June 2007, where sample copies of the journal flew off the Wiley-Blackwell stand, and memory sticks containing recent journal articles were given to delegates in exchange for their signing up for e-toc (electronic table of contents) alerts to the journal. *Influenza* also held its first Editorial Board meeting at the *Options* meeting; it was well attended and a great opportunity to gather the editorial and publishing teams together and discuss ways to take the journal forward.

While the journal has been present at many meetings such as *Options*, its marketing has extended beyond conference attendance to extensive e-mail campaigns, preview sample copies, and free online access to the journal for the first two years of publication—a feature most appreciated by its growing readership base.

The key challenges *Influenza* faces now as it heads into its second volume are to continue growing this audience as well as increasing the number of quality manuscript submissions. The journal also aims to achieve much faster publication times and provide authors with an excellent service from submission to publication. Not least of *Influenza's* goals for 2008 are to be indexed by PubMed and ISI; this will be a major step in raising the profile of the journal.

**isirv's** support for its journal—through peer review, authorship, readership, and promotion—has been most appreciated in its first year and we encourage members to continue to support *Influenza* as it strives towards these next steps.

*Judith Barback is Journals Publishing Manager at Wiley-Blackwell, Oxford, UK*

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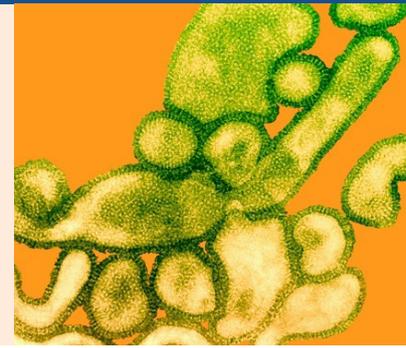
Visit the journal's homepage: [www.influenzajournal.com/synergy.com/loi/IRV](http://www.influenzajournal.com/synergy.com/loi/IRV)

# In the Loop



## Recent publications and news items of special interest to isirv members

by Gavin JD Smith, PhD (gjsmith@hku.hk)



### **PATHOGENESIS**

#### **NS1 PDZ ligand domain as an influenza virulence determinant**

Genome analysis of avian influenza virus had indicated that four C-terminal residues of the NS1 protein were a PDZ ligand domain and a possible virulence determinant. Four C-terminal amino acid residues were engineered into the A/WSN/33 virus NS1 protein. Viruses containing NS1 sequences from the 1918 H1N1 and highly pathogenic H5N1 viruses demonstrated increased virulence in infected mice.

**Sources:** Obenauer JC, Denson J, Mehta PK, et al. Large-scale sequence analysis of avian influenza isolates. *Science*. 2006;311:1576-1580; Jackson D, Hossain MJ, Hickman D, Perez DR, Lamb RA. A new influenza virus virulence determinant: the NS1 protein four C-terminal residues modulate pathogenicity. *Proc Natl Acad Sci USA*. 2008;105:4381-4386.

### **VACCINATION**

#### **M2 cytoplasmic tail mutant as a live attenuated influenza vaccine**

An H5N1 clade 1 M2 tail deletion mutant provided protective immunity against a clade 2 virus. This suggests that M2 tail mutants have potential as effective live-attenuated vaccines against H5N1 influenza virus infection.

**Source:** Watanabe T, Watanabe S, Kim JH, Hatta M, Kawaoka Y. Novel approach to the development of effective H5N1 influenza A virus vaccines: use of M2 cytoplasmic tail mutants. *J Virol*. 2008;82:2486-2492.

### **CLINICAL MEDICINE**

#### **Community-acquired pneumonia (CAP) in adults**

Virus-associated CAP is common in adults, and polymicrobial infections involving bacterial and viral pathogens are frequent and may be associated with severe pneumonia.

**Source:** Jennings LC, Anderson TP, Beynon KA, et al. Incidence and characteristics of viral community-acquired pneumonia in adults. *Thorax*. 2008;63:42-48.

### **EMERGING INFECTIOUS DISEASES**

#### **Temporal and spatial patterns of emerging infectious diseases (EIDs)**

Resource allocation for scientific and surveillance efforts to counter EIDs are focused on countries from where these diseases are least likely to originate.

**Source:** Jones KE, Patel NG, Levy MA, et al. Global trends in emerging infectious diseases. *Nature*. 2008;451:990-993.

#### **Swine influenza virus infection of humans**

Occupationally exposed swine workers and their non-swine-exposed spouses are at increased risk of zoonotic influenza virus infections.

