INTRODUCTION

The domestic ferret (Mustela putorius furo) has been in medical research since the early 20th century. While being relatively easy to maintain and inexpensive, ferrets share many anatomical, metabolic and physiological features with humans, which makes them an excellent animal model used in research. The anatomic features of ferrets (makes physical restraint difficult) and the inherent behavior of the ferret requires increased safety and consideration of breeding lines may lead to a more tractable animal model that is less prone to aggressive behaviors.

METHODS

Data collected on all CDC laboratory incidents was searched for all incidents involving ferrets. From the period of 1 January 2013 to 31 December 2017 the CDC has maintained an average daily census of 263 ferrets (Fig 1). The total number of animal incidents and departures from the numerous approved studies was 3780 ferrets. Population of ferrets was often accessed daily for routine husbandry, study procedures and health monitoring. Approximately 67 animals were handled on a regular work day, resulting in 335 individual potential exposures to ferret bites or scratches. Annually this represents approximately 16,420 separate events where ferrets were manipulated.

RESULTS

From the period of 1 January 2013 to 31 December 2017 the CDC has maintained an average daily census of 263 ferrets (Fig 1). The total number of animal incidents and departures from the numerous approved studies was 3780 ferrets. Population of ferrets was often accessed daily for routine husbandry, study procedures and health monitoring. Approximately 67 animals were handled on a regular work day, resulting in 335 individual potential exposures to ferret bites or scratches. Annually this represents approximately 16,420 separate events where ferrets were manipulated.

DISCUSSION

Most injuries (hand/finger bites) occurred during routine ferret handling and restraint procedures which often requires a vinyl or latex glove for increased dexterity. Contributing to this potentially critical biosafety issue in manipulating any animal model used in research, the anatomic features of the ferret (makes physical restraint difficult) and the inherent behavior of the ferret requires increased safety and consideration of breeding lines may lead to a more tractable animal model that is less prone to aggressive behaviors.

CONCLUSIONS

Might failures employed at the CDC for handling frequently unpredictable ferrets has revolved around the use of bite resistant gloves, vendor selection, and a pronounced effort to train individuals in the safe manipulation of ferrets. Efforts to require two individuals to perform ferret techniques have been implemented and may further reduce the incidence rate. The incident rate of bite/scratch incidents presented here seems relatively low; however acceptable risks are hard to determine with the apparent paucity of citations in the literature reported. Further reductions in incidents may be possible with better designed, bite-resistant procedural gloves or development of a temperature assessment protocol applicable to ferrets.

Krzysztof Sieradzki, CDC, Office of Laboratory Science and Safety, email: hwg8@cdc.gov

Contact Info

Krzysztof Sieradzki, CDC, Office of Laboratory Science and Safety, email: hwg8@cdc.gov
Phone: (404) 639-4899