

# Relevance: Consideration for evolving and adapting beef veterinary practice models

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## Abstract

The beef industry as well as beef cattle veterinary practice are complex, adaptive systems that are highly interconnected. Challenges to future sustainability, including recruitment and retention of new associates and continued relevancy to the beef industry, have been raised. Changes are being implemented at a number of levels. Adaptation by veterinary practices themselves by changing practice models, or structure, can provide significant leverage to address these challenges. Deeper understanding of the system may be useful as practitioners adapt and models evolve. The objective of this presentation is to explore practice model adaptation as a leverage point for increasing relevance in beef cattle veterinary practice.

**Key Words:** models, relevance, systems, business, beef veterinary practice models

## Introduction

Beef cattle veterinary medicine enjoys an esteemed position of high respect in the beef industry that has endured for generations. This reverence spans from local to national and international geographies and from individual producers to the public, including national and international organizations. Beef veterinary practitioners have been and continue to be valuable resources to the beef industry. Leadership in the beef industry, a highly

22 complex, adaptive system, is a challenging, rewarding position for veterinarians involved in beef cattle veterinary  
23 practice.<sup>1</sup> Services offered by veterinary practices to the beef industry have been somewhat or mostly based on  
24 traditional mental models of both veterinarians and beef producers. However, there is evidence to suggest that  
25 significant challenges are evolving to traditional practice offerings as well as veterinary businesses.<sup>2-6</sup> Adapting to  
26 continual change as the beef industry and the beef veterinary profession evolve in response to numerous forces  
27 makes continual relevance across the entire spectrum a formidable challenge to practitioners. Compounding the  
28 challenge is the position of the veterinary profession amidst a number of complex systems, often making explanation  
29 of outcomes very difficult. Evolving societal and cultural norms can challenge practices and the ability to deliver  
30 veterinary services, especially as generational change occurs within the beef cattle component of the veterinary  
31 profession.

32 Structure, in beef veterinary practice models, is a big influencer of performance, and success outcomes. Discussion  
33 about beef veterinary practice models is a very broad topic largely because of its highly complex, adaptive system  
34 behavior. Impacting information very often comes from real world experience, but also from the business world,  
35 pertinent research, and occasionally from academia. Disciplines that might contribute to our deeper understanding of  
36 this structure are wide ranging. Also, adaptation as practices evolve often takes considerable time so delays in the  
37 feedback system must be dealt with, making evaluation at times confounded and difficult.

38 Challenges to beef cattle veterinary practices have been described. A major area of concern is the recruitment and  
39 retention of newly trained veterinarians committed to beef veterinary practice. This issue transcends years for each  
40 new graduate veterinarian. Obviously, this challenge impacts a number of systems that play roles in producing  
41 veterinary practitioners for the future. Beef cattle veterinary practice models have far reaching impact on these  
42 outcomes. Delays in feedback complicate measurement of success of adaptations and must be dealt with because of  
43 time involved.

44 As a complex, adaptive system, the beef cattle industry is undergoing immense and ongoing change. At local levels,  
45 these changes may or may not be evident. Relevance of beef cattle veterinary medicine in local levels with  
46 individual client producers as well as at industry levels is critical. It has been stated that income to beef cattle  
47 veterinarians, in general, needs to improve. While some producers may be compelled to comply with requests, many  
48 producers use their value proposition to evaluate use of veterinary services. Continuing focus on relevance of beef

49 cattle veterinary medicine is a critical component for success. Examination of service offerings to adapt and evolve,  
50 both as a short- and long-term process, is important. Expanding skill sets to match is necessary. Systemic changes  
51 that include ownership, labor, technology, including genomics, and basic changes in management driven by newer  
52 information are changing the landscape.

53 Beef veterinary practice models, as they adapt and evolve to address the challenges, necessarily will focus on  
54 aspects of sustainability required for success of the business.

55 The objective of this presentation is to explore practice model adaptation as a leverage point for increasing relevance  
56 in beef cattle veterinary practice.

