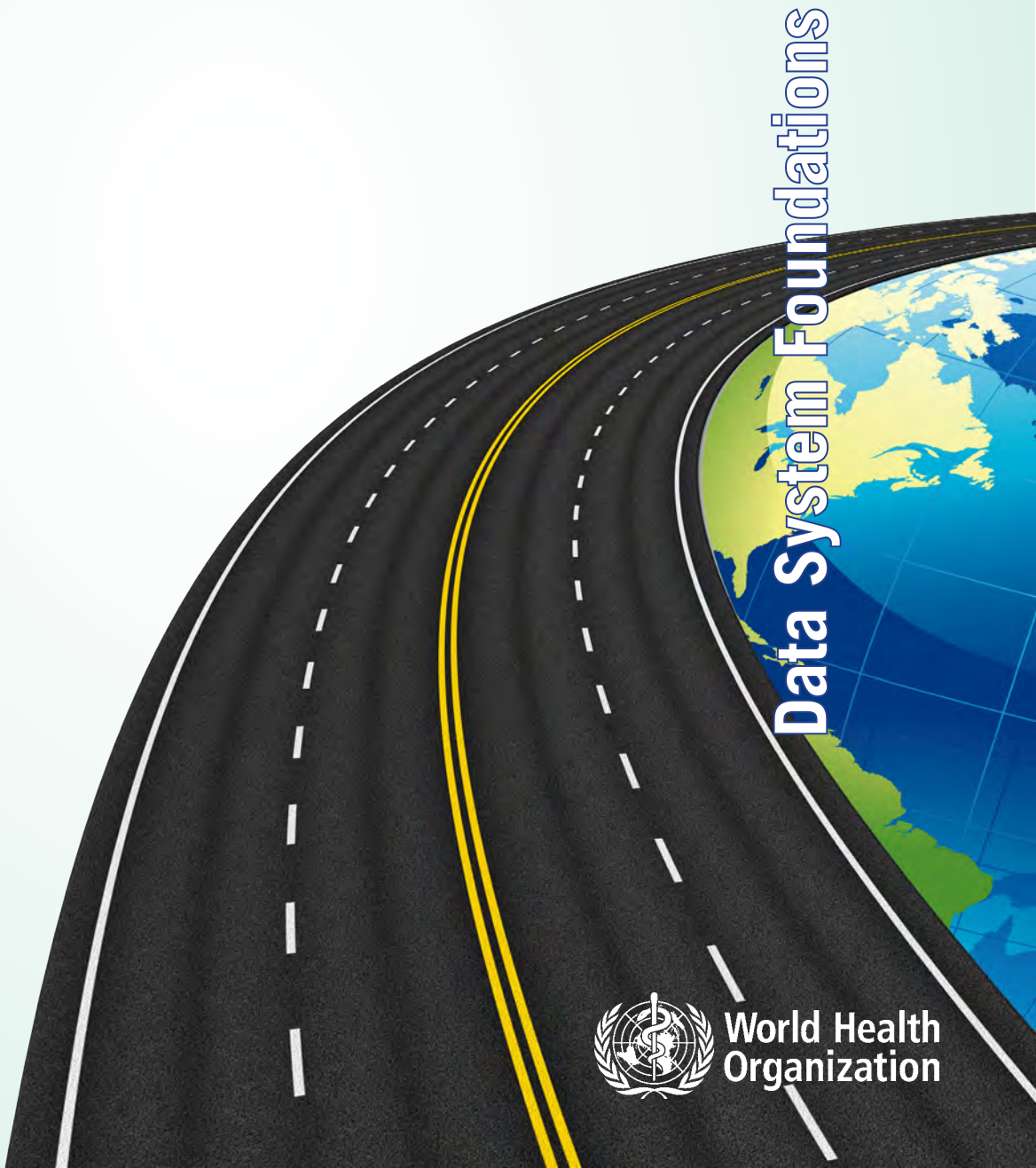
International Traffic Safety

Data Systems Improvement

Participant Workbook



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Contents

Table of Contents

Introduction

What You'll Need

- ✓ Before you begin this workshop, make sure you have a copy of **Data Systems: A Road Safety Manual for Decision Makers and Practitioners,** available at the World Health Organization Website at: http://whqlibdoc.who.int/publications/2010/9789241598965_eng.pdf

IMPORTANT

When you download the Data Systems Manual using the link above, note that the link is only to one portion of the Manual. You will need to use hyperlinks within that document's Table of Contents to download the remainder of the Manual.

Note that Chapter 3 is comprised of two files, one titled "3a" and one "3b."

How to Use this Workbook

- ✓ You will use this Workbook to complete activities on your own as well as with your classmates.
- ✓ Icons in the left column of the guide identify key content types. See the table below for a key to the icons used in this guide.
- ✓ Many of the activity outcomes in this Workbook will become part of your project plan for the Situational Assessment that you'll perform when you return to your country.

Icon keys

Notes

1

IMPORTANCE OF DATA SYSTEMS

1 • Importance of Data Systems

Welcome

Activity • Ice Breaker

INSTRUCTIONS

1. Take a few minutes to think about a traffic crash you recently experienced or observed. This crash can be something that happened to you or that you watched happen to someone else. Describe the crash below.

2. What could have prevented it from happening?

3. Allow a few minutes for participants to record the crash and preventive ideas in the Workbook.

Workshop Goals

Upon workshop completion, you'll be able to:

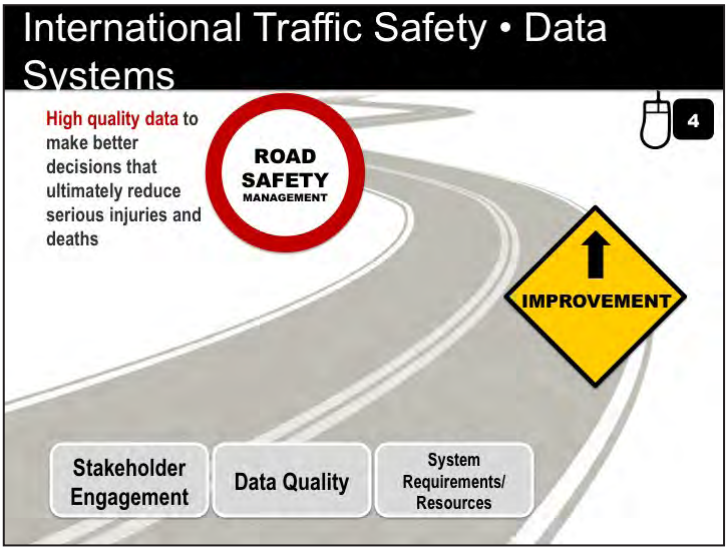
- ✓ Describe traffic safety Data System Components required to build a successful traffic safety data system.
- ✓ Understand how the following contribute to a comprehensive traffic safety data system: data beyond crash data; road safety management; and data from different sectors.
- ✓ Describe how a comprehensive traffic safety data system leads to successful evaluation.
- ✓ Prepare the tools and strategy you'll need when you return to your country and perform a Situational Assessment of your traffic safety data systems.
- ✓ Work through a fictional case study that includes some of the same challenges you may face in your home countries.

Goals for Lesson 1

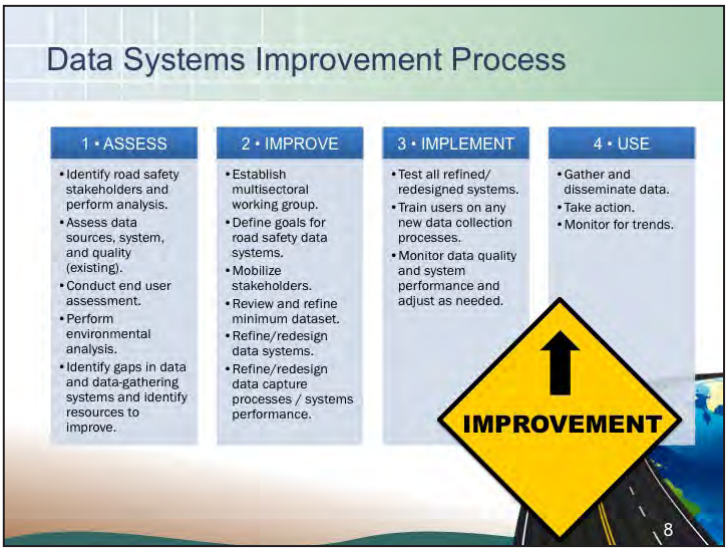
- ✓ To define *comprehensive traffic safety data system.*
- ✓ To recognize how data from different sectors contribute to a comprehensive traffic safety data system and road safety management.
- ✓ Understand how a comprehensive traffic safety data system and successful evaluation are linked.

Data Systems Overview

Data Systems Components



Data Systems Improvement Process



Why are Data Systems Important?

Case Study

- ✓ One city in Brazil put a lot of money into policing the roundabouts in the city. Data showed that the highest volume of crashes occurred at roundabouts.
- ✓ Expensive engineering measures were considered to help solve the crash problem at roundabouts.
- ✓ When the city changed their data collection process and improved their data system, they came to understand that the efforts at the roundabouts were a waste of time and resources—because while it was true that most of the crashes happened at roundabouts, the types of accidents involved mostly minor property damage.
- ✓ The improved traffic safety data system told them where the most traffic fatalities were occurring, and by whom—areas where there was a high concentration of bars, by motorcyclists.
- ✓ With the new data pointing to a more serious problem, the city will ultimately be able to address the fatality issue and potentially reduce the number of people dying of traumatic brain injuries.

