

EBVM In the Trenches

Implementing EBVM in General Practice

Why Can EBVM Do For Me?

1. Better information
 - Better patient care
 - Better client communication
 - Choosing products/services
2. Better information management
 - Less time and stress
3. Ethics
 - Patient care
 - Informed consent

Steps of EBVM

1. Ask useful questions
2. Find relevant evidence
3. Assess the value of the evidence
4. Draw a conclusion
5. Assign a level of confidence to your conclusion



Tallulah



- 13 year old, FS Labrador
- Mild progressive HL weakness x years

What about glucosamine?

Ask Useful Questions

P- patient, problem

I- intervention

C- comparator

O- Outcome

Ask Specific Questions

P- Patient, Problem

- 13 year old FS Labrador retriever
- systemically healthy
- moderately overweight
- mild gradually progressive HL weakness
- moderate bilateral hip osteoarthritis

Ask Specific Questions

I- Intervention

- Oral glucosamine, injectable
- +/- chondroitin, MSM, green-lipped muscle, fish oil, turmeric, Vitamin C, etc.....
- Pills, capsules, chewable treats, liquids
- Cosequin, Dasuquin, NaturVet, human products, etc.....

Ask Specific Questions

C- Comparator

- Doing nothing (education!!!)
- Weight loss
- Physical therapy, chiropractic, massage
- Acupuncture
- NSAIDs, analgesics
- Other supplements/nutraceuticals (fish oil, herbals, turmeric, MSM, etc.....)
- Total hip replacement

Ask Specific Questions

Q- Outcome

- Hunting
- Agility competition
- Activities of daily living
- Free of pain
- Free of lameness

Ask Specific Question

P- Tallulah

I- oral glucosamine+chondroitin

C- nothing or NSAID

Q- pain, lameness

Hierarchy of Evidence

personas
?????????