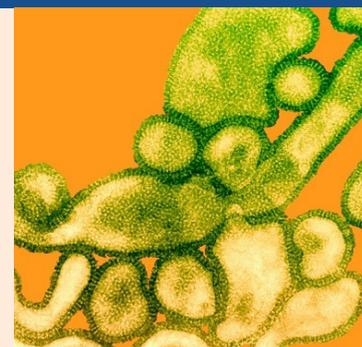
**Source:** Gray GC, McCarthy T, Capuano AW, Setterquist SF, Olsen CW, Alavanja MC. *Emerg Infect Dis*. 2007;13:1871-1878.

# In the Loop



## Recent publications and news items of special interest to isirv members *continued*

by Gavin JD Smith, PhD (gsmith@hku.hk)



### VIRUS EVOLUTION

#### Homologous recombination in human influenza A virus

Extensive testing of sequence data from H3N2 and H1N1 viruses failed to provide convincing evidence for homologous recombination. Homologous recombination plays only a very minor role in the evolution of human influenza A virus.

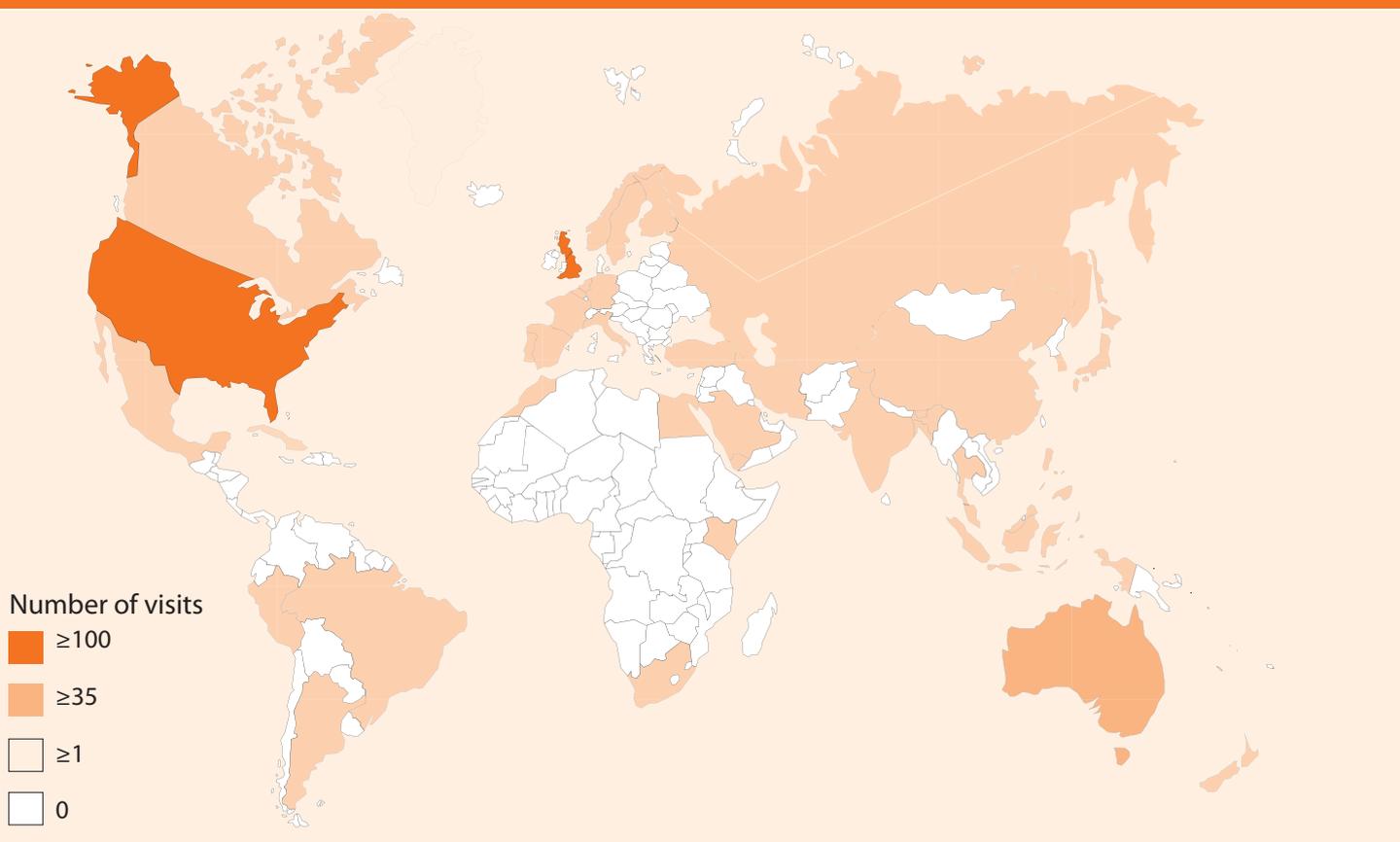
**Source:** Boni MF, Zhou Y, Taubenberger JK, Holmes EC. Homologous recombination is very rare or absent in human influenza A virus. *J Virol.* 2008: JVI.02683-07v1.

