surveillance network and consolidation of the information available about mortality and morbidity.

**Methods:** Study design was descriptive and transversal, and data from the period 2007-2011 was collected from the National Surveillance System of Health (Sistema Nacional de Vigilancia de la Salud; SNVS). Analysis was made using Microsoft Office Excel, GeCo C2, Epiinfo 3.5.1 and SIGEpi 1.0 software.

**Results:** Within the study period 45012 cases of envenomation by venomous animals (9002 cases/year) were registered in the SNVS. 3692 (8.2%) cases were caused by snakes, 6084 (13.5%) by spiders and 35236 (78.3%) by scorpions, corresponding to an incidence rate of 1.8, 3.0 and 17.6 cases/10,000 inhabitants per year, respectively. 15-24 years old was the most affected age group. During the same period 40 deaths were registered, snake bites accounted for 42.5%, scorpion stings for 35.0% and 22.5% were caused by spider bites. Among snake caused deaths, people older than 65 years old were most affected (47.1%), while spiders caused death preferably to the patients older than 45 years old (62.5%). On the other hand, children of 9 years old or less accounted for the majority of deaths by scorpions (96.4%). Geographic distribution of envenomation incidence is not uniform, while scorpions and spiders show the highest incidence in the northwest region (58.5 cases/10,000 inhabitants per year and 7.7 cases/10,000 inhabitants per year respectively), snakes morbidity is higher in the northeast region (8.6 cases/10,000 inhabitants per year). Besides, Northeast and Northwest regions show the greatest notification for snakes (1591 and 1379 cases respectively), while scorpion and spider notification is highest in the center and northwest regions (14033 and 13757 cases for scorpion; 1718 and 1799 for spiders). Envenomation occurs mainly in the summer season for all three poisonous animals.

**Conclusions:** Envenomation by venomous animals constitutes a significant health problem in some regions of Argentina. These events are always medical emergencies and prevention is made through education. Besides, specific treatment provision and adequate management of patients are necessary to avoid serious damage or death.

**Keywords:** Health surveillance, snakes, spiders, scorpions, epidemiology

**Q. Venomous Animal Biology**

**279. Travel Toxinology: An Illustrative Case of Brown Spotted Pit Viper (**Protobothrops mucrosquamatus**) Bite With Review of Clinical Toxinology Issues in Travel Medicine**

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**Background:** Tourism is emerging as a major economic driver globally and travellers visit ever more exotic places. As a consequence, exposure to Venom Induced Diseases (VIDs) becomes an increasing risk. Lack of resources to adequately diagnose and treat VIDs in many parts of the world increases the risk of suboptimal outcomes.

**Case Report:** A 12 year old girl on holiday with her family in Vietnam was bitten on her ankle by a snake while on a tour boat in Ha Long Bay. Local suction and a tourniquet were applied as first aid, then she was transferred to the mainland hospital where the tourniquet was removed, but no antivenom given as the snake identity was unknown. The snake had been killed and was brought with the patient. The patient complained of significant local pain which remained untreated, then was transferred to a larger hospital, where again no antivenom was given because of doubt over the snake's identity. By this time, many hours later, the foot and leg, extending to the abdomen, was markedly swollen. A mild coagulopathy was present, with thrombocytopenia and anaemia. The patient continued to be managed conservatively, with no antivenom and after a week was transferred to Australia. There a marked foot drop was evident with MRI evidence of deep foot muscle necrosis. Despite this over the following weeks the patient regained full use of the foot. Clear photographs of the killed snake were identified by experts as **Protobothrops mucrosquamatus**. The only antivenom for this snake, a known inhabitant of northern Vietnam, is made in Taiwan.

**Discussion:** This case illustrates a number of problems for tourists envenomed in another country where communication and health system issues can adversely affect treatment. Early consultation with a clinical toxinologist might have allowed identification of the snake and sourcing of suitable antivenom. This case is illustrative of a wider problem for “travel toxinology” cases. Local health systems may not have the expected expertise to diagnose and treat envenoming, even by local species. Rapid access to (clinical toxinology) expertise per phone, availability of suitable antivenoms and urgent transfer of stabilised envenomed patients are all required elements in improving patient outcomes.

**Keywords:** Snakebite, **Protobothrops mucrosquamatus**, envenoming 10.1016/j.toxicon.2012.04.280

**280. Genetic Regulation of Venom Production during Embryonic Development of the Indochinese Spitting Cobra, *Naja siamensis***

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**Background:** Snake venoms are a potential source of pharmacologically active components. Since the initial discovery of the ACE inhibitors which were originally derived from the venom of the Brazilian Arrow Head Viper, several compounds have stimulated pharmacological interest although issues relating to venom yield and variability have hampered efforts to isolate these agents.