CE, clin
stateme

Systema
guidelir

RCTs, o
reports,
human



Hierarchy of Evidence

Systematic reviews, EBM guidelines, CATs

Synthetic
Literature

RCTs, other designs, case reports,
pre-clinical, human studies

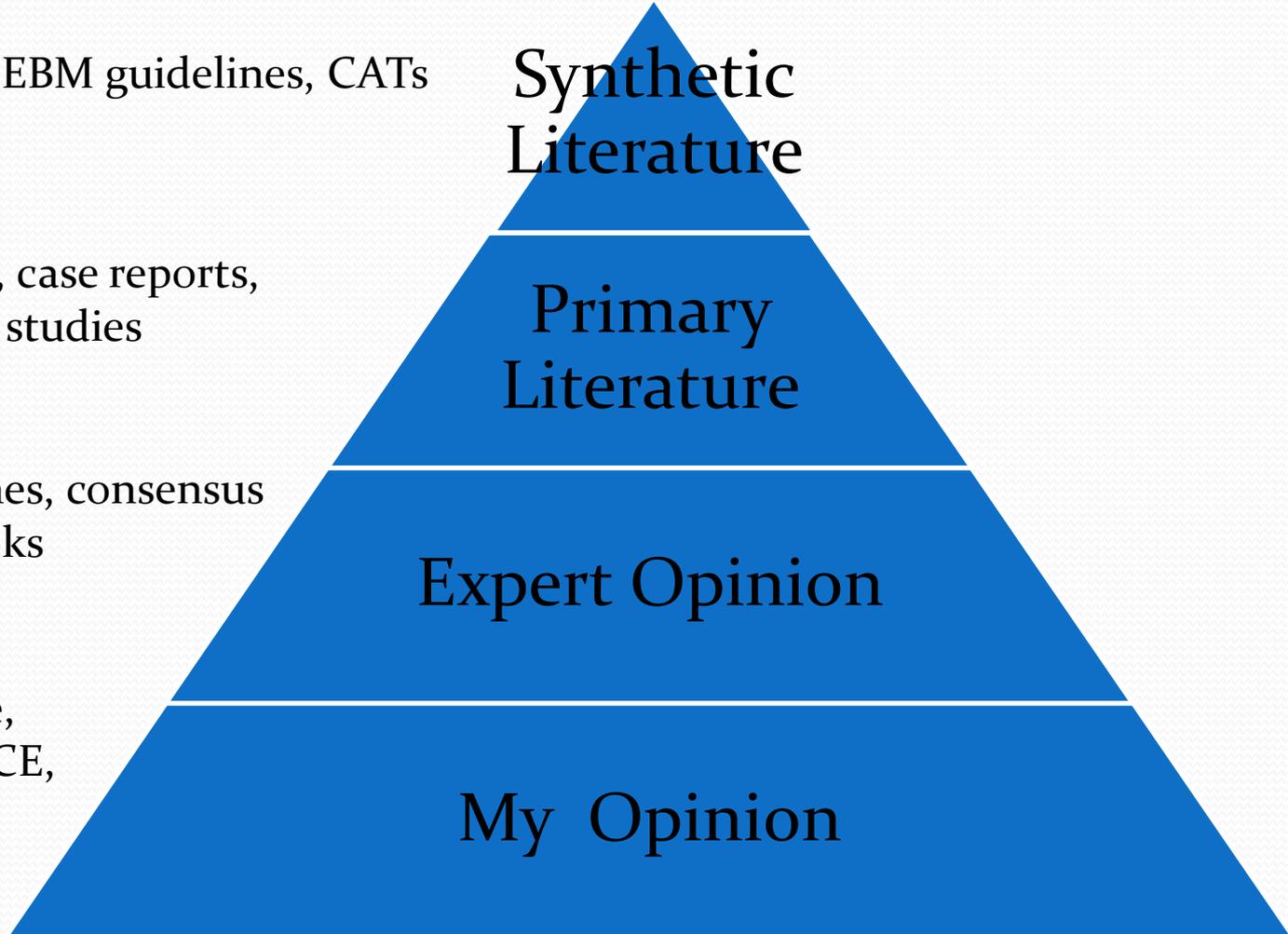
Primary
Literature

CE, clinical guidelines, consensus
statements, textbooks

Expert Opinion

personal experience,
colleagues, school, CE,
???????????

My Opinion



Better Information = Better Outcomes

There is a tendency toward support for the idea that outcomes improve for patients, personnel, or organizations if clinical practice in health care is evidence-based, that is, if evidence-based clinical practice guidelines are used.

Outcomes of evidence-based clinical practice guidelines: a systematic review.

Bahtsevani C, Udén G, Willman A. Int J Technol Assess Health Care. 2004 Fall;20(4):427-33.

Informed Consent

Information about the nature of the evidentiary record, or lack thereof, undergirding the physician's recommendation could be viewed as an essential part of the informed-consent process because such information might significantly influence the patient's decision to accept, reject, or negotiate around the physician's advice.

Kapp MB. Evidence-based medicine and informed consent. *Acad. Med.* 2002;77:1199-1200.



Synthetic Literature

Clinical Practice Guidelines-

- Must be evidence-based
 - Transparent
 - Explicit review of evidence quality and quantity
- Not GOBSAT
- Must be interpreted in context of individual patient

Synthetic Literature

Systematic Reviews-

- Literature search and critical appraisal done for you
- May include meta-analyses
- Only as good as evidence on which they are based
- Not 100% bias free

Synthetic Literature

How do you find it?

