MANAGEMENT OF A BEAGLE COLONY FOR LIFE-SPAN STUDIES WITH
RADIONUCLIDES AS AIDED BY A COMPUTER STORAGE AND RETRIEVAL SYSTEM*

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Getting information recorded, finding it when you need it and reading it when you find it are problems shared by all of us in maintaining complete animal records. As with all experiments using large animals for lifespan studies, this unavailable information can be very crucial in interpreting unexpected results. This ultimate use of animal care records to help in understanding research is probably in the back of our minds but it is really the day to day care and performance of the animal colony that is our immediate concern in keeping records. We would like to describe how our computer information system is assisting in providing good routine animal care in addition to being an important tool in retrieving and summarizing data for use in our research programs.

1. Gil Brown has just described the dog facility at BNW; our record keeping system is summarized in this first slide. Records are handwritten by all personnel involved with the animals, keypunched and processed by a large offsite computer. Our user orientated system allows our people to enter information in their own language without rigid size restrictions or coding requirements. It was patterned after the PRIME system as developed at the Oregon Regional Primate Center (Lusted and Coffin, 1967)¹. We have had our version in full operation for the past two years.

¹ Lusted, L. B. and Coffin, R. W. 1967. PRIME, an automated Information System for Hospitals and Biomedical Research Laboratories. Year Book Medical Publishers, Inc. 232 pp.

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2. The next slide shows the volume of information processed in our colony of 400 dogs during 1971.
3. We have found that getting information written down is a critical point of record keeping -- with or without a computer. This is easier to accomplish when record forms are convenient to use for the type of data being recorded. The projected record form is typical of those we use to enter narrative information.
4. All our records have a standard identification portion which must be rigorously filled in. We feel that requiring the animals sex as part of the identification is very valuable in insuring the correctness of our records.
5. Entering data on this form can vary from checking items to filling in spaces to writing a detailed description of the particular event.
6. The printed computer output is shown in the next slide. As we still do not fully trust the computer, we keep handwritten records along with the computer reports.
7. The one area the computer system has really justified itself is in our biweekly program of weighing and observing our dogs. The computer takes all the recent animal movements, births and deaths

to generate a worksheet arranging the animals by kennel location. Weights, diet adjustments and observations on the animals health are recorded directly on the computer print-out. All this is done with carbon paper and a second copy of the worksheet collated together. By separating the copies and removing the carbon paper, a working copy is available while the original is used for keypunching.

8. The complete worksheet is presented in the next slide as printed by the computer and filled in by an animal care technician. The following three slides will show the details of the report.

9. The first portion lists the animal number, sex and location. It also presents the animals diet information and a place to change the food level.

10. Recent weights and the animals ideal weight are presented in the next portion to help evaluate the animals health and food requirements. The current weight is entered in this area.

11. The third area provides room for the animal care people to record any abnormalities they may find in handling and weighing the dog. We have found a partial coding system has given us consistence with a minimum of writing in recording observations. A general code is written to describe the abnormality and, if needed, a large amount of

narrative can follow the code. We have also found that some conditions persist for the dogs life time; such as, broken or missing teeth. We have about 20% of our dogs that have such items automatically printed with their records.

12. Several reports are routinely produced from the data gathered on the worksheet and the 20 other forms currently in use. The status report can be broken into sections on diet, weights and experimental condition.

13. The location, age and diet are listed to aid in feeding animals.

14. Three recent weights and the ideal weight are listed next with large changes flagged with a + or - sign.

15. Experimental status completes this report.

16. The observation report lists the animals activity during the two preceding weeks. Again, the following slides will show details of this report.

17. Titles and dates of the various new records are listed so that the colony manager can quickly find animals having problems. The complete record is printed for most types of information although those

records that are numerical in nature such as hematology or clinical chemistry are generally summarized in a separate statistical report.

18. Those that are narrative in content are printed to aid in animal care and also as a means of checking the keypunching and the computer storage. Copies of these reports are distributed to all principal investigators and animal care leaders. Periodically, a complete chronology for each animal is printed which incorporates all the information from the biweekly reports.

19. We have not used our computer for scheduling animal care due to all the unforeseeable conflicts that tend to arise. We do maintain a report that lists dates when events such as vaccination or parasitology were last done. This has been valuable in providing the flexibility that animal care requires.

This system, like all computer programs, is being constantly modified and improved. In fact, the success or usefulness of computers in keeping animal care records is very dependent on animal care people and computer science people working closely together to mutually appreciate the problems and solutions. We feel our automated record system is allowing us to provide improved animal care with manpower savings in maintaining and storing the records. We also feel our animals have increased in value due to the availability of complete biomedical histories on each animal.