EXPLORING THE STATE OF VETERINARY INFORMATICS

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Many Organizations Are Concerned with Veterinary Informatics Progress

- Association for Veterinary Informatics
- American Veterinary Health Information Management Association
- Electronic Health Record Task Force - American Animal Hospital Association
- Evidence Based Veterinary Medicine Association
- American Medical Informatics Association
- Veterinary Medical Libraries and Medical Informatics Sections, Medical Library Association
Veterinary Informatics Literature was Narrowly Focused

• 1995-2004 articles (n=1385) mostly:
  – Information/bibliographical retrieval
  – Hardware or programming
  – Radiology and imaging

• primarily production and companion animals

• 6 journals accounted for 31% of the citations.
  – 2 international – Vet Rec, Rev Sci Tech

Today’s Veterinary Practice Takes Advantage of a Few Informatics Areas

- Digital radiology and Picture Archiving Communication Systems (PACS)
- Telemedicine consultations
- Financial and reminder systems for practice management and herd health
- Client information portal software (not usually integrated with electronic health record)
- Animal identification systems
Tomorrow’s Veterinary Practice Should Have Integrated Electronic Health Records

- drug dosage, allergy and side effect alerts and connection to formulary info
- case identification through uniformly-accepted diagnostic codes
- tools to facilitate outcome assessments
- automatic laboratory reporting for public health
- clinical practice guidelines and practice-specific protocols
- links to resources for just in time learning and evidence-based practice
Evidence Based Veterinary Medicine Connects Information and Outcomes.

- Informatics can improve evidence-based veterinary practice by
  1) connecting veterinarians to patient-specific knowledge based information (KBI) at the point of care, and
  2) improving access to problem or diagnosis data and ability to do outcome and epidemiological studies across multiple institutions' cases through improved data mining and transmission.
EBVM Needs Knowledge Based Resources at Point of Care

• Veterinary content providers should connect from EHRs for individual and institutional subscribers
  – Veterinary Titles from Wiley
  – VetConsult and Vet Med Clinics (Elsevier)
  – VetMed Resource (CABI)
• Infobuttons standard for Health Level 7 lacks species
• Clinical decision tools such as Consultant
Outcome Studies Across Universities Use Veterinary Medical Database

- More than 7 million case records from 26 universities
- Hospitals submit case data: paper, digital free text or SNOMED coded
- Typical summaries include breed, age, sex, geographical region and date of disease onset.

Commercial Hospital Enterprise Systems Address Larger Health Questions

• Animal Health

• Human Health
Public Data Resources Exist for Animal Genetics

• **OMIA – Online Mendelian Inheritance in Animals**
  - Professor Frank Nicholas of the University of Sydney and hosted by NCBI of NLM

• **LIDA-- Listing of Inherited Disorders in Animals** - University of Sydney
  - allows users to select from the 180 recognized dog breeds in Australia and find out which ones are prone to the more than 500 inherited disorders on record
  - non-technical descriptions written by veterinary students
Veterinary Informatics Survey to Explore Efforts in Progress

- 25-question online survey distributed to the Association of Veterinary Informatics list
- 5 respondents (3.8% response rate)
- Electronic health records
  - 1/5 currently web-based
  - 3/5 remotely accessible to clinicians and 2/5 students
  - None currently link to
    - drug information in real-time
    - textbooks or practice guidelines
    - just in time learning (other than system help)
Respondents Suggest Areas of Informatics Development

- Direct test results from Lab Information System
- 2/5 have diagnostic devices results going directly into the records
- Clinical decision support tools
- Animal disease cluster-detection systems; Animal health forecasting systems.
- Radiology system (PACS/RIS) interfacing to hospital information system
- Automated Fax/Email of records/letters
Librarian Involvement in Veterinary Informatics Should Increase.

- 10-question survey distributed to the Veterinary Medicine Libraries (VETLIB-L) email list.
- 14 respondents (6.6% response rate).
- Several consulted people outside the library for one or more of the questions.
- 5/14 provide access to medical records from library computers
- No library’s electronic resources are connected to the medical record system
Student Exposure to Veterinary Informatics Varies Greatly

• Hospital info system training
• Selective on practice management covers practice management information systems.
• Bioinformatics workshops or selectives.
• Curriculum ranges from none, to small amounts in the first 2-3 weeks, to an entire one credit course in 2\textsuperscript{nd} year. Specialized courses:
  – Intro to Production Animal Informatics
  – Advanced Dairy Production Informatics
  – Advanced Swine Production Informatics.
Potential Areas for Librarian Involvement in Veterinary Informatics

• 3/13 contribute to vocabulary development (CAB Thesaurus, MeSH, SNOMED, Snopad [Hungarian Veterinary Thesaurus], wildlife)

• 2/14 advise students about use of clinical case information, medical record images, or other confidential information in presentations or any other context

• 1/14 offer bioinformatics training focused on animal genetics or animal health issues
Task Force: Connecting the Veterinary Health Record to Information Resources

• Explore how to encourage connections between publishers of veterinary resources and veterinary health record/practice management systems developers and vendors.
• Compile a list of information providers who have content that could be beneficial at point of care in veterinary systems
• Coordinate with the American Animal Hospital Association's Electronic Health Records Task Force which is working closely with the systems vendor community.
15th Annual Talbot Informatics Symposium on Computers and Veterinary Informatics is August 2010

- “Informatics - the Foundation and Future of Veterinary Medicine” AVMA Annual Convention in Atlanta, Georgia.
- Technologies to facilitate workflow allow veterinarians to spend more time on patient care, which is maximized through use of an effective electronic medical record. EMR data across institutions facilitates analyses that feed evidence-based medicine.
Acknowledgments

• Kimberly Smith virtually introduced me to AVI members.
• Heidi Burnett, chair of the AAHA Electronic Health Records Task Force, invited me and other veterinary librarians to partner.
• The Medical Informatics Section/Medical Library Association Career Development Award provided me support towards attending this meeting to share information about veterinary informatics.

Questions?

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