CASE STUDY DISCUSSION

Page 9

Data Requirements

✓ A comprehensive system collects and examines many factors related to traffic crashes, including:

- **Outputs.** What enforcement policies or interventions are in place?
- **Safety performance indicators.** How many people are driving the speed limit, wearing seatbelts, or driving drunk?
- **Final outcomes.** What was the end result of a crash—death, injury, property damage?
- **Socio–economic costs.** What is the cost to society (loss of life, property, productivity, health, etc.)?

Outputs

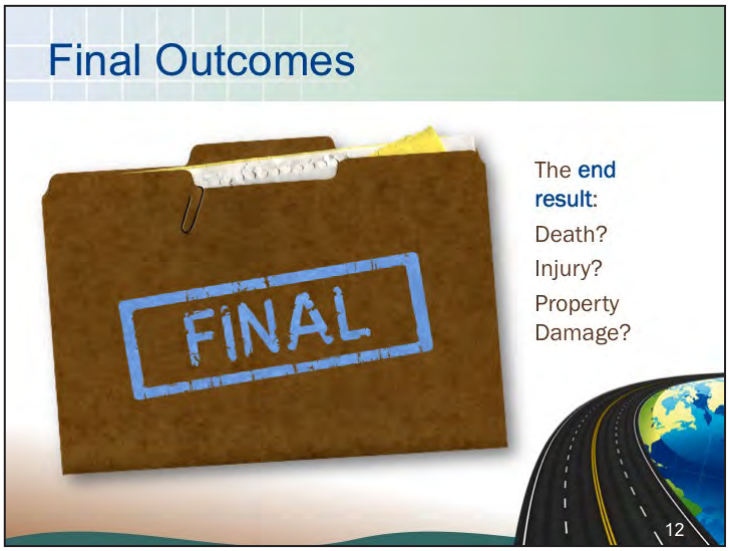
- ✓ The dictionary definition of **outputs** is:
  - *The amount of energy, work, goods, or services produced by a machine, factory, company, or an individual in a period.*[1]
- ✓ Outputs are the *visible results* of safety policies and programs.
- ✓ Output data may include:
  - How many roadblocks were set up for random breath testing?
  - How many speed bumps have been built?
  - How many billboards were used for a safety campaign?
- ✓ Enforcement efforts are outputs. Enforcement efforts require *energy* and *work*.
  - This work is measured in terms of man hours spent on enforcement tasks such as performing breathalyzer tests for alcohol detection.

1 http://www.businessdictionary.com/definition/output.html

Safety Performance Indicators

- ✓ Safety Performance Indicators are factors that lead up to the final outcome.
- ✓ **Indicators** are *variables* that can be used to *measure change.*
- ✓ Think of Safety Performance Indicators as factors in effect between point A and point B of a trip over the road.
- ✓ Safety Performance Indicators are variables related to the environment, the vehicle, or road–user behavior. For example:
  - Does the driver speed?
  - Does the driver drink alcohol and then drive?
  - Do motorcyclists wear helmets?
  - Is the road designed for safety?
  - How quickly can an ambulance reach the site and then transport people to the hospital?
  - How old is the vehicle, and how crash–worthy?

Final Outcomes



✓ End results include:
- Death
- Injury
- Property Damage

Socio–economic costs

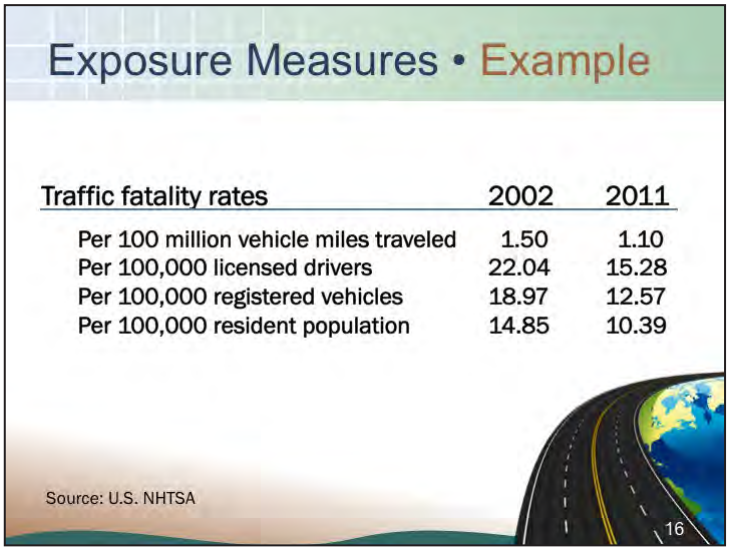
✓ **Socio–economic costs** are the costs borne by everyone in a society:

✓ Unsafe driving conditions affect the economy on a local and national level.

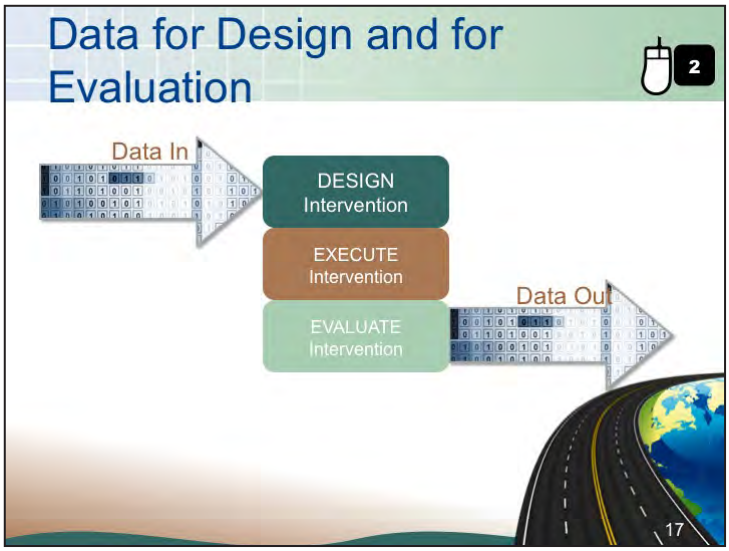
DATA REQUIREMENTS SUMMARY

Final Outcomes

Page 9



Data for Program Design and for Program Evaluation



✓ Data systems and interventions are co–dependent:
- data systems **provide information** to help design the interventions most likely to be effective;
- then, data systems are used **to analyze** the effect(s) of the interventions and monitor progress.

Targets

Establishing **Targets** are a way to assess your progress and success. Targets are specific goals that interventions are designed to work towards.

Target Guidelines are:

1.

2.

3.

4.

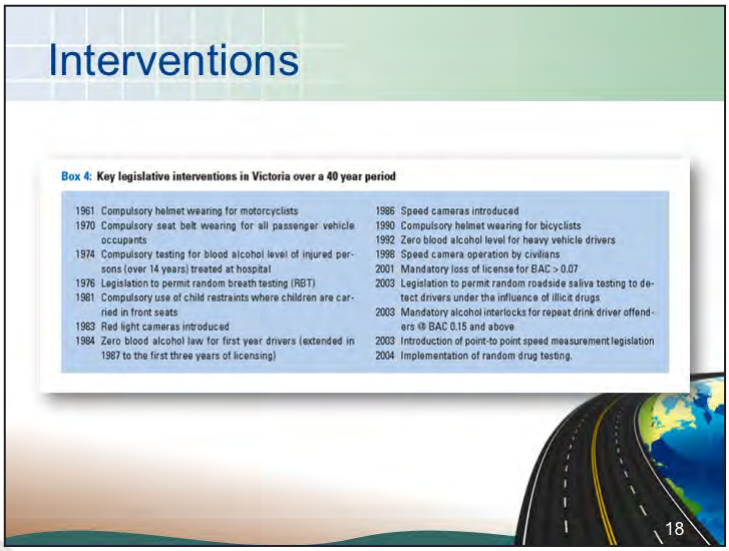
5.

Notes

Why Evaluate?

EVALUATION DISCUSSION

Interventions



EVALUATION DISCUSSION

Process Evaluation

- ✓ Examines whether the intervention was carried out as planned.
- ✓ Helps to understand why the measure led or did not lead to the desired result.
- ✓ identifies the strengths and weaknesses to guide program improvement.
- ✓ Aids in understanding why certain outcomes were, or were not, achieved.

Common questions include:

Impact Evaluation

- ✓ Determines whether the intervention brought about a change that would not have occurred without the intervention.
- ✓ Measures changes such as road–user knowledge, perceptions and behavior, and impact of engineering treatments (immediate effects).
- ✓ Benefits from regularly measured Safety Performance Indicators.

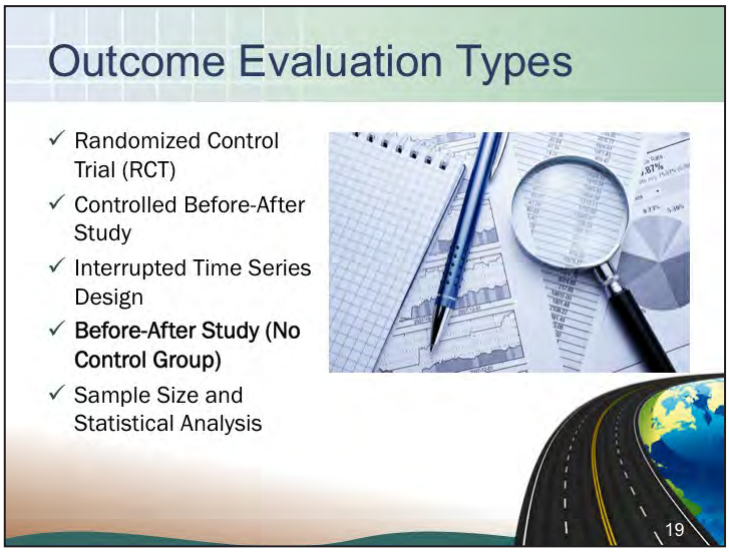
Common questions include:

Outcome Evaluation

- ✓ Investigates where the intervention was successful.
- ✓ Did intervention lead to the desired result?
- ✓ Typically measures changes in outcome indicators.
- ✓ Concerned with measuring longer–term effects.