57

## 58 Background

59 A system can be defined as a set of interconnected elements that are organized in such a way to achieve a purpose.<sup>7</sup>

60 <sup>8</sup>Systems associated with the beef industry and veterinary medicine are many and they are intertwined, including  
61 economic, regulatory, business, social, cultural, environmental, biological and others.<sup>7</sup> Additionally, these systems  
62 are highly complex, largely because of their strong linkages to many systems, and also adaptive, as these systems  
63 and forces that comprise them are very much in states of continual change. These complexities and adaptations make  
64 understanding and adjustments difficult. Academically, systems thinking is the discipline associated with analyzing  
65 these changes.<sup>7</sup> However, it can be argued that recognition of these systems as impactful forces, or simply thinking  
66 in systems, is achieved regularly. Systems thinking and thinking in systems can result in increased understanding of  
67 complex, adaptive systems that offers potential for problem solving related to the system or systems in question.

68 Mental models are deeply held beliefs, assumptions, generalizations and images of how we view the world and how  
69 they lead to our understandings and resulting actions.<sup>9</sup> They are drivers, often not realized, that form the basis of  
70 many of our decisions and actions. Hidden mental models can be pervasive in organizations and business. Inward  
71 focus to better understand can be a helpful exercise. New, innovative ideas can suffer and may not be implemented  
72 because of long held mental model beliefs.

73

74 There are serious challenges to beef cattle veterinary practice that are impacting sustainability of portions of the  
75 practice network or system. Information and data providing direction for adapting change can be difficult to find or  
76 may not exist in conventional form. Assimilation of information and its implementation can be challenging to best  
77 address the issues presented and may represent the primary barrier to progress related to these topics.

78 An excellent presentation at the 2023 AABP Recent Graduate Conference described “how to develop” a successful  
79 business model.<sup>10</sup> Readers are referred to this publication for outstanding specific information. The present paper is  
80 focused on perspective involving need for adaptation and evolution of models.

81 Recruitment and retention of new graduates in beef cattle practice has been identified as an area of concern.  
82 Gibbons, et al, conducted focus group interviews of 23 recent graduates to engage in dialogue about why they have  
83 chosen to remain in bovine practice, why they might choose to leave bovine practice, and challenges they face in  
84 practice.<sup>11, 12</sup> This was reported by Cummings at the 2024 AABP Recent Graduates Conference.<sup>11</sup> Summarizing,  
85 recent graduates were highly connected to and respective of their clients, they experienced high levels of  
86 professional fulfillment and overall enjoyment. Reasons to leave practice included health preservation, work-life  
87 balance, especially emergency service obligations, a sense of isolation, need for mentorship, and gender inequities.

88 The CAST issue paper, focused on recruitment and retention of food animal veterinarians, does a thorough job of  
89 dialoguing about reasons for problems associated with recruitment and retention for most types of food animal  
90 practice.<sup>13</sup> Challenges are raised as multifaceted with idiosyncrasies of rural life, jobs for spouses, and childcare  
91 raised as concerns. Student recruitment from geographical areas to be served is raised as a positive possibility.  
92 Practice attributes that increase financial return and promote social qualities are discussed as positives for new  
93 graduate recruitment and retention. The published causal loop diagram communicates the issues very well.

94 A presentation by Bartholomew at the 2023 AABP Annual Conference reported on a survey where veterinarians  
95 leaving large animal practice stated the top 3 reasons were salary/compensation, emergency duty and practice  
96 atmosphere/culture.<sup>14</sup> The report went on to state that salary/compensation needs to be addressed and that practice  
97 atmosphere/culture can be changed. Consideration for practice model adaptation is strongly implied in this report.

98 A published survey of 54 rural mixed animal practices confirmed a wide range in size and growth rate and that  
99 growth rate was influenced by common business management practices.<sup>15</sup> These included main species interest,

100 frequency for adjusting prices, use of a marketing plan, service fee structure, and sending a client newsletter.

101 Practice business model influenced outcomes in these veterinary businesses.

102 Villarroel, et al published two excellent papers with survey information as to why veterinarians enter and leave rural  
103 veterinary practice in the United States.<sup>16, 17</sup> Primary reasons for developing interest in entering rural veterinary  
104 practice included having relatives with a farm background, having a rural practitioner as a mentor, and exposure  
105 during veterinary school. Reasons for leaving focused most highly on emergency duty, time off, salary, practice  
106 atmosphere, and family concerns. The authors state that a leverage point is the attention to needs of students and  
107 new graduates that practices can provide.

