



Decision Making in Clinical Veterinary Practice

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INTRODUCTION

One of the goals of veterinary education is to produce competent practitioners with requisite skills in making clinical decisions (Radostitset al., 2005). This will ultimately facilitate the making of correct diagnosis and recommendation of most appropriate therapy that will guarantee optimal medical care. This is necessary in view of contemporary challenges and transformations occurring in the animal health care sector. Regrettably, intellectual and reasoning content of clinical decisions among contemporary veterinary clinicians within the country is on the decline. Disease investigations most often are not conducted as intelligent planned activity and thus manifest in inability to articulate and defend the process that led to a diagnosis. Clinical reasoning (CR) method of solving clinical problems is believed to offer clinicians the required tools to help them in their day-to-day clinical decision making regarding appropriate treatment for their patients (Jones et al., 2008). In order to stimulate veterinarians to exercise their CR skills, and improve diagnostic performance and care delivery, a brief outline of CR concepts have been provided in this paper with emphasis on critical thinking, appropriate knowledge base including current information on technological advancements in biomedical

and veterinary sciences. Also crucial for the effectiveness of subsequent veterinary practice is the imparting of CR skills to veterinary students through supervised clinical training under adequate clinical setting by staff with requisite expertise.

Key words: clinical reasoning; clinical competence; veterinary practice.

Problem solving approach to clinical diagnosis

Clinical problem-solving is a process of finding out what is wrong with a patient starting with the presenting complaint. The stages of clinical problem-solving should be followed step by step, in order to arrive at the best possible diagnosis and to plan appropriate management. This will entail clinicians observing patients for specific signs and symptoms and taking specific history, which in turn will indicate specific physical examination to be performed (Carter et al., 2005). Examination of the environment where the animal patient is kept, including the socio-economic context of the client in some cases might offer vital clues to the condition and its management (Radostitset al., 2005). Thereafter, a short list of likely diagnoses is formulated, and followed with laboratory investigations to confirm or to rule-out competing diagnoses before treatment is

administered (Carter, 2005).

Solving clinical problems involves a decision-making process; such as which questions to ask during history taking, proper diagnosis to pronounce and treatment including care plan to pursue (Trede and Higgs, 2008). This decision making process used to determine the diagnosis and management of patients' problem is referred to as clinical reasoning (Jones, 1992). Clinical reasoning has been variously referred to as the cognitive process or the critical and analytical thinking process used to determine the diagnosis and management of patients' problem (Terry and Higgs, 1993).

Clinical reasoning has therefore been defined as the thinking and decision-making process that are used in clinical practice, that enables clinicians to make the best clinical judgment for individual patients (Jones and Rivett, 2004; Higgs and Jones, 2008). According to Borleffs et al. (2003) clinical reasoning does not have the goal to make the correct diagnosis per se but to understand how to make the right decisions in the process of arriving at the diagnosis. In other words, clinical reasoning emphasizes process over content.

Health care in both human and veterinary medicine is becoming more and more complex and sophisticated (Titchen and Higgs, 1999). This is because of changing societal attitudes, enlightenment and greater availability of health information, coupled with legal and insurance concerns which have generally revolutionized health care environment (Fish and Higgs, 2008). Contemporary veterinary practitioner just like every other health profession needs to adopt an informed and critical stance in practice (Radostitset al., 2005) which demands utmost professionalism, openness, rationality and cost-

effectiveness as well as increasing accountability in decision making (Fish and Higgs, 2008). Every clinician must be able to articulate, externalize and rationalize the processes that led to his therapeutic actions (Nkanginieme, 1997; Dhaliwal, 2006). To achieve this, he must be systematic and methodical in his clinical diagnostic approach as well as being logical and analytical in every step down the entire process in order to arrive at the best judged action (Terry and Higgs, 1993).

Clinical reasoning method of problem solving has been suggested as a way of enthrone transparency, accountability, retraceability and best practice in the diagnostic process (Jones and Rivett, 2004). It involves an open demonstration of the individual steps of the therapeutic process which makes it easy for colleagues, students and clients/patients to follow and understand the individual treatment steps ((Chamberland and Hivon, 2005). Furthermore, the application of clinical reasoning enhances clinician's capability in diagnosis as well as facilitates learning in practice. It also engenders professional communication and provides opportunity for the clinician to reflect on the therapeutic process thereby enhancing attainment of the objective to provide the best and most efficient method for the patients (Jones and Rivett, 2004).

Clinical decision making models

There are several models of clinical reasoning, including pattern recognition, hypothetico-deductive or diagnostic reasoning, and narrative reasoning/patient centered methods (Terry and Higgs 1993; Jones and Rivett, 2004; Edwards and Jones, 2007).

Pattern recognition or illness script focuses on the organization and accessibility of knowledge stored in the clinician's memory (Higgs and Jones, 2000). Here, the clinician has learned or by experience

has observed the pattern of symptoms and physical finding that led to a certain diagnosis. Subsequently, when confronted with a patient who has virtually the same pattern of signs and symptoms, the clinician's experience enables him to recognize the condition quickly (Patel and Groen, 1986). Pattern recognition occurs automatically in nature and therefore thought to be intuitive because clinical judgment appears to take place without reasoning but can be explained within a cognitive understanding (Nkanginieme, 1997; Higgs and Jones, 2000). This model of diagnosis is faster, efficient and easy and is used by expert and experienced practitioners (Dhaliwal 2006). Unfortunately, not all similar patterns represent the same disease. There may be instances where a common diseases present with rare signs or a rare condition manifesting common signs. Moreover, the presence of some disease conditions cannot be established with complete confidence from history and examination (Carter et al., 2005). Therefore such complex and poorly defined practice problems are solved through analytical reasoning method referred to as hypothetico-deductive method (Elstein et al., 1978) as opposed to pure recognition of clinical patterns.