Common questions include:

Pages 137–138



✓ When improving your data system, consider three factors that will affect the possibility and quality of road safety interventions.

1. Systems architecture.

2. Data quality.

3. Output.

DATA REQUIREMENTS AND EVALUATION SUMMARY

Sector Roles and Data Needs

Law Enforcement • p. 10–12
Transport • p. 12–14
Health • p. 14–15

ACTIVITY • Sector Roles and Data Needs

INSTRUCTIONS

Listen as your instructor explains the activity.

My Sector Assignment:

. . . . . .

. . . . . .

PRESENTATION OUTLINE

Prepare for your sector presentation using the questions below.

1. In addition to data collection, what are the other duties of your assigned sector?

. . . . . .

. . . . . .

. . . . . .

. . . . . .

. . . . . .

2. According to the Data Systems Manual, what data is typically collected by the sector?

. . . . . .

. . . . . .

. . . . . .

. . . . . .

. . . . . .

3. Who collects the data in your assigned sector? What is their role?

4. What data does the sector need for its own purposes?

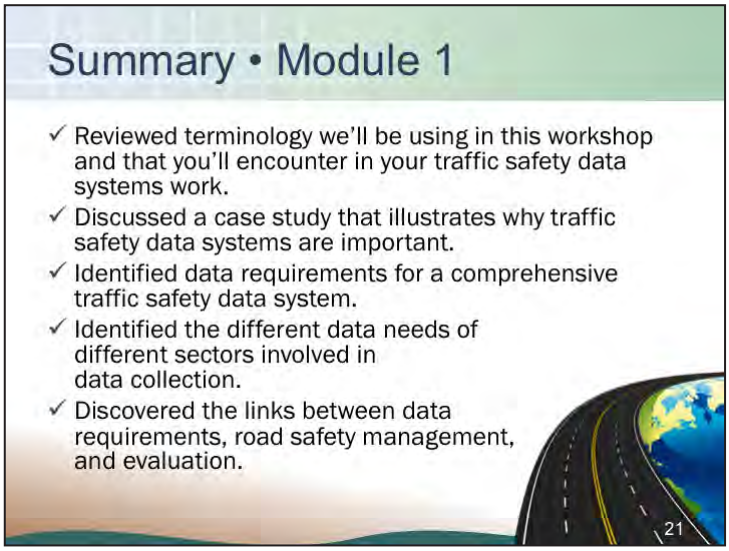
Use the following table to capture information from the sector presentations.

Law Enforcement Sector	Transport Sector	Health Sector

SECTOR DATA NEEDS DISCUSSION

Lesson Summary

In this lesson, we:



Notes

2

CURRENT DATA SYSTEMS

Current Data System

Welcome

Goal for Lesson 2

✓ Gain a firm understanding of where you/your group is at in your data systems improvement process.

ACTIVITY • Questionnaire Review

Questionnaire on Traffic Safety Data in Your Jurisdiction

Instructions

1. Complete the questions to the best of your ability before attending your first workshop.

Please send the completed questionnaire to:

Name

E-mail

Phone

Date Due

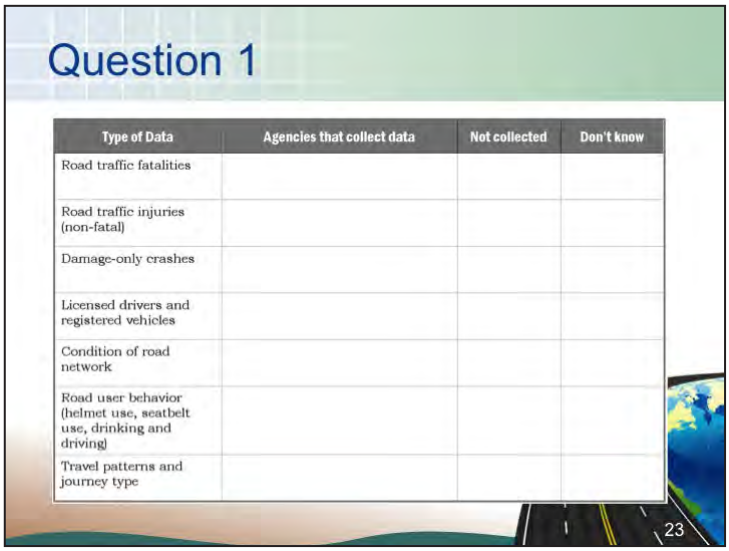
2. Also bring a completed copy of the questionnaire to your workshops.

Questions

1. Which agencies in your jurisdiction collect the following data? Please list all agencies you are aware of.

Type of Data	Agencies that collect data	Not collected	Don't know
Road traffic fatalities			
Road traffic injuries (non-fatal)			
Damage-only crashes			
Licensed drivers and registered vehicles			
Condition of road network			
Road user behavior (helmet use, seatbelt use, drinking and driving)			
Travel patterns and journey type			

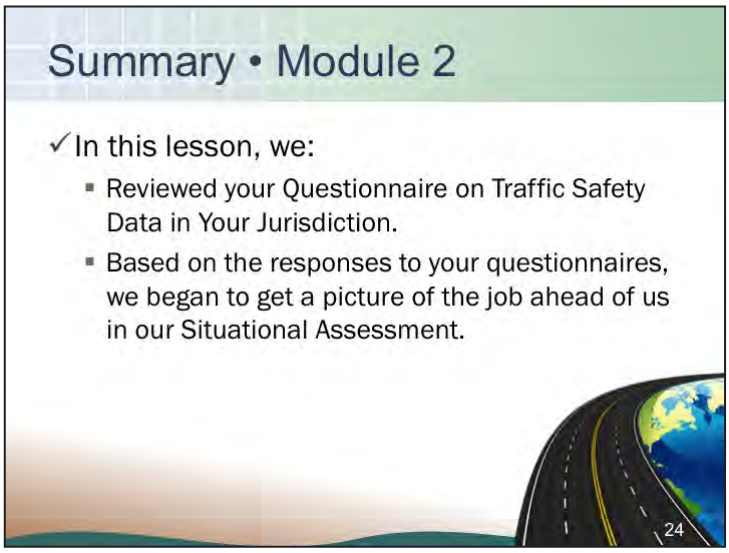
QUESTION 1



DISCUSSION

DISCUSSION

Lesson Summary



Notes

3

DATA SYSTEM COMPONENTS

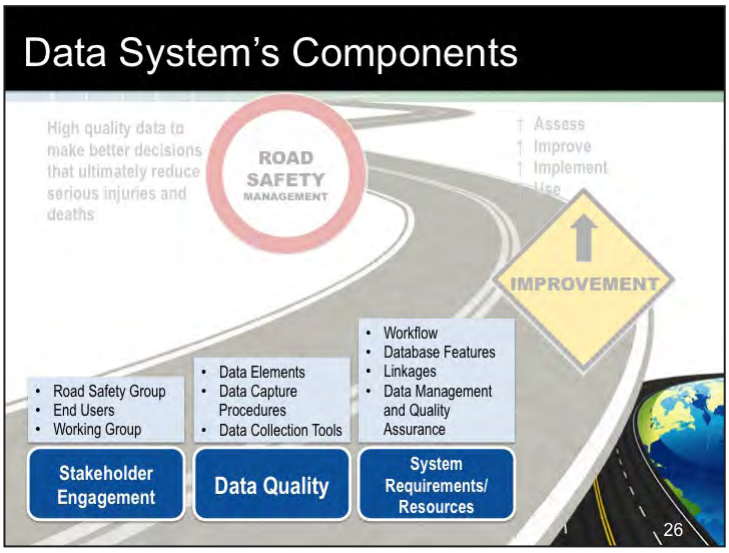
Data System Components

Overview

Goal for Lesson 3

✓ Understand a traffic safety data system's building block components.

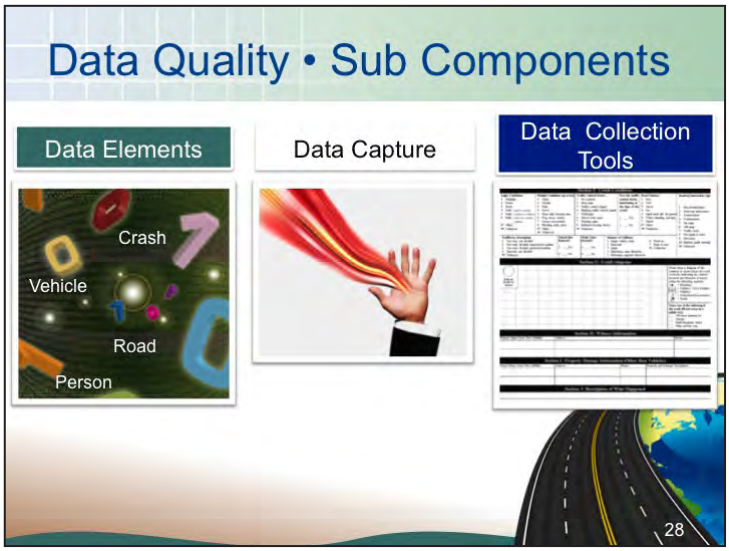
Component Overview



Stakeholder Engagement

Describe stakeholder engagement.