108 Published in the 2022 Veterinary Clinics of North America Volume 38, two “Admiring the Iceberg” exercises with  
109 17 members of the Veterinary Advancement of Systems Thinking (VAST) were held with the aim of beginning  
110 discussion of application and problem solving relative to change in beef cattle veterinary practice.<sup>18</sup> Readers are  
111 encouraged to refer to the publication for more information. Much of the discussion reflected mental models that  
112 related to traditional, private beef cattle veterinary practice. Perspectives provided included issues such as inability  
113 of new associates to advance professionally and personal goals, practices are less able to attract high-quality  
114 associates due to practice structure issues such as service models, hours worked, and financial sustainability. Others  
115 include traditional fee structures focused on treating sick animals (costs), and lack of successful onboarding efforts.  
116 Frequently, ideas related to practice structure or model were expressed as an area to address challenging practice  
117 issues.

118 Beef veterinary practices are located in a wide range of settings throughout North America. Averages provided by  
119 datasets often have limited application. New producers, aging producers, large, medium and small operations, levels  
120 of expertise, extra labor requirements, widely varying levels of client knowledge and expertise are examples of  
121 diversity that practices encounter. Reasons producers are in the beef cattle business also vary significantly, and that  
122 drives relationships with veterinarians and the services utilized, which also vary widely.

123

124 The beef industry is a highly complex system and likely increasingly so. Characteristics of the industry have  
125 changed dramatically over time, including marketing and carcass traits, segmentation of the industry, trends toward

126 larger herds, and others. It can be difficult to discern changes at local levels, if nationally tracked data even reflects  
127 certain locales. New producers beginning their own beef business, new producers entering via generational  
128 transition, educational level of producers, changing herd sizes, and differing reasons for being in the beef business.  
129 Innovations including a number of aspects focused on genomics are dramatically changing the beef production  
130 landscape. A well-known example is the dramatic reduction in dystocia rates, including Caesarean sections, resulting  
131 from application of expected progeny difference (EPDs) for birth weights combined with improved heifer  
132 development in the industry.

133 Numbers of beef operations nationally have trended downward in recent years with an estimated 19% decrease over  
134 a 20-year period of 1997-2017.<sup>19, 20</sup> Forces in play at local levels may or may not be supportive of this trend so  
135 individual assessments become of value. For example, local consolidation of beef operations might be moving  
136 toward increased herd size, which may be markedly changing needs and opportunities for beef veterinarians. In  
137 another location, for example, new producers entering the beef business may be impacting local practice service  
138 needs through increased numbers of beef animals. These give rise to opportunities and challenges related to  
139 relevancy of beef veterinary medicine at some levels. Dialogue, including educational needs, about the range of  
140 services provided by beef veterinarians is needed. Skill sets required are not static in today's beef industry.

141 It has been stated that fee schedules in beef veterinary medicine need to be increased to accommodate increased  
142 salaries and compensation of new and recent graduates.<sup>13</sup> In most locales, this brings with it the need for justification  
143 of the value proposition, and eventually relevancy, of services provided to profit minded clientele. Traditional fee  
144 structures that are based on fixing or treating sick animals (a cost) rather than establishment of prevention processes  
145 (value) lack alignment. NAHMS has reported differences in use of veterinary services geographically in the United  
146 States.<sup>21</sup> The mean for use of consultative services over a 1-year period was only 52.8%.<sup>21</sup> Local circumstances are  
147 influenced by local factors, likely strongly influenced by beef veterinary practitioners and the practice models in  
148 place.

149 Sustainability is an estimate of the persistence of a system over time.<sup>22</sup> Evolving and adapting practice models must  
150 necessarily focus on attributes of sustainability, also using principles of stewardship to address long term viability to  
151 enable future generations to benefit from the progress of previous generations.<sup>23</sup>

## 152 Discussion

153 Perspective gained from systems thinking “Admiring the Iceberg” and similar efforts, some of which are referred to  
154 above, signal beef veterinary practices that practice models and structure have significant leverage to address issues  
155 of relevance to the profession. Relevance in the recruitment and retention of new associates, including its  
156 complexities, is obviously critical for practice sustainability. Relevance to the highly complex, adaptive beef system  
157 is also critical for sustainability. Sustainability of veterinary practices may in many ways also be analogous to  
158 generational transfer of farm and ranch businesses.

