

# AI and Medicine: Where are we now? Where are we heading? Should we embrace or be afraid?

## **Panelists:**

**Candice Chu DVM, PhD, DACVP**

**Eric Garcia**

**Adam Little, DVM, BS**

## **Moderator:**

**Helen Michael, DVM, PhD, DACVP, IDEXX Laboratories**

# Introductory slides for panelists

# ChatGPT in veterinary medicine: a practical guidance of generative artificial intelligence in clinics, education, and research

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**VetClinPathGPT**

By Pei-Hua Chu ⓘ +1

Your vet clin path AI tutor 🤖

★ 4.7

Education

5K+

Candice Chu, DVM, PhD, DACVP (clinical pathology)  
Assistant Professor, Texas A&M University

**What's unique  
about this  
photo?**

---





**What breed  
is this?**

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# What breed is this?

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1. Ibizan Hound
2. Italian Greyhound
3. Whippet
4. Greyhound





You



I am going to show you a picture of a dog. Please tell me what breed this dog is.



ChatGPT

The dog in the picture appears to be an Italian Greyhound. This breed is

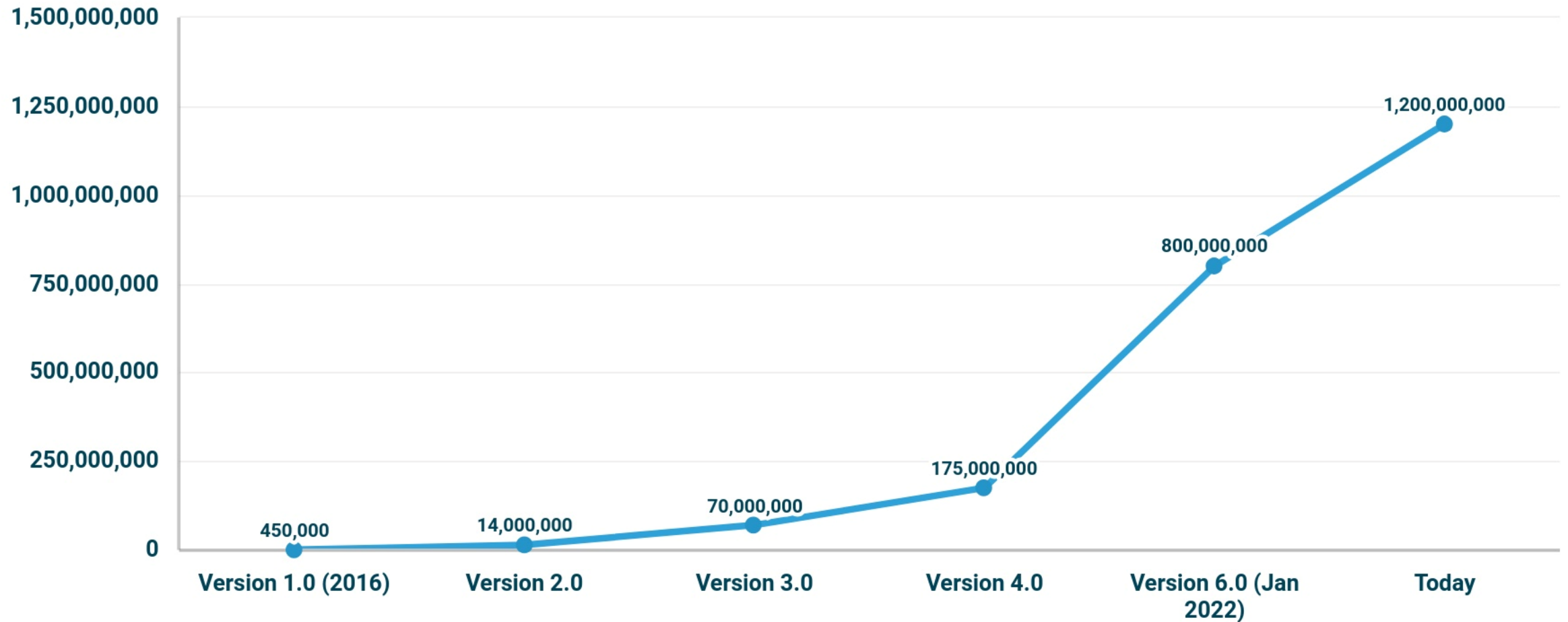






# Evolution of IDEXX Sedivue Neural Net

# of images in knowledge base



# Examples of AI functions – prompt engineering in client communication

## Awful Prompt (Version 1)

"Respond to this email from [Client Name] who is angry about the treatment of their pet."