Data Quality



Describe the three sub components of data quality.

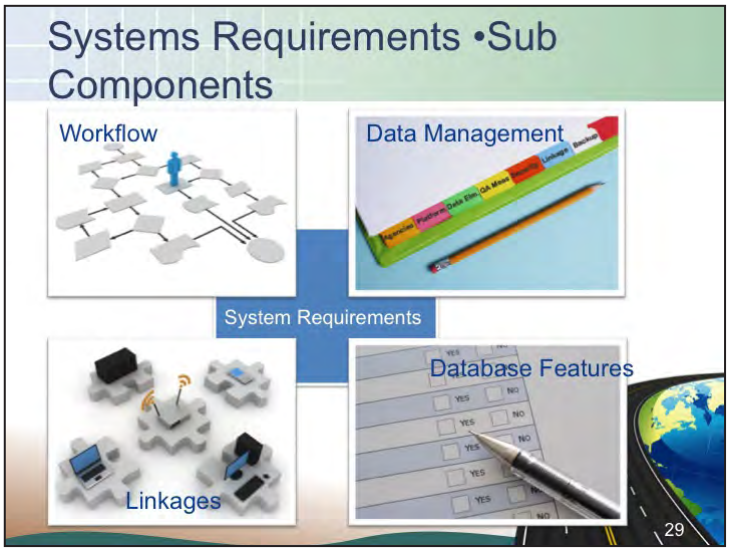
Data Elements

Data Capture

Data Collection Tools

Listen to the facilitator mention items that may affect data quality. Determine how each item might affect data quality.

Data Systems Sub Components



Describe the sub components of the data system.

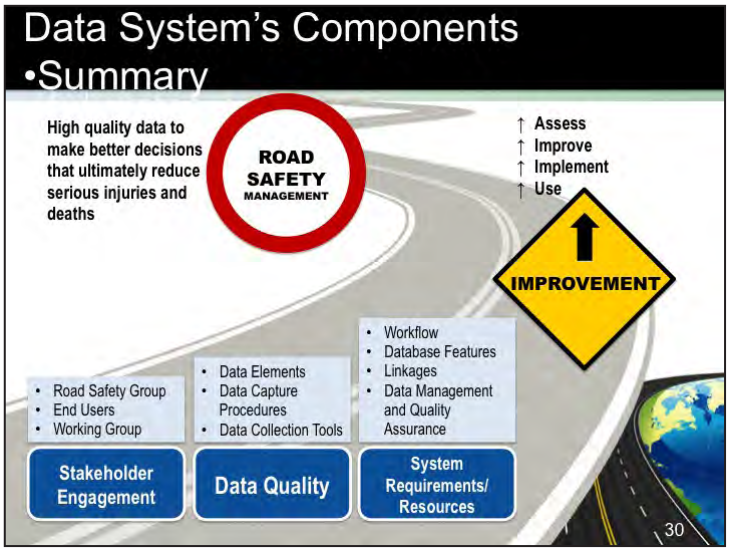
Workflow

Database Features

Linkages

Data management and quality assurance

Lesson Summary



- ✓ In this lesson we introduced the building block components of a traffic safety data system.
- ✓ Understanding these core components will help you improve your data system.
- ✓ An improved data system leads to effective road safety management and ultimately fewer road crash deaths and serious injuries.

Notes

4

SITUATIONAL ASSESSEMENT

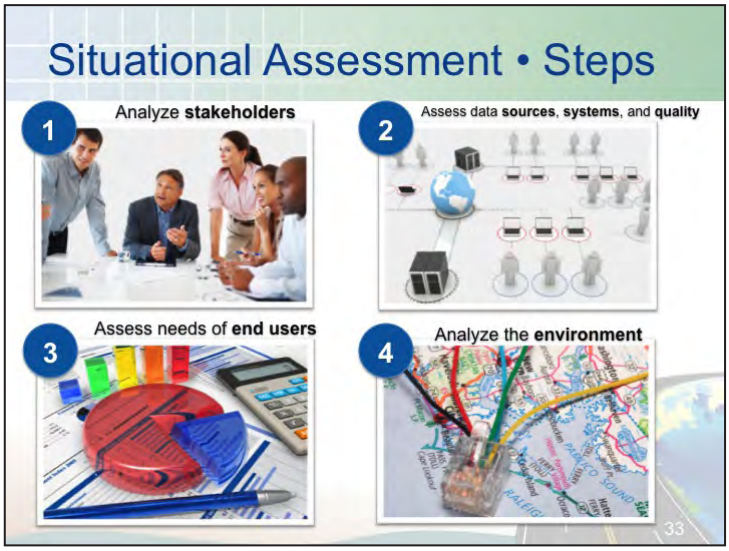
Situational Assessment

What is the Situational Assessment?

Goal for Lesson 4

- ✓ Describe the Assessment Phase of the Improvement Process.
- ✓ Create a draft Situational Assessment Action Plan.

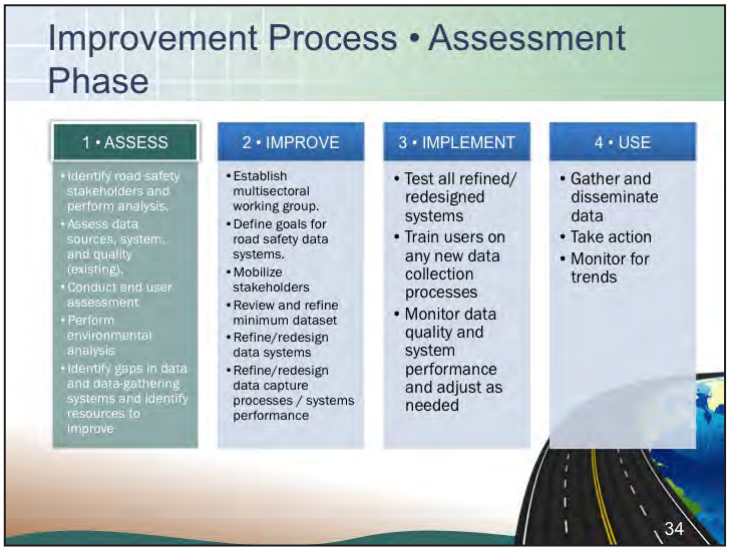
What is the Situational Assessment?



There are four main steps in the Situational Assessment.

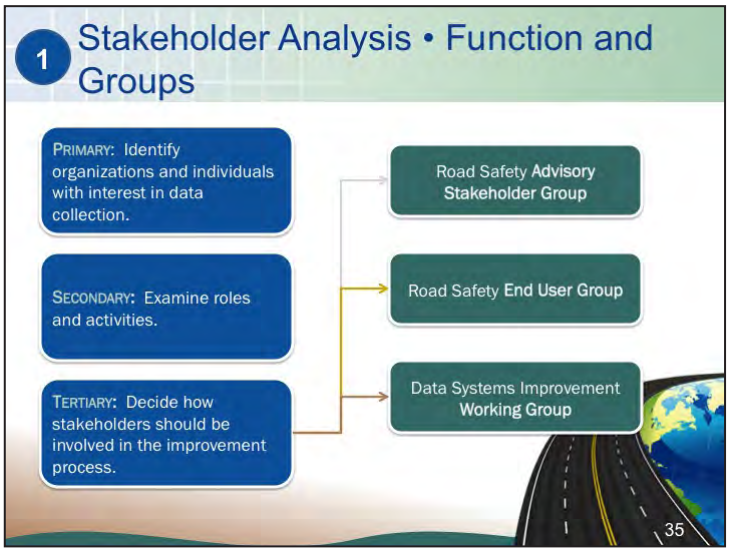
1. Define and assess stakeholders.
2. Assess data sources, data systems, and data quality.
3. Define and assess end users.
4. Assess the environment.

The output of the Situational Assessment is:



✓ The Situational Assessment is Phase 1 • Assess in your country's data system's improvement process.

Step One • Stakeholder Analysis



Stakeholders most involved with road safety data include:

1. . . . . .

2. . . . . .

3. . . . . .

PRIMARY STAKEHOLDER GROUPS

SECONDARY STAKEHOLDER GROUPS

Stakeholder Involvement

Road Safety Advisory Stakeholder Group

Road Safety End User Group

Data Systems Improvement Working Group

Case Study • Boldonia

Refer to the Stakeholder Analysis on page 3 of the Boldonia Case Study. You'll review this together with the class.

