Introduction
The Center for Food Security and Public Health at Iowa State University has prepared a toolbox of materials for use by Extension Specialists and other educators to help cattle producers manage disease risk on cattle operations. The materials focus on the routes of disease transmission (aerosol, oral, direct contact, fomites, and vectors). Since all diseases are transmitted by one or more of these routes, risk management based on disease transmission routes can reduce the risk for many infectious diseases. These materials should be used by advisors to beef and dairy producers to help decrease the risk of introduction and spread of disease and to enhance profitability of their operations. Both English and Spanish versions of these materials are available.

Producer Education
This handout will focus on producer education which could occur both in group settings and individually. Group settings could include local beef and dairy producer groups, farm organizations, FFA, 4-H clubs, feed company or pharmaceutical representatives, milk truck drivers and veterinarians. For individual educational opportunities, there are various handouts, signs, and fact sheets that could be printed out and taken to the farm to help address disease risk management. We encourage you to visit the CFSPH website www.cfsph.iastate.edu/RMA to download the latest versions of materials, obtain new materials or newsletter articles that you can print in local publications, and share the resources with cattle producers in your area.

Desired Outcomes
Messages to convey to cattle producers
- All diseases are transmitted by a few common routes
- Disease risk can be managed
- Many disease risk management practices are inexpensive to implement
- Everyone who has contact with cattle on their operation needs to be aware of disease risk management practices and apply them

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We are dedicated to offering only the highest quality materials. Your feedback greatly assists us in this matter. Upon completion of any education opportunity, please fill out a Report Form from the CD or our website and email it to cfsph@iastate.edu or fax it to 515-294-8259.
Preparing for Producer Education

Group settings - initial, 1 to 1½ hour meeting
If this is the first time you have addressed the topic of biological risk management, begin with the Overview of Biological Risk Management PowerPoint. This PowerPoint presentation is designed for beef or dairy producers and gives the audience a background on the importance of biological risk management, managing disease risk by routes of transmission as well as general prevention practices that can be implemented on any farm to minimize disease entry or spread. Estimated time to deliver as written: 55 minutes

Overview of Biological Risk Management
The basic outline of the presentation is:

- Importance of BRM (20 minutes)
- Risk perception and assessment (15 minutes)
  - Routes of transmission
- Practical management plans (10 minutes)
  - General prevention practices
- Increased awareness through communication (5 min)

The following supplements are designed for producers to take home to serve as a quick review of some of the key points delivered in this presentation:

- Transmission Route Definition Handout: This document defines the five common routes of disease transmission (aerosol, direct contact, fomite, oral, vector) as well as zoonotic and environmental transmission. Once you get to the Routes of Transmission section in the PowerPoint, this could be given to the audience to follow along. It is also a good way to finish the presentation and send home with your audience members as a reminder of the major routes of transmission.

- General Prevention Practices Handout: This document provides general prevention recommendations that beef or dairy operations can implement to decrease the risk of disease entry or spread on the farm. Once you get to the section of the PowerPoint on Practical Management Plans, this document could be given to the audience so they can follow along and read more details about each of the general statements provided in the presentation.

- General Prevention Practices Checklist: Upon conclusion of your presentation, this document could be given to the audience so they can take it home and evaluate their own operation for disease risk. Encourage its use and follow up with them individually on the farm to discuss ways to manage the disease risks they identify.
Group settings- follow up, 45 minutes to 1 hour meetings
If this is the second time you have addressed the topic of biological risk management, or your audience has some background with the topic, a more detailed presentation is warranted. You could present any of the 4 route specific PowerPoints – *Practical Applications for Managing Biological Risks: Aerosol, Direct Contact and Fomite, Oral and Fomite, Vector*. Each individual presentation as written will take 25 to 40 minutes to deliver.

The basic outline of each presentation is:
- Brief introduction to BRM (2 minutes)
- Routes of transmission (5 minutes)
  - Definition
- General prevention practices (10 minutes)
- Route specific prevention practices (5 to 15 minutes depending on route)
  - List of domestic and foreign animal diseases

If a disease outbreak has occurred in your area, or there are certain diseases you know cattle producers are concerned with, use the *Bovine Diseases by Route of Transmission* handout and find out the routes by which a specific disease is transmitted. Then organize your presentation to cover those routes.

For example, BVD is a concern in many areas, on both beef and dairy operations. The main ways this disease is spread is through Aerosol, Direct Contact (specifically reproductive), Fomite, and Oral. You could combine three PowerPoints in such a way to have a 51 slide presentation. Let’s walk through the steps of making that happen.

