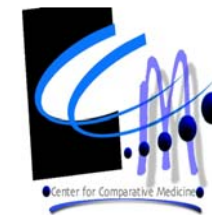


Standardization of Rodent Health Surveillance With Computerized Health Alerts: Animal Welfare and Economic Benefits



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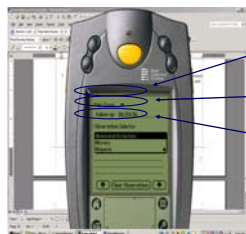
BACKGROUND

Monitoring and attending to health problems for large numbers of rodents can be challenging for research facilities, while failure to do so in a timely fashion may result in unnecessary pain and distress as well as regulatory noncompliance. Historically, potential health concerns in rodents at MGH were identified by animal care staff and brought to the attention of veterinary technicians; when necessary, the facility veterinarian was contacted for further consultation. Once a health alert was documented, research personnel responsible for that animal were contacted via phone or email, and treatment was initiated once the research personnel responded.

Upon review of this process, it became obvious that time from discovery of a health concern to implementation of a treatment plan could be significantly shortened through new technology (PDA data capture), enhanced staff training and standardized email alerts. Animal care staff was trained to identify common health problems. Standardized language for each health alert was devised and email templates were created. Depending on the severity of the concern, research personnel were provided a limited timeframe in which to respond in case treatment would compromise their studies; otherwise, CCM staff would implement the treatment plan described in the standardized email.

DATA CAPTURE

Handheld PDA and bar-coded cage cards allow animal care staff to rapidly and accurately document health concerns electronically.



Severity of health concern

Date for follow-up

Observation

DATA TRACKING


Health concerns captured electronically were collated and exported to Microsoft Excel (see below). Data could be sorted by desired criteria such as investigator, protocol, room, observation, etc. for rapid analysis of colony health concerns and/or comparisons of treatment regimens.

ID	INVESTIGATOR	DATE CREATED	FOLLOW UP	OBSERVATION	BODY PART	FACILITY	STATUS	CARE STAFF	LAST STATUS DATE	CASE CLOSED DATE
14205		07-May-07	08-May-07	Fighting / Wounds	Back	CNY 149-8	Closed	Maria M Dos Santos	07-May-07	14-May-07
14270		10-May-07	11-May-07	Fighting / Wounds	Back	CNY 149-8	Closed	Francoisa Barbosa	10-May-07	14-May-07
14231		01-May-07	02-May-07	Fighting / Wounds	Back	CNY 149-8	Closed	Isa	07-May-07	14-May-07
14224		03-May-07	04-May-07	Hunched Posture	Whole Body	CNY 149-8	Closed	Maria M Dos Santos	07-May-07	14-May-07
14225		03-May-07	04-May-07	Hunched Posture	Whole Body	CNY 149-8	Closed	Maria M Dos Santos	07-May-07	14-May-07
14163		04-May-07	07-May-07	Hunched Posture	Whole Body	CNY 149-8	Closed	Maria M Dos Santos	04-May-07	14-May-07
14162		04-May-07	07-May-07	Hunched Posture	Whole Body	CNY 149-8	Closed	Maria M Dos Santos	07-May-07	14-May-07
14112		30-Apr-07	15-Apr-07	Malocclusion	Teeth	CNY 149-8	Closed	Cassa, Gregoire	30-Apr-07	14-May-07
14262		09-May-07	23-May-07	Malocclusion	Teeth	CNY 149-8	Closed	Cassa, Gregoire	09-May-07	14-May-07
14264		09-May-07	11-May-07	Malocclusion	Teeth	CNY 149-8	Closed	Cassa, Gregoire	09-May-07	14-May-07
14248		08-May-07	09-May-07	Mass	Flank	CNY 149-8	Closed	Nerida	09-May-07	14-May-07
14054		25-Apr-07	26-Apr-07	Mass, Tumor	Rear Leg	CNY 149-8	Closed	Nerida	25-Apr-07	14-May-07
14055		25-Apr-07	26-Apr-07	Mass, Tumor	Rear Leg	CNY 149-8	Closed	Nerida	25-Apr-07	14-May-07

STAFF TRAINING

CCM staff was trained to identify & treat common health concerns. Initial PowerPoint presentations given by facility veterinarians described how to perform a health check and identify common health concerns in rodents, and how to implement standardized treatment plans.

Training was reinforced through posters in each animal room depicting photos of common health concerns and standard treatments. An example is provided below.

Digital Paradigm "Symptoms"	MILD	MODERATE	SEVERE	Email template
Ulcerative dermatitis 	SIGNS/SYMPOMS Small dry lesions Small area affected Mild itching	SIGNS/SYMPOMS Larger, moist lesions. Itching, visible infection	SIGNS/SYMPOMS Large, moist lesions, Itching, scar tissue &/ or strictures restricting body movement	Ulcerative Dermatitis
	RECOMMEND TREATMENT Oral sulfatrim and Benadryl in water for 2 weeks Enter in Bioware Send email	RECOMMEND TREATMENT Oral sulfatrim and Benadryl in water for 2 weeks Enter in Bioware Send email	WHAT TO DO Euthanasia required within 24 hours Enter in Bioware Send email	

STANDARDIZED EMAIL ALERTS

Email templates were created describing common concerns identified in mice. Each template contained standardized language to improve communication between animal care staff and research staff. Information in the email described the health concern and recommended treatment; research staff was further advised that treatment (or euthanasia, if indicated) would be implemented if no response was received within an allowed amount of time (see below).

Response Required
If no response by: (72 hours, state time/day)
CCM will begin treatment

Timeline for investigator to respond

Nature of health concern
Dermatitis: inflammation of the skin

Recommended tx

PI:
Protocol:
Room:
Rack:
Health Card #:
of Affected Animals:
Severity: mild/moderate
Recommended Treatment: treatment with oral Sulfatrim* (sulfamethoxazole/trimethoprim) and Benadryl - added to water bottle

If you have any questions about this health concern, please respond to this email
Moderate dermatitis: characterized by dermatitis, possibly with small ulcerations.
The animal's mobility is not impaired.

RESULTANT BENEFITS

- More accurate health alert identification and veterinary review.
- Response time from identification of a health concern to treatment decreased by up to 75%, benefiting animal welfare.
- Electronic data collection permitted easier trend analysis of health concerns, with resultant improved colony health campus-wide.
- Staffing needs and salary costs were reduced through elimination of three veterinary technician positions.
- Communication between research staff and CCM improved with concise electronic email alerts containing standardized language.
- Animal care staff was more involved in animal health support, leading to increased motivation and career growth.