CASE STUDY DISCUSSION • STAKEHOLDER ANALYSIS

Pages 22–24

ACTIVITY • Stakeholder Analysis

INSTRUCTIONS

1. Work in your home group to complete the questions below.

? **Identify all stakeholders in law enforcement, transport, and health sectors.**

? **Identify other types of stakeholders (insurance, NGO's, academic institutions, automobile industry).**

? **Identify the activities and roles of each stakeholder in relation to road safety data.**

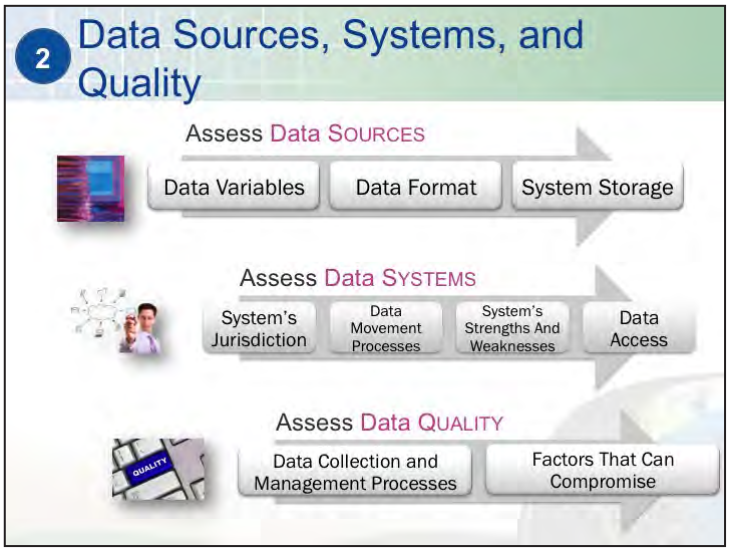
? **Identify the stakeholders who will be key supporters or opponents.**

? **Describe your first meeting. Who's there? What is the agenda? What is the meeting goal?**

? **What will you need to do to fully identify all stakeholders, roles, and positions?**

ACTIVITY DISCUSSION

Step Two • Assess Data Sources, Systems, and Quality



Assess Data Sources

- ✓ Different institutions collect information about the same road crash using various techniques.
- ✓ There may or may not already be mechanisms in place to aggregate these data within or across sectors.
- ✓ Rarely will one person, or even one agency, be able to answer all the questions in this step.
- ✓ Your Working Stakeholder Group will help you execute the Situational Assessment—especially, this step.

Case Study • Assess Data Sources

Refer once again to the Boldonia Case Study.

Refer to the table titled Data Type Mapped to Source, System, and End–User. Review the table, then your instructor will ask you a few questions.

CASE STUDY DISCUSSION

ACTIVITY • Assess Data Sources

INSTRUCTIONS

1. In your home group, review the Key Sources of Road Traffic Injury Data table on page 26, Table 2.1 of the Manual.
2. Use this list of sources and sectors to begin to populate the table below (as best you can, based on your current point of view).
3. Finally, complete the Action Items list and document the tasks that must be executed to complete this assessment step in your jurisdiction or country.

Pages 26, Table 2.1

SOURCES AND SECTOR ANALYSIS

Source/Sector	Type of Data (Data Variable)	Data Format	Observations

ACTION ITEMS FOR ASSESSING DATA SOURCES AND SYSTEMS

ITEM	BY WHOM	BY WHEN

DATA SOURCES DISCUSSION

Assess Data Systems

The objectives are to understand:

1.

2.

3.

4.

ACTIVITY • Assess Data Systems

INSTRUCTIONS

1. In your home group, read the Checklist to Assess Data Systems on page 28, Box 2.3 of the Manual.
2. Discuss these questions with your group.
3. Determine what needs to happen to complete this checklist and fully assess each data system. Populate your Action Item list (on previous page).

Page 28, Box 2.3

DATA SYSTEMS DISCUSSION

Assess Data Quality

Page 29, Box 2.4

See your Manual.

Your facilitator will lead a discussion. If you discover any Action Items for yourself during this discussion, record them on the following page.

DATA QUALITY DISCUSSION

CASE STUDY

Review the Data Sources, System and Quality • Step 2 section of the Case Study. Be prepared to discuss the following questions.

? **What did the Boldonian team do to assess data quality?**

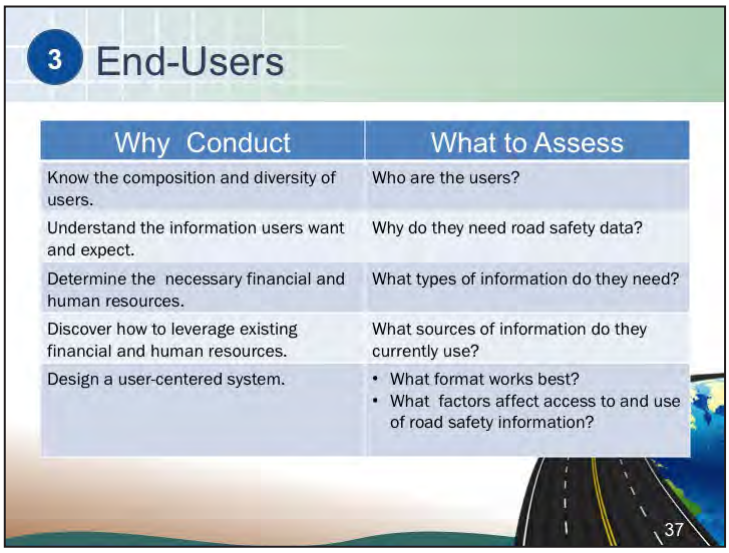
? **What did the Boldonian team discover after their test of data quality?**

? **What does the Boldonian team need to do to improve data quality?**

ACTION ITEMS FOR ASSESSING DATA QUALITY

ITEM	BY WHOM	BY WHEN

Step Three • Assess End Users



ACTIVITY • Assess End User's Needs

INSTRUCTIONS

1. Refer to the list on pages 39–40 in the Data Systems Manual.
2. Using this list, brainstorm your plan to gather information about end user's needs.
   - Document Action Items on the next page.
3. Be prepared to share and discuss your plans.

Pages 39 and 40

END USER DISCUSSION

ACTION ITEMS FOR ASSESSING END USER NEEDS

ITEM	BY WHOM	BY WHEN

Step Four • Analyze the Environment

Page 40, Box 2.4

ACTIVITY • Analyze the Environment

INSTRUCTIONS

1. Work in your home group.
2. Read and discuss the questions in Box 2.7 on the bottom of page 40 in the Data Systems Manual.
3. Complete the Action Items list on the next page.
4. Prepare to discuss the activity with the class.

ANALYZE THE ENVIRONMENT DISCUSSION

Boldonia Case Study

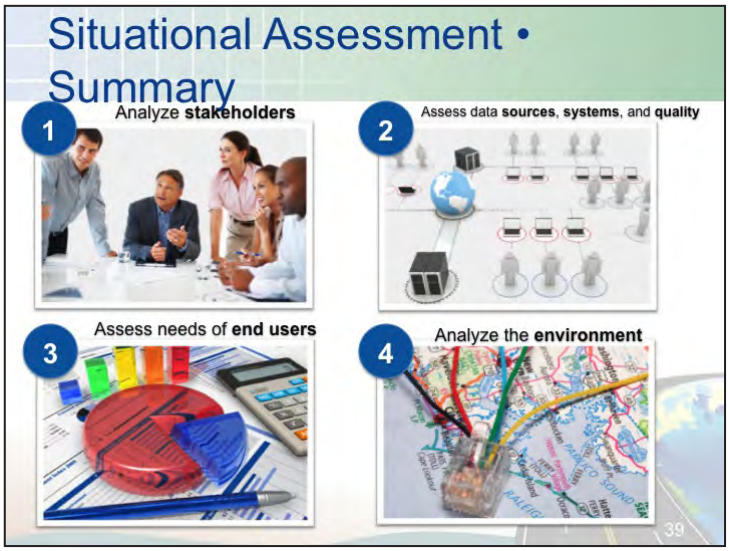
INSTRUCTIONS

1. Work in your home group.
2. Read the full Boldonian case study.
3. Using the case study as an example—and thinking about your own Situational Assessment—compare the case to your own case. What's different, what is the same?
   - Go back to your Action Items in your Workbook. Is there anything you would like to add?

ACTION ITEMS FOR ASSESSING DATA QUALITY

ITEM	BY WHOM	BY WHEN

Lesson Summary



- ✓ Data systems that can accurately count injuries and fatalities, reliably provide information to identify road–users at risk, and identify hazardous locations require an investment of funds, resources, and time.
- ✓ It may take years to build this kind of system.
- ✓ Through your discussions in the workshop, you should have a better idea of what your situation will require.
- ✓ Remember to set your goals realistically.
- ✓ You may have discovered that there are only bits and pieces of a data available and no real system in place.
- ✓ In this case, you can develop an intermediate plan based on your list of Action Items derived throughout this workshop.
- ✓ Work to lay the groundwork and convene a working stakeholder group to begin.

Summarize your Action Items/Take–Aways.