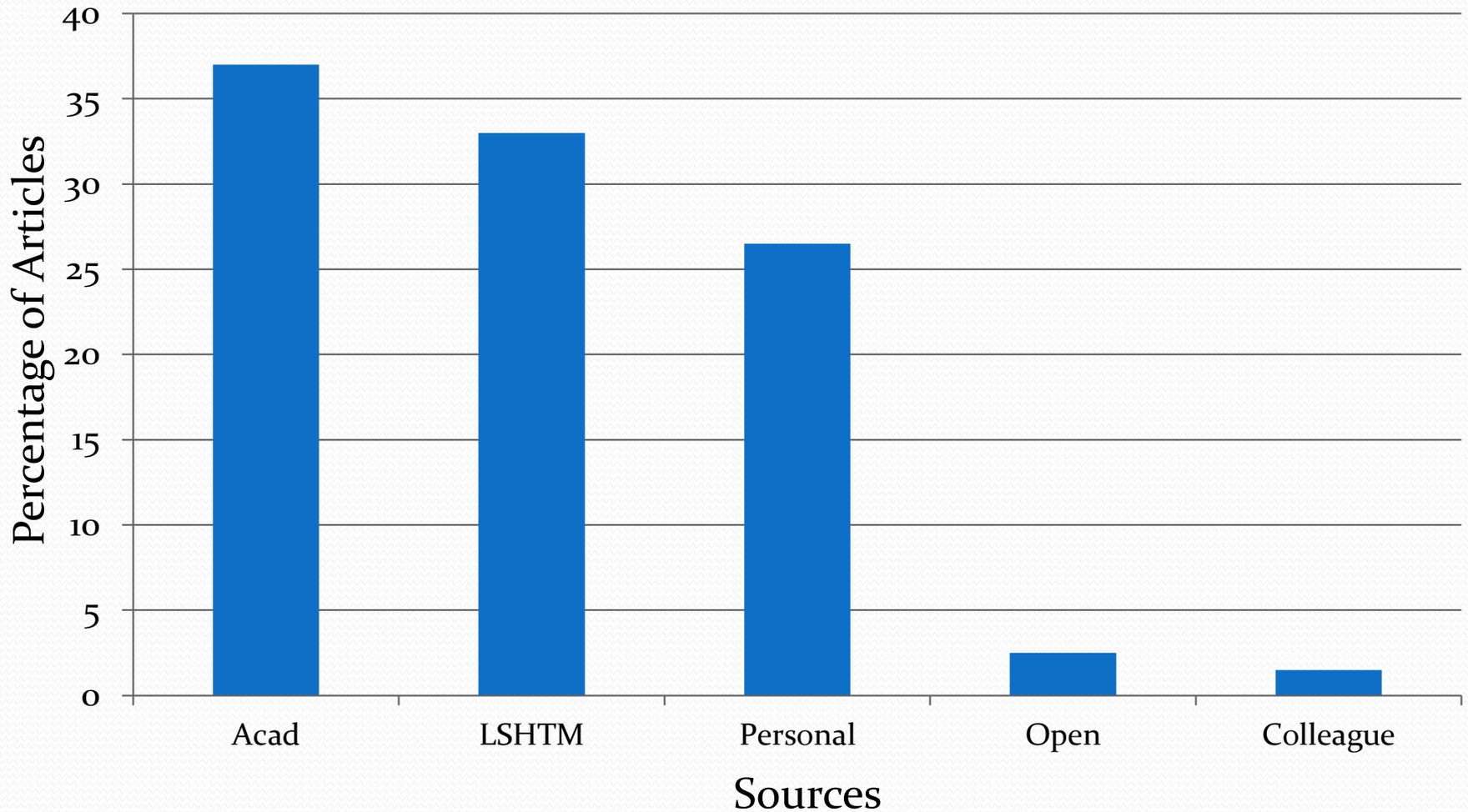
- VetSRev
- PubMed
- CAB Abstracts (Vetmed Resource)
- Agricola
- Veterinary college libraries
- Google Scholar

Synthetic Literature

How do you get it?

- Google
- Association memberships, personal subscriptions
- Veterinary colleges (local practitioners, alumni, fee-based)
- Local Libraries
- Fee-based: e.g. RCVS Library, VIN, VetAccess, etc...)
- Direct from journals: fee-based, DOAJ
- Colleagues: pool subscriptions, be nice to academics

Getting the Evidence



Ask Specific Question

P- Tallulah

I- oral glucosamine+chondroitin

C- nothing or NSAID

Q- pain, lameness

Synthetic Literature

Clinical Practice Guidelines-

None

Synthetic Literature

Systematic Reviews-

Vandeweerd JM, et al. **Systematic review of efficacy of nutraceuticals to alleviate clinical signs of osteoarthritis.** 2012

the global strength of evidence of efficacy was low...In addition, results were contradictory in the 2 studies conducted in dogs