*Dr Smith is affiliated with the State Key Laboratory of Emerging Infectious Diseases, The University of Hong Kong.*



**is there a new publication you'd like to recommend to your colleagues?**

Drop us a line at [marge.tamas@intmedpress.com](mailto:marge.tamas@intmedpress.com).



isirv.org website traffic by country of origin—2008

## Options for the Control of Influenza VII 2-7 September 2010

by Lynne Pryor (lynne.pryor@meditechmedia.com)



Victoria Harbor, Hong Kong

On behalf of the **isirv** Board of Directors, it is our pleasure to announce that Hong Kong SAR China has been selected as the destination for the *Options for the Control of Influenza Conference VII* scheduled for 2010. In addition, we are pleased to welcome Professor Malik Peiris, Department of Microbiology, University of Hong Kong and Queen Mary in Hong Kong, serving as Conference Chairman, Professor Yi Guan, Department of Microbiology, University of Hong Kong, serving as Scientific Programme Chairman, and Dr Gavin Smith, State Key Laboratory of Emerging Infectious Disease, Department of Microbiology at the University of Hong Kong, serving as Communications Liaison.

**isirv** Secretariat MediTech Media Conferencing, Inc received several proposals in response to its request. The other great locations considered included Cape Town, South Africa and Brasilia, Brazil. After careful review and site visits by MTMC, Hong Kong received a unanimous vote from the **isirv** Board Members.

Since 1985, *Options for the Control of Influenza* has grown from a small scientific symposium to what is today the largest international conference exclusively devoted to influenza. Hong Kong will continue to contribute to this growth by delivering a highly scientific programme in a city that is a vibrant fusion of Eastern and Western cultures. Hong Kong will welcome the *Options* delegates to a unique and ever-changing metropolis rich with Chinese character. An established relationship with the Hong Kong Tourism Board will ensure an exceptional cultural event for the *Options* delegates. Spouse programmes, pre- and post-conference tours, and an incomparable

scientific programme will make for a memorable *Options VII*. Planning and selection for the Scientific Programme and Organizing committees is in full swing and we look forward to being in Hong Kong in 2010.

Don't miss this triennial event, mark your calendar and check the **isirv** website for updated information as it becomes available.

**The premier conference devoted to influenza and covering every imaginable topic from basic science to healthcare policy and pandemic planning**



The Yuen Yuen Institute is a religious complex that demonstrates the significance of Confucian, Taoist and Buddhist contributions to the society.

## International Symposium on Viral Respiratory Disease Seville, Spain

by John Watson (john.watson@hpa.org.uk)



River Guadalquivir and the Torre del Oro, Seville.

A great deal of planning for the *International Symposium on Viral Respiratory Disease Surveillance* has been accomplished since the fall 2007 issue of the newsletter was published. We envision that this meeting will examine the integration of epidemiologic and virologic surveillance systems in influenza and other human viral respiratory diseases. The intended audience includes clinicians, epidemiologists, virologists, infection control specialists, public health professionals and health service managers. The Symposium objectives are shown in Box 1. The meeting will take place over 2.5 days, and will consist of lectures and workshops, as outlined in the accompanying figure.

The meeting will be of particular value to those responsible in each country for viral respiratory disease surveillance and related research in national public health organizations, academic institutions and ministries of health. Proposals for practical, stepwise implementation of surveillance systems will be a highlight of the meeting, and special attention will be given to surveillance techniques for regions of the world with severe resource constraints. As a result of participating in this meeting, attendees will have the practical tools to review current viral respiratory disease surveillance and implement developments of, or revisions to, local or national systems.

Financial support for this meeting has been sought from a number of non-governmental and governmental organizations, foundations, and commercial firms, and has been partially successful. Although many potential supporters are

greatly interested in the Symposium, annual budget cycles necessitated postponing the meeting from June 2008 to March 2009. After careful consideration by the programme committee, whose members are listed in Box 2, Seville, Spain was chosen for its climate, convenience, accessibility, and cost. Further details about the Symposium will be published on the **isirv** website and in a future issue of this newsletter.