5

REVIEW AND VISION

Review and Vision

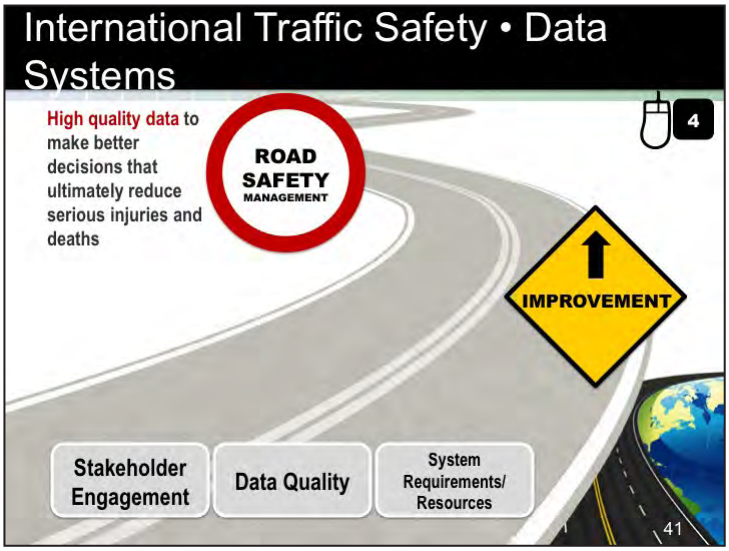
Mid–Workshop Review

Goal for Lesson 5

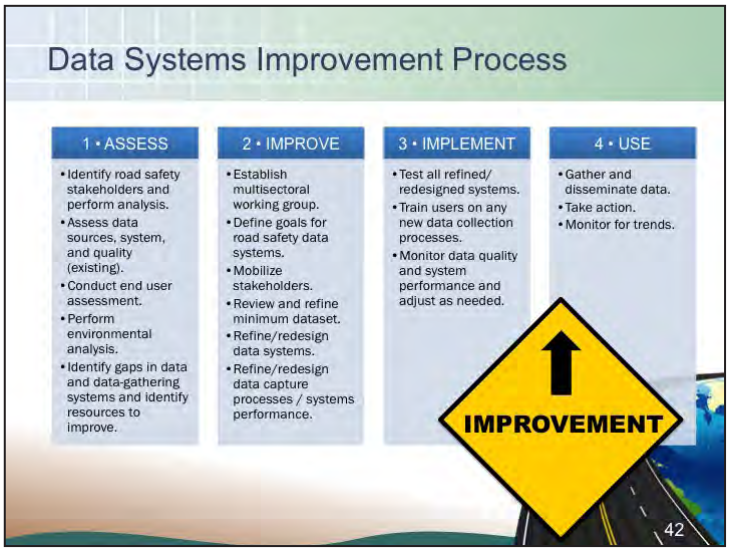
- ✓ To integrate knowledge from the first part of the workshop.
- ✓ To form a vision for the work ahead.

ACTIVITY • Review

DATA SYSTEMS OVERVIEW



DATA SYSTEMS OVERVIEW



INSTRUCTIONS

1. A colleague from another country wants to attend this workshop. Take a moment to capture 3–10 things you learned from this workshop that you will share with your colleague.
2. Take five minutes to write your thoughts below.

REVIEW DISCUSSION

Use the lines below to capture a summary list.

My major take–aways so far are:

ACTIVITY • Our Vision

INSTRUCTIONS

The goal of this activity is to co–create a vision, with regard to data systems improvement, for your agency with the intended messages you wish to communicate. The vision does not have to be complete. Rather, identify key messages that will help your agency inspire vision and maintain motivation for all involved stakeholders.

1. Review your notes and content.
2. Individually answer the questions below.
3. When complete, discuss your responses with your small group.
4. Document a collective vision (or list a few main ideas).
5. Share your vision with the larger group.

RELECTION

VISION ACTIVITY

Imagine your job in the next six months. Jot down words or phrases that describe the following:

? **What do you see? How does it look and feel?**

? **What does it look/feel like to your customers or end users?**

? **What does your agency provide? What's special about this?**

? **What does success look like?**

DISCUSS THE ACTIVITY

Notes

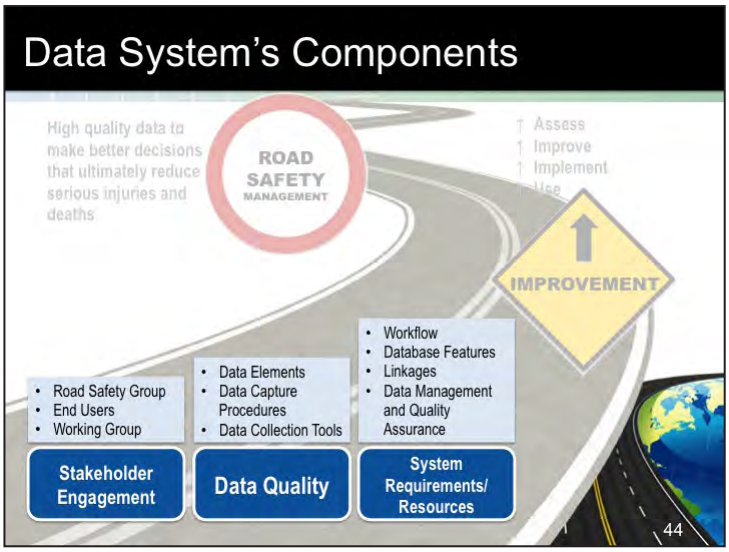
6

STRATEGIES FOR IMPROVEMENT

Strategies for Improvement

Overview

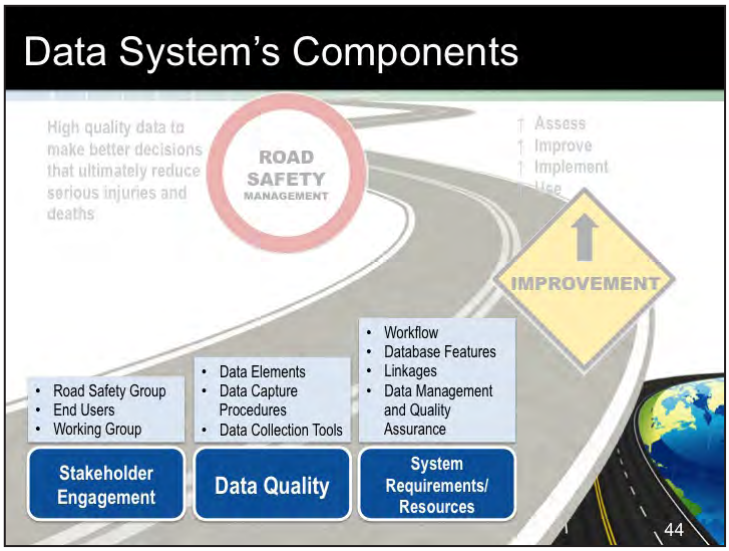
Component Overview



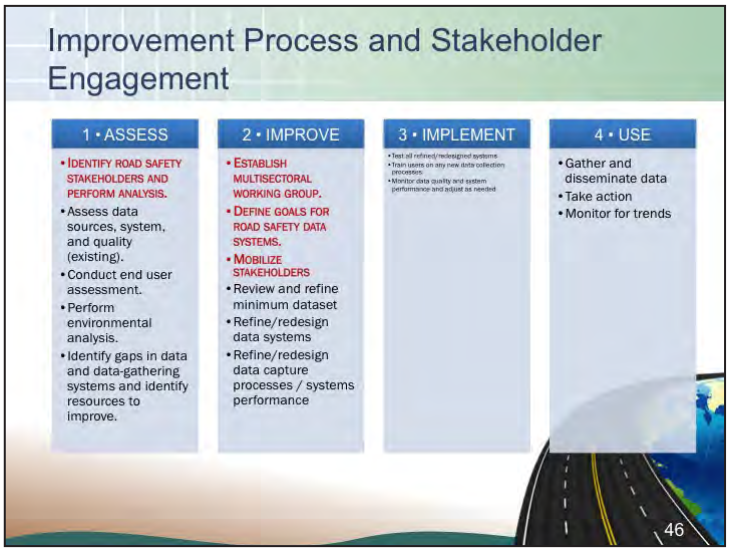
Discuss the following questions with a partner:

? **How are the Data Requirements/Resource sub components related? How do they influence one another?**

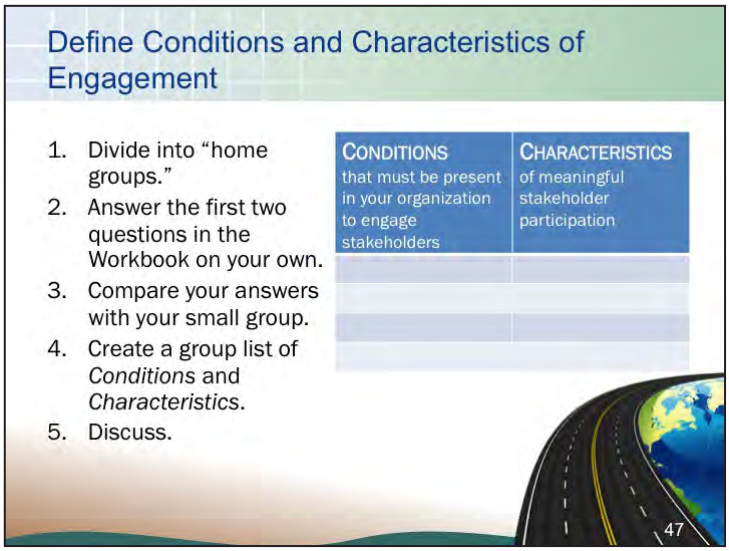
Stakeholder Engagement



STAKEHOLDER ENGAGEMENT AND THE IMPROVEMENT PROCESS



Gaining Stakeholder Engagement



ACTIVITY • Define Conditions and Characteristics of Engagement

INSTRUCTIONS

1. Answer the first two questions on your own. When prompted, share your answers with your small group.

? **Bring to mind a specific project where you or someone you worked with successfully brought the right people together to accomplish a goal. What conditions in your own organization or the general environment were present to enable the right people to show up, participate, and add value?**

? **Thinking about this same project, what things did you or someone else do that helped foster stakeholder contribution?**

? **Compare your responses with your home group. What's the same? What's different? What did you learn?**