Sanderson RO, et al. **Systematic review of the management of canine osteoarthritis.** 2009

Low quality & quantity of evidence, no overall recommendation

Aragon CL, et al. **Systematic review of clinical trials of treatments for osteoarthritis in dogs.** 2007

1 study included, good quality, no benefit

Synthetic Literature

Critically Appraised Topics-

- Best Bets for Vets
- Banfield
- Journals

Synthetic Literature

Critically Appraised Topics-

- Best Bets for Vets

Nutraceuticals versus carprofen in dogs with osteoarthritis

Carprofen is superior to glucosamine/chondroitin supplements in reducing the clinical signs of osteoarthritis (McCarthy et al. 2007). Glucosamine and chondroitin supplement efficacy cannot be commented on, as there was no placebo group or there was no comparison made with the placebo group in the studies.

Synthetic Literature

Critically Appraised Topics-

Banfield

Evaluation of glucosamine hydrochloride/ chondroitin sulfate nutraceuticals as a treatment to improve symptoms associated with canine and feline joint disease

Despite some evidence that a combination of glucosamine hydrochloride and chondroitin sulfate nutraceuticals improves symptoms associated with joint disease in dogs and cats, strong clinical evidence of efficacy is lacking, and these compounds are understudied.

Synthetic Literature

Critically Appraised Topics-

Journal of the American Veterinary Medical Association

McKenzie, BA. What is the Evidence? JAVMA 2010;237(12):1382-1383.

Two studies, mixed results, better quality study found no benefit, carprofen better

Appraise the Evidence

Synthetic Literature

- Not much clinical trial evidence
- Variable, generally low quality
- Mixed results

Synthetic Literature

Human Clinical Guidelines-

- 15 that mention glucosamine
- AAOS
 - We cannot recommend using glucosamine and chondroitin for patients with symptomatic osteoarthritis of the knee.
 - Strong evidence
 - quality of the supporting evidence is high
 - practitioners should follow a **Strong** recommendation unless a clear and compelling rationale for an alternative approach is present.
 - At this time, both glucosamine and chondroitin sulfate have been extensively studied. Despite the availability of the literature, there is essentially no evidence that minimum clinically important outcomes have been achieved compared to placebo, whether evaluated alone or in combination.

Synthetic Literature

Human Clinical Guidelines-

- ACR
 - We conditionally recommend that patients with OA should not use the following:
 - Chondroitin sulfate
 - Glucosamine
- OSARI
 - Glucosamine and chondroitin were both found to be “not appropriate” for all patients when used for disease modification and “uncertain” for all patients when used for symptom relief.

Synthetic Literature

Human Systematic Reviews-

- go on PubMed search
- Variable conclusions
 - Different methods
 - Studies included/excluded
 - Statistical methods

More Evidence

Primary Literature-

- Clinical trials- already evaluated in synthetic literature
- Pre-clinical research-
 - Plausibility
 - Safety

More Evidence

Expert Opinion-

- Mixed, no consensus
- Low reliability

My Opinion-

- Low reliability

Draw a Conclusion



Draw a Conclusion

- Recommend the intervention
- Recommend against the intervention
- Recommend something else instead/in addition
- Take no position
- Sell the intervention to the client?
- What do you tell the client?

Draw a Conclusion

Having thoroughly reviewed the evidence...

- Evidence is weak
- Very little risk
- Not much reason to expect benefit
- Minimal to moderate cost

My recommendation-

- Begin with interventions that have better evidence
 - NSAIDs
- Consider glucosamine if these not needed/tolerated or if you want to

