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FLYING INSECT FAUNA OF HOSPITALS

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Abstract The collection and identification of flying insects associated with a number of UK hospitals was undertaken, in order to classify and enumerate the insects found and establish their seasonality and location in such premises, therefore informing pest control measures. A total of 19,937 individual insects (and other arthropods) were collected from seven UK hospitals over a 20 month period via ultra-violet light flytraps. Of these individuals, approximately 114 arthropod species were identified. Chironomidae were the most common flies, *Calliphora vicina* were the most common synanthropic fly and 'drain flies' were surprisingly numerous and represent an emerging problem in hospitals. Psychodidae were the most common of the 'drain flies' and were therefore the most important known insect vector of the 'hospital superbug' *Clostridium difficile* present in hospitals. Other known insect vectors of *C. difficile* present were *Musca domestica*, *Fannia canicularis* and *Drosophila* sp. Of the known insect vectors of *C. difficile*, *M. domestica* were surprisingly low in numbers. Another perhaps surprising finding was that 'occasionally encountered insects' (also known as occasional invaders / casual intruders) were actually the group most frequently found in hospitals. It was noted that presence of certain species, specifically some of the 'occasionally encountered insects' is diagnostic of proofing inadequacies in UK hospitals. Regarding seasonality, many species were present all year round and not all peaks in numbers were in summer, insect diversity was highest in spring and sheer numbers of insects were highest in summer. Location data showed that insects were found most often in food preparation areas. This study updates the knowledge base regarding flies in hospitals and contrasts with the general wisdom that houseflies *M. domestica* are the most numerous in such premises and that flies are mainly a summer problem. Furthermore, this work provides pest control and infection control staff with knowledge of the key flying insect species that are likely to be present in hospitals at certain times of year and in which hospital locations. This knowledge better informs the design of integrated flying insect management programs, in order to minimise the risk of disease transmission by flying insects, with pest control central to infection control.