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Summary of breakout sessions

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Introduction

The 2009 BRD Symposium included three breakout sessions, which allowed participants to meet in subgroups to discuss challenges facing cattle producers, veterinarians and scientists who work in bovine health. The objective of these sessions was to spur the development of new approaches to complex issues. Conference participants were asked to freely join one of three groups at each breakout session. Each group then addressed specific facets of a general theme assigned to the session. Since the discussions received a rich supply of inputs from participants, they did not, nor were they required to 'stay on theme'. After an hour of discussion, the groups came back together and the ideas and questions generated by the groups were summarized. Following are summaries of the discussions held at each of the Breakout sessions.

Breakout session 1: What 21st century management practices influence the development of BRD, and how can management be modified to limit BRD?

In this breakout session, one group was asked to discuss the issue of early diagnosis of BRD with a focus on economically significant losses. It was noted that in cow/calf operations general observations are made on groups of calves, while in dairy units a clinical examination is often performed on individual calves. While these practices will probably not change in the near future, additional diagnostic approaches that are now used in research settings may see field use for early diagnosis of BRD. These include thorax ultrasound, plasma tests to identify high-risk calves and automated feed intake monitoring. In human medicine and with companion animals, pulse oximetry has become an important measure of pulmonary dysfunction. The pigmented skin of cattle has posed limitations to this application at this time.

There was consensus that mortality was the largest economic loss in BRD, while lost feed efficiency was not easily quantified but was also a concern. There is strong interest in identifying interventions that would result in improved carcass quality, although there were no identified methods to reduce the impact of BRD on carcass quality. The question of whether or not management practices have been maximized to reduce the impact of BRD was posed. Continuing genetic selection was identified as the most strategic area for improvement, with a focus on sire hereditability. Selection interventions do also raise the dilemma of early cull versus feed to market options.

A second group was asked to discuss market pressures that may limit the impact of BRD. Current marketing of beef calves involves auction market sale of 82% of calves going on feed. These calves receive minimal management to reduce the risk of BRD, primarily because of lack of incentives to increase this management at the cow-calf level. Some 'drivers' that influence how we manage BRD are the availability of effective and long-acting antibiotics, while consumer preferences may shift management to less reliance on antibiotics and more on prevention of BRD due to animal welfare concerns. Indeed, animal rights groups have focused attention on the difference between high-risk and low-risk cattle.

In terms of improvements in BRD management, the group thought that traceability of calves would help in

distinguishing 'good cattle' from 'bad cattle'. It would also lead to increased feedback between buyers and sellers, and even to approximations of the 'calf health' programs now used for dairy heifers. The further development of alliances and process verification programs should also provide economic incentives to better management of BRD. The development of novel chemical delivery systems would also lead to better vaccines and facilitate early intervention to control BRD.

The third group addressed the importance of labor availability and BRD control. The difference between providing veterinary services for a feedlot with good human relations (HR) practices and one with deficiencies was highlighted. A heightened emphasis on good HR by managers would include timely training of managers in this area. There is a role for everyone, including cattlemen's associations, veterinary associations, veterinarians and managers in promoting the concept that animal agriculture provides good jobs. This effort must be backed up by the delivery of good jobs as measured by pay, benefits, training opportunities and overall job satisfaction. Together with this effort, there is consensus that the need for labor must be reduced. This can be accomplished by employing well-trained people and introducing new technologies that reduce the need for labor.

Breakout session 2: How does a growing non-farm public influence animal health delivery and research, and how can those working in animal health most effectively interact with such a public?

The first group discussed the impact of the consumer on demand for animal products. Consumers demand increasing variety in these products, and this leads to development of modified products. Prime examples exist in dairy-derived food products, while beef products are also seeing modifications to increase variety. Food processors channel this public demand into marketable choices, thus innovation should be stressed in the area of dairy and beef product processing. The impact of the global consumer on the US and Canadian beef production was also discussed, and the consensus was that this impact, although important in certain areas, was difficult to project into the future as beef production is increased in other countries.

The question of what drives consumer preferences was then addressed. Due to the stressed economy, price is a major factor at present. Customs and traditions are also primary drivers in beef consumption. Increasingly though, consumers have become distrustful of food products, experiencing safety warnings or recalls of products. Of note is that cattle producers and veterinary practitioners still are trusted for their participation in the beef supply chain. Also, the North American market did not suffer the severe impact from BSE that affected Europe. The influence of animal welfare activists on the consumer was considered very moderate at this time. Discussion followed on how veterinarians can best interact with the public. Participants affirmed that the veterinarian delivers animal welfare and alternatives to current production systems that present animal welfare concerns were proposed. Assuring ethical behavior among the profession was considered an imperative.