- **Issues:**

- **Vague instructions:** The prompt doesn't specify the tone, desired outcome, or structure of the response.
- **No guidance on style:** The veterinarian might respond aggressively or too defensively.
- **Lacks context:** No mention of how the pet was treated or what went wrong, making it hard to craft a helpful response.
- **Result:** This could lead to a generic, unempathetic response that escalates the tension.

## Good Prompt (Version 2)

"Please draft a professional, empathetic, and conciliatory response to [Client Name]'s recent email expressing anger and dissatisfaction with the care their pet, [Pet Name], received during the [Procedure/Visit Type] on [Date]. Acknowledge their feelings, offer a brief explanation of what happened, and invite them to discuss further solutions, while maintaining a calm and understanding tone."

## Improvements Over Version 1:

- **Clear instructions:** Specifies professionalism, empathy, and a calm tone, reducing the risk of an inappropriate response.
- **Context and details:** References the client's pet, the type of procedure, and the date, giving the veterinarian concrete points to address.
- **Actionable step:** Encourages the veterinarian to invite a follow-up conversation to resolve issues.
- **Result:** The veterinarian is more likely to produce a considerate and constructive response that can defuse the client's anger.

### Great Prompt (Version 3):

"Craft a detailed, empathetic, and resolution-focused email response to [Client Name]'s complaint regarding their experience with [Pet Name]'s [Procedure/Visit Type] on [Date]. In your reply: **Acknowledge the Client's Emotions and Experience:** Show understanding of their frustration without dismissing it.

- **Explain the Situation Clearly:** Provide a brief, layperson-friendly explanation of what occurred and why, using non-technical language while avoiding blame.
- **Offer a Path Forward:** Suggest specific solutions, such as a follow-up consultation at no extra charge, a review of the treatment plan, or contact information for a practice manager who can address ongoing concerns.
- **Maintain Professional Yet Warm Tone:** Use polite, compassionate language that conveys respect and appreciation for their trust and patience.
- **Variable Content:** Incorporate personalizing details (if known) such as referring to [Pet Name] by name, mentioning their known favorite treats or activities, and expressing genuine care for their well-being.
- The goal is to reassure [Client Name], preserve the client-practice relationship, and encourage open communication going forward."

### Why This is Better Than Version 2:

- **Structured Guidance:** Breaks down the response into clear sections, ensuring the veterinarian addresses all necessary elements.
- **Human Touch:** Encourages personalization (e.g., mentioning the pet by name, acknowledging favorite treats) to strengthen trust.
- **Clarity of Purpose:** Explicitly frames the goal as preserving and improving the client relationship, not just smoothing over a single complaint.
- **Higher-Level Prompt Engineering:** The step-by-step instructions reduce ambiguity, making it easier to consistently produce a thoughtful, helpful response.



# Examples of AI functions – prompt engineering in text mining

DOI: 10.1002/vetr.3669 Q2 2.2

**Vet Record**

**SHORT COMMUNICATION**

## **Evaluating ChatGPT text mining of clinical records for companion animal obesity monitoring**

**Ivo S. Fins<sup>1</sup>  | Heather Davies<sup>1</sup>  | Sean Farrell<sup>2</sup> | Jose R. Torres<sup>3</sup> | Gina Pinchbeck<sup>1</sup> | Alan D. Radford<sup>1</sup> | Peter-John Noble<sup>1</sup>**

# Examples of AI functions – prompt engineering in text mining

## **Awful Prompt**

”Find body condition score (BCS) in the medical records for me.”