Hypothetico-deductive model of clinical reasoning is a complex and systematic problem focused method of inquiry which involves establishing a systematic list of possible hypotheses and testing of hypotheses (Elstein and Schwartz, 2002). The clinician generates a tentative hypothesis based on initial data from the patient. A prediction is then made as to what additional findings ought to be present if the hypothesis were true, and guided search for these findings is conducted through further data collections and interpretation. Further hypotheses

may be generated and evaluated until the various hypotheses are confirmed or negated (Elstein et al. 1978).

Hypothetico-deductive method of reasoning is used by clinicians at all levels of experience (i.e. both experts and novices) but experts appear to possess a superior organization of knowledge (Jones, 1992). The expert or advanced clinician uses a combination of the pattern recognition and hypothetico-deductive approaches. Experts often reach a diagnosis based on pure pattern recognition of clinical pattern with a typical problem (Jones 1992; Terry and Higgs 1993) however, the expert, like the more inexperienced practitioner (novice) appears to rely more on hypothetico-deductive clinical reasoning especially when faced with difficult and unfamiliar cases (Jones, 1992).

Critical thinking based on technical and practical interests represented in the two practitioner-centered models above is important but incomplete in meeting the challenging demands of contemporary practice environment (Trede and Higgs, 2008) hence the import of patient-centered approach to health care management. The patient-centered method of clinical reasoning is characterized by collaborative decision making involving client/patient, carers and the clinician (May et al., 2008). There is conscious effort to integrate the client/patient perspectives into the therapeutic plan. Client/patient participates actively in the therapeutic process; clinician explains the treatment plan and integrates the client/patient's wishes, expectation and concerns (Trede and Higgs, 2008). The doctor is constrained to relegate his professional authority and professional role and seek to share knowledge and power with the client/patient and to respect the input the

client/patient can make to clinical decision making and health care management (Trede and Higgs, 2008). This process of shared decision making demands defining the problem, presenting the options, identifying client/patients values and preferences as well as doctors knowledge, and clarifying understanding (Makoul and Clayman, 2006). Collaboration and communication are now considered as important as delivering care in that client/patient's narratives may provide insights that can be incorporated into diagnostic reasoning and management planning for better outcomes. Therefore good and effective communication will be a core clinical skill required for success in this model of clinical reasoning. Unlike in human medicine, there are few studies to validate the effectiveness of communication skills in veterinary medicine (Latham and Morris, 2007). However, it has been stated in a report by Shaw et al. (2004) that the beneficial effect of good communication on the health, satisfaction and compliance of clients/patients and the satisfaction of doctors should be equally applicable to veterinary medicine.

Of these CR models, pattern recognition fit quite naturally into our local practice environment and appears to be the method commonly used by local field practitioners because of weak laboratory diagnostic support base. However, in the tertiary veterinary service centers in Veterinary Teaching Hospitals (VTHs) and few cosmopolitan centers in the country with high profile clients and capacity to overcome prohibitive cost of diagnostic facilities and services, systematic and analytical method of clinical investigation is encouraged.

Clinical decision making skills

Professional competence, disaggregated into technical skills, experience and

medical knowledge are vital assets required for an effective making of diagnosis (Higgs and Titchen, 2000; Fink-Koller, 2007). Technical skills decomposed into clinical and diagnostic skills entails proficiency in obtaining clinical information and being able to relate it to various possible disease entities (Nkanginieme, 1997). This generally demands high skill levels in history taking, with good communication skills, emotional competence and good interpersonal skills as well as adequate diagnostic skills (examinations and interpretation of results). It will be incumbent on veterinary educators in the country to equip prospective veterinarians with this vital technical know-how needed for effective and efficient clinical practice. This will require extreme dedication and commitment from instructors with responsibility to impart these skills, coupled with availability of appropriately relevant instructional and diagnostic facilities, and broad exposure to practical skills training both under natural and simulated environment.

Knowledge and experience accumulated over years of training and practice are important for making appropriate clinical judgment (Rycroft-Malone et al., 2004). Knowledge has been described as being fundamental to reasoning and decision-making, and thus central to professional practice (Higgs and Titchen, 2000). Without appropriate medical knowledge, it is difficult to proceed logically in the clinical decision process. The current rate and speed of knowledge generation and dissemination in biomedical field including veterinary science is enormous (Radostitset al., 2005). This will definitely limit the capacity of veterinarians who are not conversant with computer usage and its applications to keep abreast with current developments in veterinary medicine, and to deliver quality and effective veterinary

practice.

CONCLUSION

Clinical reasoning is worthwhile because it enhances diagnostic performance of clinicians, enabling them to treat their patients with optimum safety and efficacy. Professional and clinical competencies have been highlighted as necessary ingredients that drive CR method of solving clinical problems. Integration of this concept into veterinary clinical practice and education in the country will not only improve the quality and effectiveness of our service delivery but also the overall perception of our profession. However, we must endeavor to create the kind of environment that fosters learning and practice of CR. Some of the identified constraints are paucity of specialists and role models, poor intrinsic motivation, very weak exposure to new knowledge and technological innovations in veterinary medicine and allied fields, and inadequate clinical settings for training e.g. scarcity of basic instructional facilities.

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