The influence of a non-farm public on the establishment of policies that affect producers and practitioners was discussed by the second group. This influence was fully acknowledged, although participants recognized that often the driving force for what the public believes is misinformation disseminated by interest groups, such as HSUS, PETA, or non-traditional agriculture entities. Agriculture needs to develop proactive campaigns to educate the public and policy makers on the science underlying current production systems. It was acknowledged that much of the public perception is held at an emotional level, so educational efforts need to address these perceptions at the same level. Discussion followed on how to address specific animal welfare activist campaigns. The industry should develop active strategies and stop relying on reactions to activist ploys. Coordinated 'image development' efforts need to be made with the help of professional marketers and communication experts.

A focus on educating the consumer was addressed by the third group. Presenting the right example was stressed; as one commentator noted, producers should be encouraged to 'do everything right, and ask themselves if this is something they want to see in the evening news'. Producers, practitioners and researchers should be 'good neighbors', and also be active in their community, participating in schools and youth groups, to bring agriculture to the classroom. Targeted media messages can be powerful tools when delivered by national groups such as the NCBA and AVMA. These messages should deliver appropriate emotional impact while being scientifically sound. They should also be made through new mass communication channels, such as blogs, Twitter and internet postings. Finally, those involved in animal agriculture should be willing to participate in the public dialogue through letters to the editor and writings and communications targeting the public at large.

Breakout session 3: Where should BRD research be focused in the next 10 to 20 years, and how can young scientists be encouraged to undertake a career in bovine health research?

Future knowledge needs were addressed by the first group. They identified a need for both additional basic and applied knowledge of bovine immunology. An emphasis on understanding of immunocompromise in BRD, as well as on immune stimulants for use in cattle

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was highlighted. Additional knowledge about animal behavior would also see application for control of BRD. Improving the case definition of BRD should be done while incorporating new diagnostic capabilities. Cattle-side diagnostic aids focused on genetic markers, stress markers and pain markers would be invaluable new tools to use in management of BRD cases. Updated and improved knowledge about neonatal health management in beef production would also have beneficial impact on BRD management.

Much of the knowledge about BRD is contributed by the services of veterinary diagnostic laboratories. Cost-effective and evidence-based diagnostic workups should make producers value these services. In addition, communication of the need for public support for the training of veterinarians and the operation of veterinary diagnostic units is essential to the development of sound state and federal policies related to control of disease in cattle.

The development of veterinary technicians in the US was contrasted with European models where several levels of technicians are prepared, including the 'veterinary nurse' specialty in the UK. Such concepts merit exploration as we focus on the future of animal health delivery and the impact of shortages in specialized labor to handle BRD problems.

Future research needs were discussed by the second group. The group stressed that economics were the driving force in the implementation of what is known to be relevant to combat BRD. Much knowledge is currently not applied because of the drive for profits. The public may demand that animal health become a higher priority, and then some of this knowledge would be applied in response to mandates. This group identified many of the same priorities mentioned by the first group: more research on the bovine immune system, research to develop rapid and cattle-side diagnostics, and research to discover genetic correlates to disease resistance and their impact on performance and product quality. Research was encouraged on ways to deliver health products to sites of disease, as well as the development of convenient delivery methods such as edible vaccines. In addition, sociological research should focus on the current barriers to progress in BRD control, with emphasis on ways to encourage positive management changes at all levels of beef production.

Financing for needed BRD research efforts was analyzed by the third group. Major sources of US funding are currently found in programs from the federal government and from the animal health industry. US beef producers see their contributions (current check-off of $1/head) limited by law to post-harvest problems. As a contrast, Australia currently implements a check-off of approximately $6/head and 50% of this is invested in animal health research. This research is conducted in cooperative research centers, formed as partnerships between the federal government, producer organizations and academia. An example of success of this approach was the implementation of management practices based on funded research on heat stress.

Accountability to stakeholders for research investment was also discussed. While strict adherence to proposed research outcomes was not viewed as a requirement, there is a need to examine how research results can be delivered to veterinary practitioners and producers. In the past, USDA and State Extension employees and their activities were a major route by which research information was disseminated to users in the field. However, this model is rapidly becoming unreliable, since major budget cuts have decimated most extension activities. The animal health industry currently disseminates new research findings to users through their representatives and publications. Practitioners in the discussion commented that the information they received from industry was often useful and not overtly biased in favor of products sold by the communicating company. However, there was a perceived need for sources of information that may be useful for animal health but not necessarily profitable for a company. Most veterinary practitioners and producers are rapidly gaining access to modern communication networks. Free sources of research information such as PubMed or Agricola may not provide easily applicable information. Geni Wren, the editor of Food360 trade magazines (e.g. Bovine Veterinarian and Drovers) was commended for exemplary communication to the bovine industry. Participants were interested in the concept of a USDA-supported web system or e-newsletter that could bridge this gap in research dissemination capability.

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