**Good Prompt** should include...

1. Tasks
2. Context
3. Example
4. Format
5. Role play
6. Tone

# Examples of AI functions – prompt engineering in text mining

## Awful Prompt

”Find body condition score (BCS) in the medical records for me.”

**Good Prompt** should include...

<b>1. Task</b>	Your task is to extract Body Condition Score (BCS) from the medial records
<b>2. Context</b>	Each row of the dataset is a different veterinary consultation. In the column 'Narrative' there is clinical text.
<b>3. Examples</b>	BCS can be presented on a 9-point scale, example BCS 6/9, or on a 5-point scale, example BCS 3.5/5.
<b>4. Format</b>	Your output should be presented in a short-text version ONLY, following the rules below:

# Examples of AI functions – cognitive strategy prompts

- Take a deep breath and think about your answers step-by-step.
- Do not respond if you are unsure of the answer.
- Ask yes/no questions when possible to limit responses.
- Reference sources when necessary.
- Ask follow-up questions if you do not understand a task.
- Please do an amazing job as my career is on the line.



## Bad prompt

How is diabetes managed in cats?

# Examples of AI functions – custom GPT





Knowledge: Anything



Custom GPT

Knowledge: Creator defined



Knowledge: Anything

Web Browsing  
DALL-E Image Generation  
Code Interpreter & Data Analysis



Custom GPT

Knowledge: Creator defined

Can be turned off



# Custom GPT for client education

## CatGPT - AI Innovation at Cornell

### Latest News

■ March 21, 2024



Cornell continues to explore artificial intelligence (AI), particularly generative AI, in ways that uphold the [university's core values](#) of purposeful discovery and free and open inquiry and expression. The team at the [Cornell Feline Health Center](#) recently launched CatGPT to help connect cat owners with credible, science-based information in a novel way. Users can ask the chatbot questions about their cats, get to the answers quickly and ask follow-up questions. CatGPT can even play games.

Read more about CatGPT in the [March 18, 2024 Cornell Chronicle article](#) by Holly Harrington. You can also [Explore AI at Cornell](#).

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# Custom GPT for client education

CatGPT - AI Innovation at Cornell

science-based information

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# CatGPT: Custom GPT for client education



CatGPT >



CatGPT >



What is your source?



Playful expert on feline health for cat owners from the Cornell Feline Health Center

By Cornell Feline Health Center ⓘ



I source my information from the [Cornell Feline Health Center](#). This center is dedicated to improving the health and well-being of cats through research, education, and outreach. They provide comprehensive resources on feline health topics, ensuring that cat owners have access to reliable and up-to-date information.





## VetClinPathGPT

By Pei-Hua Chu   +1

Your vet clin path AI tutor 🧑🏻‍⚕️

What causes  
anemia in dogs?

Explain the  
functions of lymph  
nodes in dogs.

Describe the  
stages of leukocyte  
development.

How does the  
liver affect  
blood parameters?

Message VetClinPathGPT



ChatGPT can make mistakes. Check important info.



# GPTs

Discover and create custom versions of ChatGPT that combine instructions, extra knowledge, and any combination of skills.

🔍 Search GPTs

No recently used GPTs

Top Picks

Writing

Productivity

Research & Analysis

Education

Lifestyle

Programming

## Featured

Curated top picks from this week



### AI PDF Drive: Chat, Create, Organize

The ultimate document assistant. Upload and chat with all your files, create polished PDFs (presentations, reports, resumes, letters) right from the GPT. \*Use o1 models with files with a Pro account!\* Supports PDFs, CSVs, TXT, Markdown, and Excel with a free AI Drive account.

By [myaidrive.com](https://myaidrive.com)



### Scholar GPT

Enhance research with 200M+ resources and built-in critical reading skills. Access Google Scholar, PubMed, JSTOR, Arxiv, and more, effortlessly.

By [awesomegpts.ai](https://awesomegpts.ai)



### Tutor Me

Your personal AI tutor by Khan Academy! I'm Khanmigo Lite - here to help you with math, science, and humanities questions. I won't do your work for you, but I will help you learn how to solve them on your own. Can you tell me the problem or exercise you'd like to solve?