2. In your small group, complete the table below.

MEANINGFUL STAKEHOLDER ENGAGEMENT

CONDITIONS TO CREATE	CHARACTERISTICS THAT ENGAGE

DISCUSS THE ACTIVITY

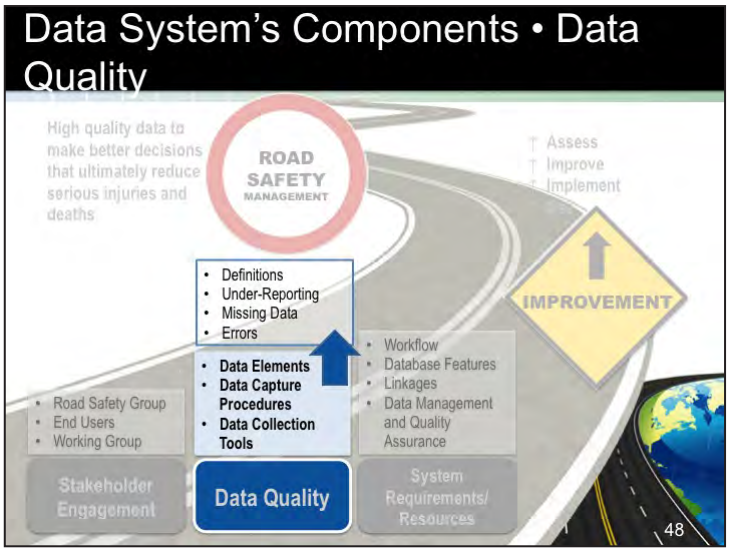
Tips for Working with Stakeholders

1. Engage stakeholders early in the process.
2. Listen. Ask how they want to talk to you. Consider appointing stakeholder managers.
3. Make sure there is two–way dialogue.
4. Find out how much influence they have with your target audiences.
5. Remember they may have a different agenda. Always define mutual objectives and highlight common goals.
6. Communicate appropriately, relevantly, and demonstrate appreciation.
7. Don't forget stakeholders may talk to each other more than to you. Keep your story straight and your offer transparent.
8. Don't treat stakeholder relationships as a onetime event—communication at the start of a project: keep them informed and involved throughout the project.
9. Allocate energy and attention to developing positive relationships—building trust–based relationships takes time, effort, and attention!

Stakeholder Engagement • My Take–Aways/Action Items

- ❒ . . . . . .
- ❒ . . . . . .
- ❒ . . . . . .
- ❒ . . . . . .
- ❒ . . . . . .
- ❒ . . . . . .
- ❒ . . . . . .

Data Quality



Factors that can compromise data quality are:

1. . . . . . .

. . . . . .

2. . . . . . .

. . . . . .

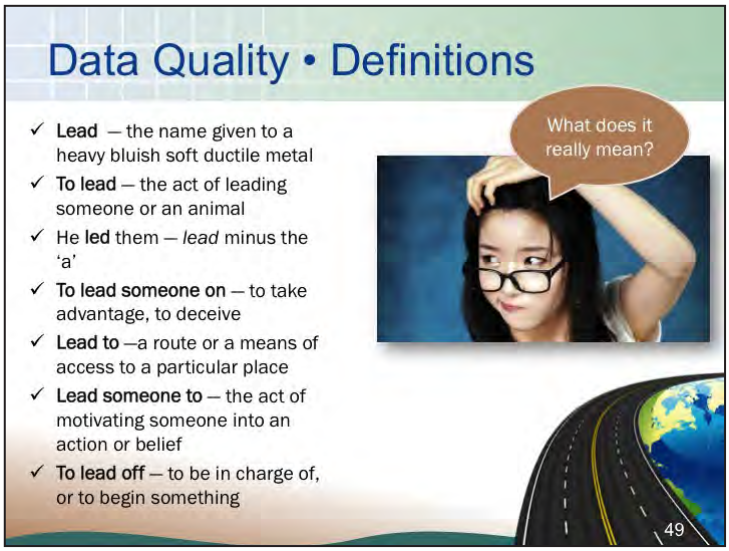
3. . . . . . .

. . . . . .

4. . . . . . .

. . . . . .

Definitions



Pages 30–33

ACTIVITY • Think About Data Definitions

INSTRUCTIONS

1. In your home group, look at the definitions of "road traffic crash/ accident" in the Manual on page 30 and "road traffic fatality" on page 31, and the table on page 33.
   - Review how you responded to the questions related to data definitions on the pre–workshop questionnaire.
2. Compare your country or jurisdiction's definitions with the Data System Manual's definitions. Then, answer the following questions with your home group.

? **What events are excluded by the definition of road traffic crash, and what kind of bias does this omission create?**

? **Has anyone estimated the number of crashes that are excluded from the data because of the definition?**

? **Are police required to judge injury severity?**

? **Does injury severity get assessed at the crash scene only, or through follow–up with the victim and health services?**

? **Are the definitions for injury severity straightforward enough for police officers to understand and apply them? If not, are adjustment factors applied so numbers can be compared?**

? **Do police receive training to determine injury severity?**

? **Has someone made comparisons with hospital data to evaluate the accuracy of the policy reported injury severity?**

? **Are the definitions used by the various sectors matched so that everyone understands the definitions the same way? If not, are adjustment factors applied so numbers can be compared?**

? **Is there an opportunity to create uniform understanding? How?**

DISCUSS THE ACTIVITY

Data Quality – Definitions • My Take–Aways/Action Items

- ❒ . . . . . .
- ❒ . . . . . .
- ❒ . . . . . .
- ❒ . . . . . .
- ❒ . . . . . .
- ❒ . . . . . .
- ❒ . . . . . .

Under–Reporting

There are several areas where under–reporting can happen.

1. Under–reporting in police data
2. In accurate reporting rates of road traffic deaths in vital statistics
3. Under–reporting of road traffic injuries in heath facility data

Pages 33–37

ACTIVITY • Think About Under–Reporting

INSTRUCTIONS

1. In your small group, refer to Manual pages 33–37 and your assigned sector.
   - Read the section that lists factors contributing to under–reporting in your sector.
   - Summarize below.
2. Next, discuss these factors with your small group.
   - Add your own examples, if you have them, of obstacles that have contributed to under–reporting in your sector.
   - Use the worksheet below to gather your ideas and present a summary to the larger group.

Pages 34–37

MANUAL SUMMARY • FACTORS THAT CONTRIBUTE TO UNDER–REPORTING

OBSTACLES THAT HAVE CONTRIBUTED TO UNDER–REPORTING

? **What are the factors that contribute to under–reporting in your sector?**

? **What obstacles contribute to under–reporting?**

? **How can these obstacles be overcome? What are some ideas for overcoming these obstacles?**

? **What linkages, resources, communicating, or training would help to alleviate under–reporting in your sector?**

DISCUSS THE ACTIVITY

Data Quality: Under–Reporting • My Take–Aways/Action Items

- ❒ . . . . . .
- ❒ . . . . . .
- ❒ . . . . . .
- ❒ . . . . . .
- ❒ . . . . . .
- ❒ . . . . . .
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Missing Data

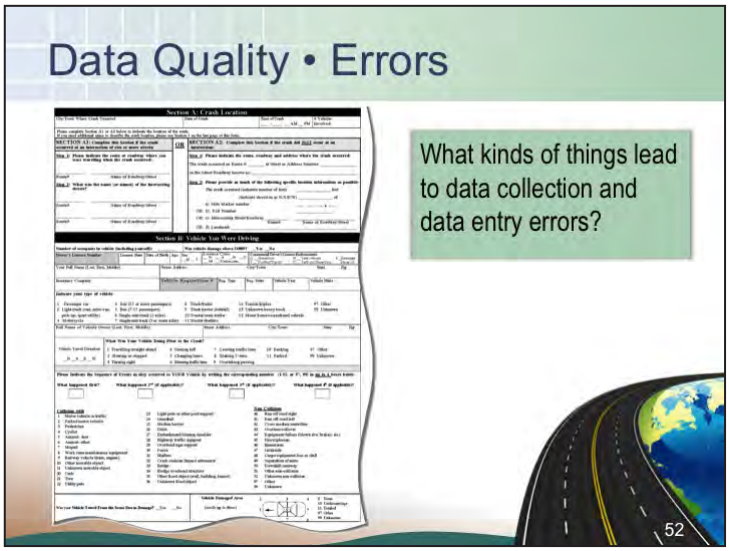
One lesson learned about missing data is:

. . . . . .

. . . . . .

. . . . . .

Errors

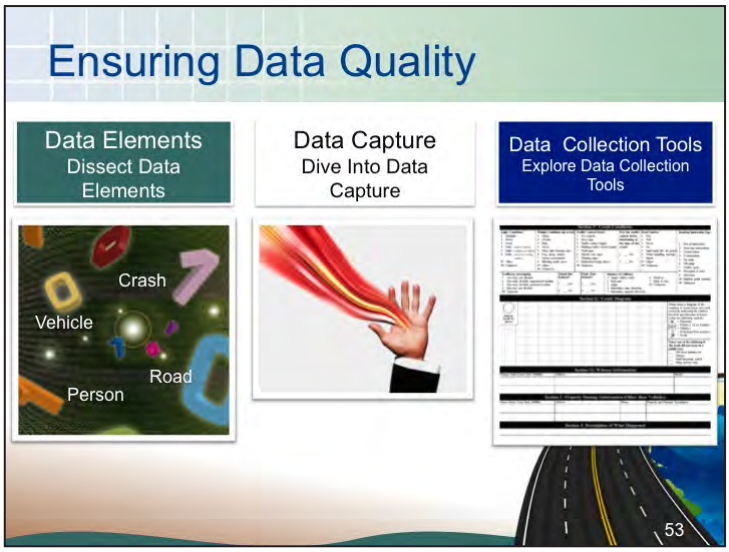


MEASUREMENT ERRORS

RESPONSE ERRORS

DATA PROCESSING ERRORS

Ensuring Data Quality



Data Elements

Select your system's **minimum data elements** based on what criteria?

