Methods The analysis is based upon structured interviews conducted on a multi-district sample of 240 retailers/service providers and around 1500 households across UP. The data collected is then triangulated with other sources of data available for UP, collected within the reference period of 2008–2010. The location of retailers and service providers were then mapped to analyse the geographic spread and thus accessibility. This data are also supplemented with qualitative assessment of existing practices related to management of childhood diarrhoea.

Results and Conclusion Triangulation of data suggests that the following bottlenecks contribute to low ORS/Zinc use:

- Low awareness and perceived efficacy of ORS and Zinc for management of childhood diarrhoea both among service providers and end-users
- Erratic availability of ORS and Zinc in public-health facilities
- Geographic clustering of retailers/sources of ORS and Zinc
- Financial constraints of beneficiaries

[i]Coverage Evaluation Survey for India, UNICEF, 2009.

P2-362 WITHDRAWN

P2-363 ASSOCIATION OF CLIMATE FACTORS WITH INCIDENCE DENGUE FEVER: AN ECO-EPIDEMIOLOGICAL ANALYSIS

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Background Dengue infection, which causes dengue fever, dengue haemorrhagic fever and dengue shock syndrome are currently endemic or intermittently epidemic in many tropical and subtropical regions of the world. According to the WHO, dengue has recently become a major public health concern globally. It is generally found in tropical and sub-tropical regions, and more specifically in urban and semi-urban areas.

Objective To study the relationship of dengue fever and climate factors.

Methods The confirmed dengue infections in hospital cases were detected through the hospital information system. Monthly data for total rainfall, temperature and relative humidity for the year 2010 were obtained from Meteorological Department of Karachi.

Results Overall, 576 cases were positive for dengue and hospitalised during 2010. The mean age was 30±17.66 years and 391 (67.9%) were males. Out of 576 cases, 476 (82.6%) were adults. Dengue infection cases were reported during warmest weather with maximum number of cases 226 (39.2%) reported in the month of October 2010 followed by 135 (23.4%) in the month of September 2010. The difference between number of positive cases during different months was significant (p=0.03).

Conclusion These results suggest that climate factors such as temperature and rainfall may be responsible for an outbreak of dengue infection. Dengue viruses have a known transmission cycle, but changes in temperature or rainfall may have varied local effects.

P2-364 CLIMATE CHANGE THREATENS BLOOD SUPPLY THROUGH ALTERING THE DISTRIBUTION OF VECTOR-BORNE DISEASE: AN AUSTRALIAN CASE-STUDY

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Introduction Climate change is expected to promote more intense and prolonged outbreaks of vector-borne disease, and alter the geographic boundaries of transmission. This has implications for the safety and supply of fresh blood products around the world. In Australia, a recent outbreak of dengue fever caused a prolonged regional shortage in the supply of fresh blood products. Climate change thus has the potential to affect the safety and supply of blood globally through its impact on vector-borne disease. We demonstrate this using the example of dengue in Australia.

Methods Using four climate change scenarios we modelled geographic regions in Australia suitable for dengue transmission and the number of people living in transmission zones, and estimated the effect of future outbreaks on blood supply.

Results Geographic regions with climates that are favourable to dengue transmission could expand to include large population centres in a number of currently dengue-free regions in Australia and reduce blood supply across several states.

Conclusion Without significant global greenhouse gas reduction, there could be an eightfold increase in the number of people living in dengue prone regions in Australia by the end of the century. Similar impacts will be experienced elsewhere and for other vector-borne diseases, with regions currently on the margins of transmission zones most affected. Globally, climate change is likely to compound existing problems of blood safety and supply in already endemic areas and cause future shortages in fresh blood products through its impact on transmission of vector-borne disease.

P2-365 CLIMATE CHANGE IMPACTS ON ROSS RIVER VIRUS IN AUSTRALIA

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Introduction Ross River virus disease is the most prevalent mosquito-borne disease in Australia, with 4400 cases annually. We explore how changing future climate, in combination with social responses, may alter the habitat and survival of vectors and hosts. Subsequent changes to the pattern and distribution of infections suggest a range of adaptation strategies for reducing transmission.

Methods We map projected changes to rainfall across Australia to 2100 under "dry" and "wet" scenarios and hypothesise how these changes may affect disease distribution over space and time.

Results Changes to transmission patterns will be regionally-specific. Increasing average temperatures will support virus activity in new regions, or for longer periods of each year, as long as humidity remains sufficient for vector survival. Outbreak patterns will change in some regions as increasing drought is punctuated by heavier rainfalls. Explosive outbreaks between periods of inactivity are increasingly likely in some areas. Epidemic regions bordering endemic regions may move towards endemicity. In coastal areas, saltwater vector breeding will be enhanced by increased tidal inundation with sea level rise. With population growth the number of people at risk of infection will increase each year.

Conclusion The pattern of infections in some local areas may change significantly from the historical norm as climate changes, while local adaptations, such as those to manage water deficit, may inadvertently increase vector habitat. Responses that are coordinated between state and local governments and across portfolios will be most successful and cost effective.