By [khanacademy.org](https://khanacademy.org)

# Example of AI – Guess the breed game

# Examples of AI functions (in case live isn't working)

- Example of using GPT to roll-play with an angry client

# Medical Record Keeping

abridge

“Envisioning a world where clinicians get home on time every day, with all of their charts closed by the end of their shift.”

**78%**

average reduction in  
documentation time

according to Ambience

**2 hours**

Saves doctors 2 hours per day  
on average

according to abridge

# Use Client-Friendly Language to Improve Perception of Value



## Rephrase technical terms into simple language during your examination.

Instead of **“palpation of the abdomen,”** you might say, **“I’m feeling for any unusual areas in the stomach region.”**

## Narrate the Exam Flow as You Go

For example, saying, **“Next, I’m going to check Bella’s heart rate and breathing to ensure everything sounds clear,”** gives the AI context clues for each SOAP section while reassuring the client.

## Emphasize Findings Clearly

When dictating findings, such as **“normal,” “mild,” or “severe,”** emphasize them so the AI correctly interprets the assessment, and the client can follow the exam’s progress.

# Use Client-Friendly Language to Improve Perception of Value



## Verbally Summarize Key Points

Summarize findings after each section (e.g., examination, diagnostic tests). This structured summary can lead to more accurate SOAP notes and keeps clients well-informed.



## Engage the Client with Open Statements

By saying things like, “**Let’s see what Bella’s ears look like,**” you engage the client while giving the AI clarity on which exam portion you’re addressing, enhancing SOAP note structure.



## Use Consistent Phrasing for Exam Findings

The AI learns better with repeated, structured phrasing.



# Schedule Building Input

ChatGPT 4o ▾

↑ Share



Eric a technician can only work Monday through Friday from 8 am to 1 pm and Saturday he can't work.

Sally a technician can only work Tuesday's at 2 pm until 5 pm.

Mary a technician can only work Friday's from 8 to 5 pm.

Caitlin a technician can only work Wednesday's and Thursday's from 12 to 5 pm.

Can you build a schedule so we have a technician working every day from 8 to 5 pm. At least 1 technician. If it can't be done tell me where the gaps are.

# Schedule Building Output



Let's analyze the availability and try to fill every day from 8 AM to 5 PM with at least one technician:

## Availability Recap:

- **Eric:** Monday to Friday, 8 AM - 1 PM (Not available Saturdays).
- **Sally:** Tuesday, 2 PM - 5 PM.
- **Mary:** Friday, 8 AM - 5 PM.
- **Caitlin:** Wednesday and Thursday, 12 PM - 5 PM.

## Day-by-Day Schedule:

### Monday:

- **Eric:** 8 AM - 1 PM  
Gap: 1 PM - 5 PM (No one available).

### Tuesday:

- **Eric:** 8 AM - 1 PM
- **Sally:** 2 PM - 5 PM  
Gap: 1 PM - 2 PM (No one available).

### Wednesday:

- **Eric:** 8 AM - 1 PM
- **Caitlin:** 12 PM - 5 PM  
Overlap: 12 PM - 1 PM (both work).  
Coverage complete: 8 AM - 5 PM.

### Thursday:

- **Eric:** 8 AM - 1 PM
- **Caitlin:** 12 PM - 5 PM  
Overlap: 12 PM - 1 PM (both work).  
Coverage complete: 8 AM - 5 PM.

### Friday:

- **Eric:** 8 AM - 1 PM
- **Mary:** 8 AM - 5 PM  
Overlap: 8 AM - 1 PM (both work).  
Coverage complete: 8 AM - 5 PM.

### Saturday:

- No one available. Full gap: 8 AM - 5 PM.

## Summary of Gaps:

- **Monday:** 1 PM - 5 PM.
- **Tuesday:** 1 PM - 2 PM.
- **Saturday:** 8 AM - 5 PM (no one available).