159 Perspectives have been raised during the “Admiring the Iceberg” sessions. Examination of their value and  
160 application to practice structure/practice model may become useful exercises as practices plan and set goals for  
161 sustainable successful futures. Several descriptors of systems related attributes have strong implications toward  
162 using adaptations of developing practice models that possess leverage to address issues of relevance going forward.  
163 Framework for how categories of attributes might be approached may be helpful.

164 Match Quality relates to “fit”, or evaluation of the collection of characteristics that contribute to achievement of  
165 filling particular sets of needs.<sup>24-26</sup> A best match in filling a veterinary practice job opening might be an individual  
166 who possesses characteristics that will lead to successful outcomes for the practice and the individual. These are  
167 professional and personal characteristics. As an example, for retention, persons best fitting requirements of the  
168 practice model are more likely to become permanent members. A recently published study of first destination  
169 outcomes of recent graduates by Auburn University stated that a graduate’s community of origin (rural, suburban,  
170 urban), preferred community, and gender have the strongest relationships with choice of employment setting  
171 (location and type).<sup>27</sup> While directed to influence admission practices, findings such as these have implications for  
172 match quality of potential new associates. Practice models that do not fit requirements of new associates are  
173 unlikely to successfully recruit or retain long term associates. Match quality extends to essentially the entire scope of  
174 veterinary practice.

175 Practice readiness is much more encompassing than possessing technical and nontechnical skills and other learnings  
176 from veterinary school. Study of practice readiness examines attributes that include personal communications and  
177 relationships, ability to work in team settings, physical readiness, ability to work in isolated settings, appreciation for

178 the practice setting, and multiple other attributes that lead to success. Levels of accomplishment of practice  
179 readiness by veterinary students and recognition by hiring practices of this package of attributes is important.<sup>12</sup> A  
180 2023 AABP presentation focused on physical and mental preparedness for large animal practice, raising grip  
181 strength as an indicator of accuracy in bovine rectal palpation diagnosis in veterinary students as well as effects of  
182 stress and stress management.<sup>28</sup> Another described various tactics for success in the transition from veterinary  
183 student to veterinarian.<sup>29</sup>

184 Pursuit of personal mastery can be a powerful motivator in veterinary careers. Commitment to personal mastery sets  
185 organizations and individuals on a course of continuous improvement, including continuous examination of  
186 priorities and direction.<sup>9</sup> Mastery encourages creativity and learning how to generate and maintain creative tension.  
187 Mastery includes not only the entire “veterinary” skill set learned during the veterinary school years, but also things  
188 such as interpersonal skills, financial prowess, and learning from life’s lessons.

189 Onboarding, the process of bringing in new veterinary associates has received little formal attention in many rural,  
190 large animal, beef veterinary practices. A result has been greatly varying levels of success. It is likely that practices  
191 who have prioritized onboarding enjoy more success than others. Two presentations at the AABP 2023 Annual  
192 Conference are notable, with one outlining how an onboarding plan has been successfully implemented.<sup>30</sup> The other  
193 advocates for written mentorship plans for new associates.<sup>13</sup> The discussion focused on use of an onboarding plan to  
194 integrate a new associate with a goal of long-term retention, also emphasizing customization by individual practices.  
195 Other professions have placed higher priority on onboarding of new associates. Individualized onboarding planning  
196 may be an option to improve retention.

197 It may be most pertinent to consider individual practices as systems unto themselves. Each possesses mental models  
198 of participants and serves a unique clientele as they attempt to address needs of complex, adaptive systems. Planned  
199 ability to achieve resilience is key to development of a sustainable model.

## 200 Conclusion

201 The extremely complex nature of becoming consistently relevant to needs of clientele and new and recent graduates  
202 by beef veterinary practices while maintaining a sustainable practice model that implies growth, financial success,



203 achievement of personal and professional goals is a highly laudable task. Practice models are as varied as are the  
204 circumstances contributing to their existence. However, they offer excellent promise to leverage changes that will  
205 meet challenges beef cattle veterinary practices face today and in the future.

206 Hopefully the information presented will contribute to increasing success of beef veterinary practices as they address  
207 current and future challenges.

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