### Box 1. Surveillance Symposium Meeting Objectives

- Review the benefits of influenza and other respiratory virus surveillance to the population whether at the local, national or international level
- Consider current clinical, epidemiological and virological surveillance methods and systems for influenza and other respiratory viruses
- Compare current approaches to seasonal influenza surveillance with proposed surveillance during a pandemic
- Assess the benefits and limitations of integrated clinical, epidemiological and virological surveillance methods
- Consider options for implementing, sustaining, enhancing, and expanding surveillance for respiratory viral disease other than influenza
- Identify issues requiring further discussion and research
- Publish summary recommendations and symposium report in appropriate peer-reviewed journal(s), including *Influenza and Other Respiratory Viruses*

**Proposals for practical, stepwise implementation of viral respiratory disease surveillance systems will be a highlight of the Symposium**

## International Symposium on Viral Respiratory Disease Seville, Spain continued

by John Watson (john.watson@hpa.org.uk)

Figure 1. Surveillance Symposium Programme Outline

Day 1	Day 2	Day 3
<ul style="list-style-type: none"> <li>• Plenary lectures on key issues in viral disease surveillance</li> <li>• Current status of viral respiratory disease surveillance systems</li> </ul>	<ul style="list-style-type: none"> <li>• Seasonal and pandemic influenza surveillance</li> <li>• Regional reports</li> <li>• Integrating surveillance systems</li> <li>• Workshops</li> </ul>	<ul style="list-style-type: none"> <li>• Global surveillance and virological methods for respiratory viruses other than influenza</li> <li>• Newly recognised viral respiratory pathogens</li> <li>• Respiratory virus surveillance systems</li> </ul>

### Box 2. Surveillance Symposium Scientific Programme Committee

- **John Watson, Chair (Health Protection Agency Centre for Infections, United Kingdom)**
- Terry Besselaar, (National Institute for Communicable Diseases, South Africa)
- Joseph Bresee, (Centers for Disease Control and Prevention, United States)
- Sylvie Briand, (WHO, Switzerland)
- Tracy DuVernoy, (Global Emerging Infections Surveillance & Response System, United States)
- Gregory Gray, (University of Iowa, United States)
- Lance Jennings, (Canterbury Health Laboratories, New Zealand)
- Lalit Kant (Indian Council of Medical Research, India)
- Ziad Memish, (Gulf Cooperation Council [States] Center for Infection Control, Saudi Arabia)
- Michael L Perdue, (Department of Health and Human Services, United States)
- Vilma Savy, (Instituto Nacional de Enfermedades Infecciosas, Argentina)
- Wenqing Zhang, (WHO, Switzerland)

Dr Watson serves as Chair for the **isirv** International Symposium on Viral Respiratory Disease Surveillance, and Deputy Chair, **isirv**. He is also Director, Respiratory Diseases Department, at the Health Protection Agency Centre for Infections, UK.

### Voices of isirv

The **isirv** board would like to broaden the society's reach to be of greatest interest to current and potential **isirv** members, and is keenly interested in your ideas for future events and newsletter articles. Is there a topic you'd like to write about for the newsletter? Do you have an idea for a meeting or satellite symposium? What are the most pressing issues in viral respiratory disease? Please send your thoughts to [marge.tamas@intmedpress.com](mailto:marge.tamas@intmedpress.com).

### About isirv

**isirv** is a scientific professional society to promote the prevention, detection, treatment, and control of influenza and other respiratory virus diseases. It will:

- Provide a forum for the exchange of information and for international collaboration
- Advocate for research and effective public health measures
- Promote relevant scientific and clinical training and education
- Organize scientific meetings and workshops on key topics and develop international consensus
- Support and develop partnerships with international bodies such as the WHO and other agencies

# isirv Membership Application

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Current Position	Academic Title	
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**Please indicate your five main areas of interest (rate from '1' to '5', with 5 as the highest score)**

<input type="checkbox"/> Animal health/disease	<input type="checkbox"/> Diagnostics, epidemiology, and surveillance
<input type="checkbox"/> Human health/disease	<input type="checkbox"/> Vaccines
<input type="checkbox"/> Zoonoses/ecology	<input type="checkbox"/> Immunology
<input type="checkbox"/> Pandemic preparedness	<input type="checkbox"/> Antivirals
<input type="checkbox"/> Policy for control and prevention	<input type="checkbox"/> Viral structure and replication
<input type="checkbox"/> Cost benefit and health economics	<input type="checkbox"/> Other? <input type="text"/>

**Which virus(es) are your main interest?**

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**The Society's members will elect the officers of isirv.**

If proposed, would you accept to be nominated for election?

Please give any general suggestions you have on priorities for **isirv** activities for the first 1-2 years

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Membership fees of €100 may be paid by cheque or bank transfer to the **isirv** account: Barclays Bank, Edgware Branch, 126 Station Road, Edgware, London, HA8 7RY. Sort code 20 29 41. Account #307 876 20. To register for **isirv** and pay online: visit [www.isirv.org](http://www.isirv.org). Payment confirmation will be mailed to the address provided on the membership form.

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