Would you like suggestions on adjusting the schedule or finding additional coverage?

# Benefits of Keeping ChatGPT Threads Organized



## Continuity

Maintains context from previous messages.



## Efficiency

Saves time by avoiding repetition.



## Personalization

Adapts responses to your style over time.



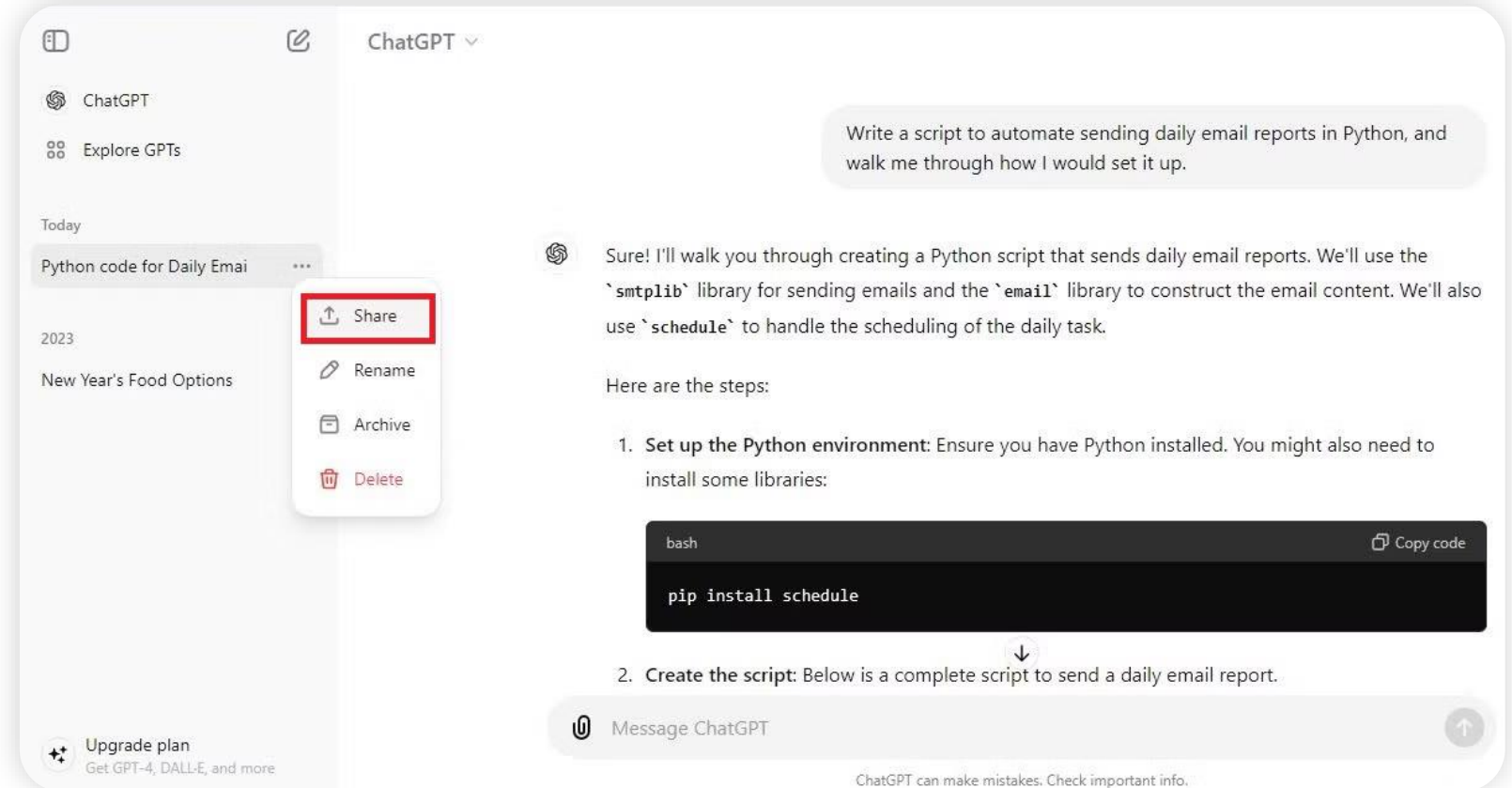
## Organization

Acts as a running log for ideas and tasks.