- Open all three PowerPoint presentations. Change them to Slide Sorter View (pictured right).
- Make *Aerosol* your master presentation and paste all the other slides into it.
- In the *Direct Contact and Fomite* presentation, copy all slides pertaining to Direct Contact, Fomite but not the Summary slide.
- Paste those slides into the *Aerosol* presentation just BEFORE the Summary slide.
- In the *Oral and Fomite* presentation, copy all slides pertaining to Oral, Fomite but not the Summary slide.
- Paste those slides into the *Aerosol* presentation AFTER the Direct Contact, Fomite slides.
- Alter the Summary slide (pictured right) to indicate the 4 routes you have just covered. Change the first bullet and alter your list of diseases to cover those routes just reviewed.
Supplements to this presentation include:

- **Transmission Route Definition Handout**: This document defines the five common routes of disease transmission (aerosol, direct contact, fomite, oral, vector) as well as zoonotic and environmental transmission. Once you get to the *Routes of Transmission* section of the PowerPoint, this could be given to the audience to follow along. It is also a good way to finish the presentation and send home with your audience members as a reminder of the major routes of transmission.

- **Aerosol Transmission Control**: This document summarizes the key points of managing diseases transmitted by aerosol and can be used to highlight the main points of the corresponding PowerPoint.

- **Direct Contact Transmission Control**: This document summarizes the focus area of managing diseases spread by direct contact on beef and dairy operations and can be used to supplement the *Direct Contact and Fomite* PowerPoint listed above.

- **Oral Checklist (Beef or Dairy)**: This supplements the *Oral and Fomite* PowerPoint (listed above) and is designed to be given to producers after the presentation. Producers can take this checklist home and evaluate their own operation for oral disease risk.
One-on-One Producer Education

The opportunity may present itself to conduct some one-on-one education with producers on the farm. There are a variety of handouts that can be used to supplement your discussion of disease risk management principles. If this is the first time you have discussed the subject, start with the following items:

- **Transmission Route Definition Handout**: This document defines the five common routes of disease transmission (aerosol, direct contact, fomite, oral, vector) as well as zoonotic and environmental transmission. This will introduce the concept of managing diseases based on routes of transmission rather than specific diseases.
- **General Prevention Practices Handout**: This document provides general prevention recommendations that beef or dairy operations can implement to decrease the risk of disease entry or spread on the farm. It addresses many different areas on the farm and provides practical recommendations for minimizing disease spread.
- **General Prevention Practices Checklist**: This supplements the *General Prevention Practices* document. Once producers have an overview of the disease risk management principles, this checklist allows them to evaluate their own operation for disease risk. Together you could complete the checklist and then discuss any “no” responses, or areas for improvement, and design a working plan to minimize the most important risks for that operation.

In addition to the three documents listed above, there are a variety of other handouts that will help producers implement disease risk management protocols on the farm.

- **Signage** is provided to increase awareness of visitors regarding the farm’s disease management plan: *Authorized Personnel Only, Check In, Do Not Enter, Farm Visitor Policy, Honk Horn, Protective Clothing, and Visitors: Animal Contact.*

- There is a **Visitor Log Template** provided that can be given to producers to post at the entrance or “check in” area of the farm, to record visitors, their last known cattle contact and the dates of their visit. It can be modified to fit the needs of individual producers.

- The handouts *Antimicrobial Spectrum of Disinfectants* and *Characteristics of Selected Disinfectants* are essential when selecting proper disinfectants to use on the farm.

Finally, as a registered member of the **BRM Online Database**, you could conduct a full risk assessment of their facility. Based on the findings in the final reports, you could supplement your discussion with the cattle producer with a variety of handouts based on the individual needs of that cattle producer’s operation.
Foreign Animal Disease Information
In the event a foreign animal disease is diagnosed in the U.S., a set of tools for additional biological risk management practices should be shared with producers to help further protect their operations. The tools focus on the following high priority foreign animal diseases:

- Contagious Bovine Pleuropneumonia (CBPP)
- Foot-and-Mouth Disease (FMD)
- Heartwater
- Rift Valley Fever (RVF)
- Rinderpest

The tools are unique to each disease based on its route of transmission, survival in the environment, and susceptibility to disinfectants. The emergency response plan will differ depending on the foreign animal disease that is introduced. For example, Heartwater and Rift Valley Fever are transmitted by insect vectors. Control of insect vectors is very important for reducing the risk of introduction of those diseases. It plays only a minor role in reducing the risk of other diseases like Foot-and-Mouth Disease which is not spread by insect vectors.

For each disease, the following tools are included:

- Disease PowerPoint Presentation
- Extension Fact Sheet
- Fast Facts for general public audiences
- Disease specific Prevention Practices and Checklist
- Photos with common Signs of Illness in Cattle
- Disinfectant information
- Additional information related to some of the diseases

In this critical situation, it is important that accurate information is rapidly disseminated to as many people as possible. For this reason, the materials listed above (except the PowerPoint presentation and Extension Fact Sheet) are packaged as one file (Disease Response Package) so it can be emailed to cattle producers, extension personnel, veterinarians, allied livestock industries in your area, local law enforcement, human medical personnel, and any other group or individual that would need this important information in a timely manner.

The PowerPoint presentation would serve to educate larger groups of people at one time and any of the information listed above would make excellent supplemental handouts for those audiences.