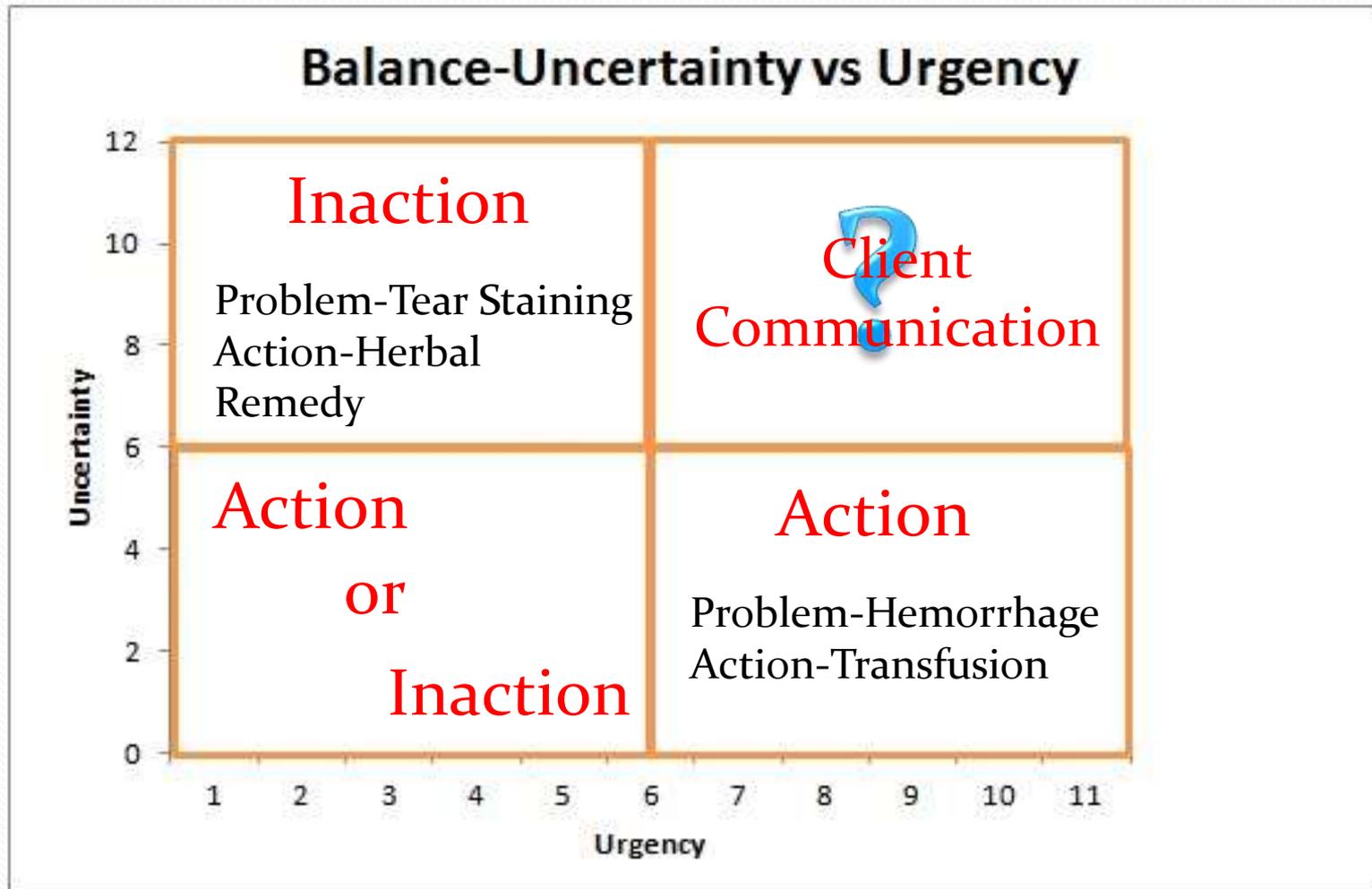
Uncertainty

“Veterinarians significantly underestimated the desire of clients to be told about uncertainties in treatment [and] significantly overestimated the loss of client confidence resulting from saying ‘I am not sure about this’

This study suggests that most clients want to be told about their veterinarian’s clinical uncertainties.”

Mellanby, R. J., J. Crisp, et al. (2007). "Perceptions of veterinarians and clients to expressions of clinical uncertainty."

Uncertainty



Role of the GP

- Be informed about the evidence
- Think critically about evidence and uncertainty
- Be explicit with clients & colleagues about evidence and uncertainty
- Share what you learn--Generate & synthesize evidence
- Tell the academics what you need
- Tell private industry what you need