## Deep Dives

Supports thorough exploration of topics.



# IDEXX DecisionIQ's MISSION

The screenshot displays the IDEXX DecisionIQ web application interface. At the top, the patient profile for Bella Gates (ID 8880-1) is shown, including species (Canine), breed (Akbash), sex (Female Spayed), and age (12 y). A navigation bar includes tabs for History, Communications, and Order New Diagnostics. Below this, a timeline shows dates from 2015 to 2028, with May 9 selected. The main content area is divided into two sections: Serology and Clinical Decision Support.

**Serology**

Test	Result
Heartworm Antigen	Negative
Ehrlichia canis / ewingii	Negative
Lyme (Borrelia burgdorferi)	Positive
Anaplasma phagocytophilum / platys	Negative

**Clinical Decision Support**

**4Dx Lyme C6 antibody positive**

Does this dog have one or more **clinical signs** consistent with Lyme disease?

☒ Yes  
☐ No

A positive Lyme C6 antibody result indicates infection and is not a result of Lyme vaccination.

**NEXT STEP CONSIDERATIONS**

A Lyme Quant C6 Antibody Test is recommended to evaluate for active infection and to establish a baseline to assess response to treatment if indicated.

- **Lyme Quant C6 Antibody Test**

Lyme positive dogs have a 43% increased risk of developing chronic kidney disease. A urinalysis (with UPC where indicated) is recommended to evaluate for proteinuria.

- **Urinalysis (with UPC where indicated)**

A chemistry panel with SDMA is recommended to evaluate for the development of protein-losing kidney disease. A CBC is recommended as part of a minimum database.

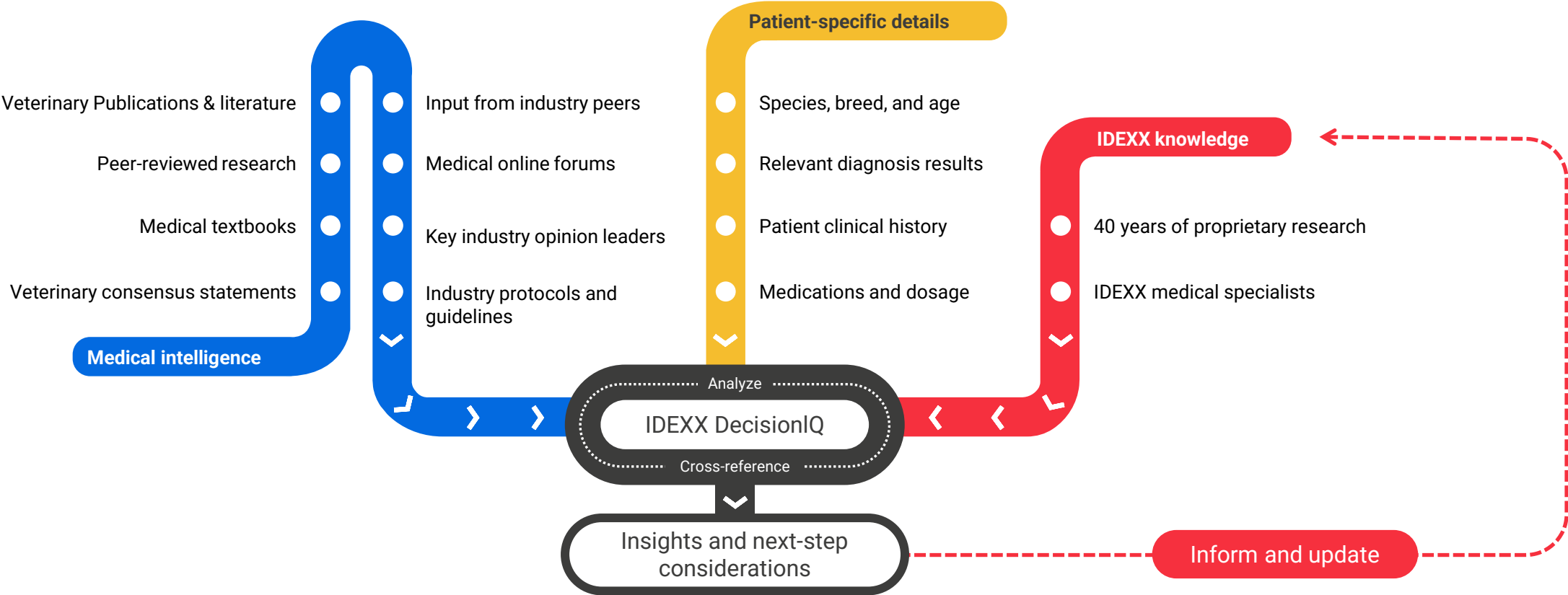
- **Chemistry panel with SDMA**
- **CBC**

[LEARN MORE](#)

⚠ Concurrent conditions may exist. The absence of an alert does not rule out the condition. Always consider all possible differentials.

**IDEXX DecisionIQ quickly summarizes pertinent information** to offer clear interpretive assistance and patient-specific guidance **to help give vets confidence and more time to focus on their patients.**

# IDEXX DecisionIQ™ synthesizes the latest industry research & publications to provide up-to-date guidance



# CallRail

**CallRail** Home Activity Reports

**Timeline** > Romero, Henry

**Henry Romero**  
532-555-9876  
Tulsa, OK

Total transactions: 1  
First Call: May 11, 2023 2:15pm  
Initial Source: **Billboard**

Call Tracking helps you know where your leads are coming from to optimize your spend

May 11, 2023 2:15 PM Inbound Recorded Call

Mostly positive

Agent: 66%  
Customer: 44%

Record and transcribe all your calls for easier review with **Conversation Intelligence®**

Duration: 16m  
Agent: Alexia  
Qualified: Yes  
Highlights: Landlord Attic Squirrels Quote  
Value: \$250  
Notes: Call ahead you're co dogs in the

See AI-generated call summaries and sentiments to review calls in a flash

**Summary** Transcript

Henry called to ask for help with pest control because his tenants have reported hearing squirrels in the attic. Alexia asked for Henry's address and how long the problem has been going on. Alexia will contact a field technician to go to the home this week.

Poor Summary ★★★★★ Great Summary



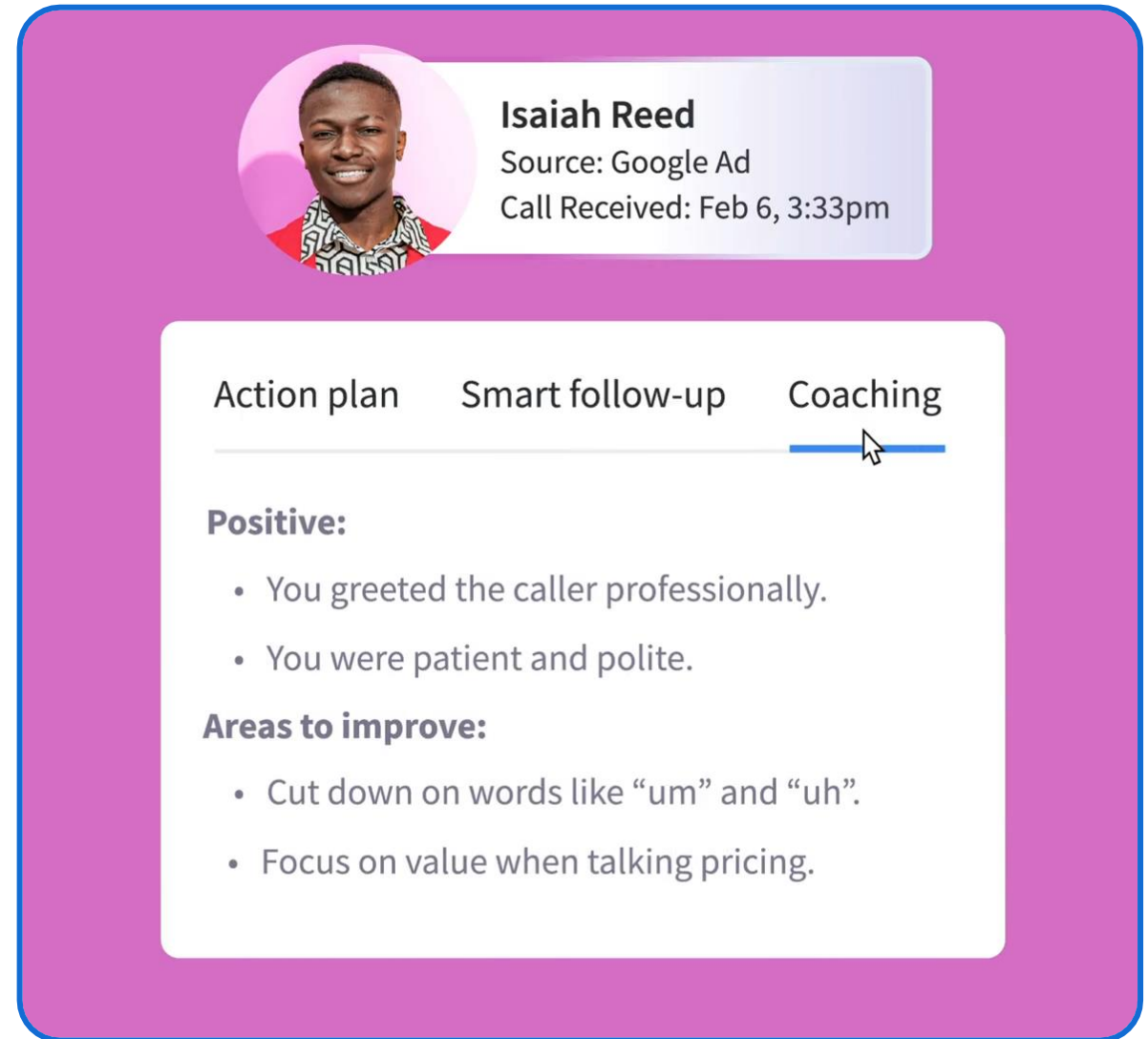
## Put your time-to-insight into overdrive

With brand-new Premium Conversation Intelligence™, phone calls are not only transcribed – they’re summarized in a few short sentences. Understand 20-minute calls at a glance without listening to recordings or reading a long transcript. And with call sentiment analysis, the calls that demand your attention are highlighted so you can jump in right away.



## Real-time coaching for better conversations.

Call coaching delivers feedback on what went well and what to improve after every conversation. Elevate team performance and customer experiences automatically without reviewing every sales call.



The screenshot shows a coaching interface for a call with Isaiah Reed. At the top, there is a circular profile picture of Isaiah, a young Black man with short hair, wearing a red and white patterned shirt. To his right, a light blue box contains his name 'Isaiah Reed', the source 'Source: Google Ad', and the time 'Call Received: Feb 6, 3:33pm'. Below this, a white box with a blue border contains three tabs: 'Action plan', 'Smart follow-up', and 'Coaching'. The 'Coaching' tab is selected, indicated by a blue underline and a mouse cursor. Under the 'Coaching' tab, there are two sections: 'Positive:' and 'Areas to improve:'. The 'Positive:' section lists two bullet points: 'You greeted the caller professionally.' and 'You were patient and polite.' The 'Areas to improve:' section lists two bullet points: 'Cut down on words like “um” and “uh”.' and 'Focus on value when talking pricing.'

**Isaiah Reed**  
Source: Google Ad  
Call Received: Feb 6, 3:33pm

Action plan   Smart follow-up   **Coaching**

**Positive:**

- You greeted the caller professionally.
- You were patient and polite.

**Areas to improve:**

- Cut down on words like “um” and “uh”.
- Focus on value when talking pricing.