1.

2.

3.

Pages 59 and 94–113

ACTIVITY • Dissect Data Elements

INSTRUCTIONS

1. In your home group, review the following:
   - The Data Systems Manual minimum data elements on pages 59, 94–113 and
   - Your pre–work Questionnaire on Traffic Safety Data in Your Jurisdiction—questions related to minimum data elements (Questions 15, 16, 17).
2. Next, as a group answer the questions below.

? **Identify the types of crashes that will be included in your database—injury only or property damage as well?**

? **Is your common dataset defined? What needs to happen to get a common dataset?**

? **What type of data is important but will not be gathered at the crash scene? What is its source/sector?**

DISCUSS THE ACTIVITY

Data Elements • My Take–Aways/Action Items

- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐

Data Capture Procedure

Data capture procedures are the processes used to collect information about the crash and transfer that information to a database.

Data capture procedures will vary by _____ and by _____.

Pages 81–82 and 26

ACTIVITY • Dive into Data Capture

INSTRUCTIONS

1. On your own, read both case studies on pages 81–82 of the Data Systems Manual—a centralized data extraction and entry and a data capture from multiple data sources.
2. With your home group, answer the following questions.

? **In your country or jurisdiction, does your traffic safety data collection system look more like the Ghanaian or the Peruvian case study? With respect to data capture processes, what are the similar characteristics? What's different?**

? **From what you know now, what sectors and sources do you imagine will contribute to the traffic safety data collection system? Use table 2.1 on page 26 of the Manual.**

DISCUSS THE ACTIVITY

Data Capture • My Take–Aways/Action Items

- ❒
- ❒
- ❒
- ❒
- ❒
- ❒
- ❒

Data Collection Tools

Road safety data collection tools range from simple, paper–based questionnaires to sophisticated, electronic mobile devices that can transfer data in real time.

The tools are best designed to capture all data variables according your country's/jurisdiction's _____.

ACTIVITY • Explore Data Collection Tools

Pages 63–64

INSTRUCTIONS

1. On your own, read the Improve Data Collection Tools section

on pages 63–64 in the Data Systems Manual and then answer the questions below. When complete, discuss your responses in your home group.

? **What kinds of data collection tools are available in your sector? Are they paper–based or electronic?**

? **What tools work best? Why?**

? **How do data collection tools vary by source or sector? Can any of these tools be shared?**

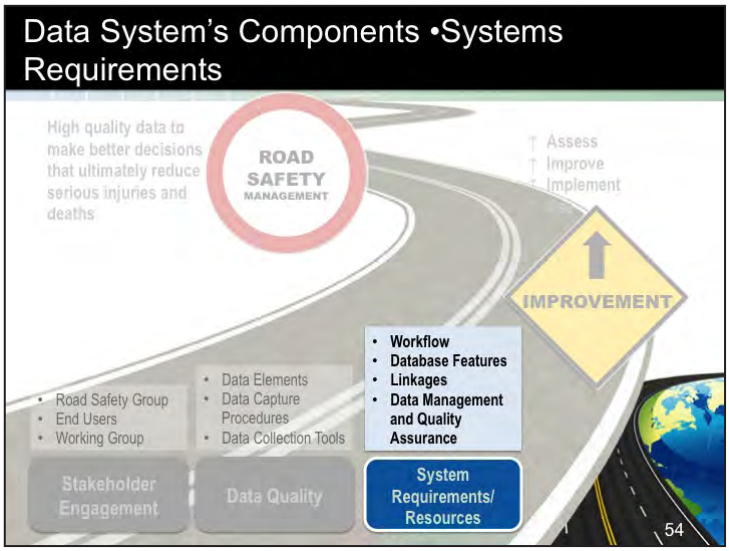
? **What do you think is important about the data collection tools that are used or will be used? Describe the ideal characteristics.**

DISCUSS THE ACTIVITY

Data Collection Tools • My Take–Aways/Action Items

- ❒
- ❒
- ❒
- ❒
- ❒
- ❒
- ❒

System Requirements and Resources

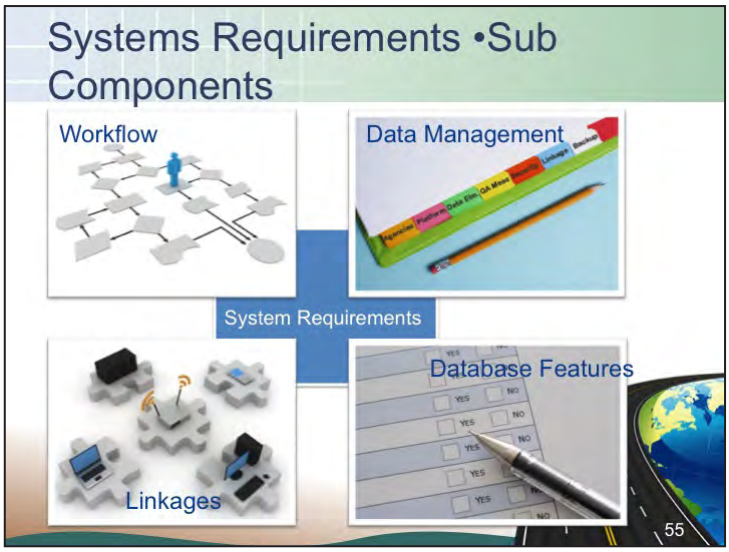


COSTS

TRAINING AND CONSULTING

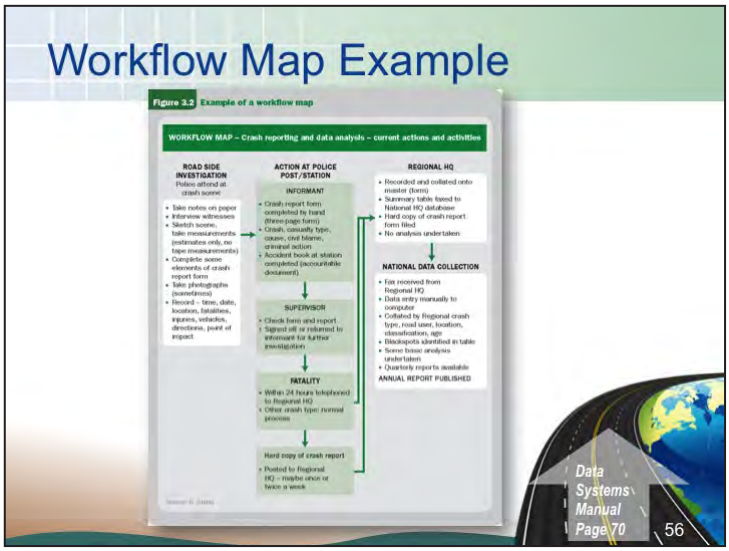
STAFFING AND ROLES

Systems Requirements and Sub Components



Page 70

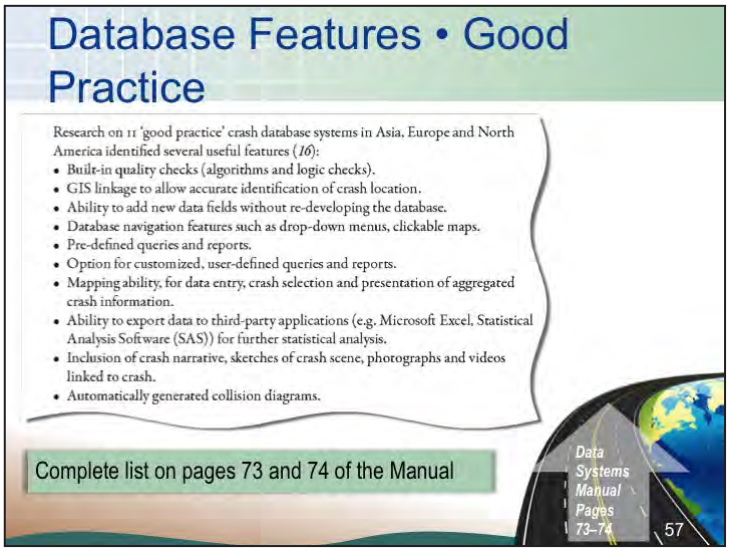
Workflow



WORKFLOW DISCUSSION

Page 73

Database Features



DATABASE FEATURES DISCUSSION

Linkages

For linkages to add _____ to the data quality, they must be accurate, up–to–date, and collected in a stable system and accessible format.

Linking _____ and other data sources is often a way to improve data quality, however, it may not be the best place to begin your data systems improvement project.

Focus on a strategy for _____ among the participating sectors.

Page 83

Data System Considerations

See your Manual. Address these questions after completing the Situational Assessment.

DATA SYSTEMS CONSIDERATIONS

Page 76

Data Management and Quality Assurance (QA)

Your data management plan will document the intended workflow (process map) for data collection, entry, processing and analysis. This plan will also specify the roles, responsibilities, and involved agencies.

Page 76 of the Data Systems Manual lists a number of items to include in your data management plan.

- ✓ Include _____ procedures.
- ✓ Consult an IT expert to establish _____ protocol and security mechanisms.
- ✓ Plan for and allocate resources for _____.
- ✓ Plan for and execute regular _____ checks such as random checks for data completeness and accuracy.
- ✓ Conduct in–depth _____to ensure the data system is meeting its goals, that data are timely, accurate and useful,

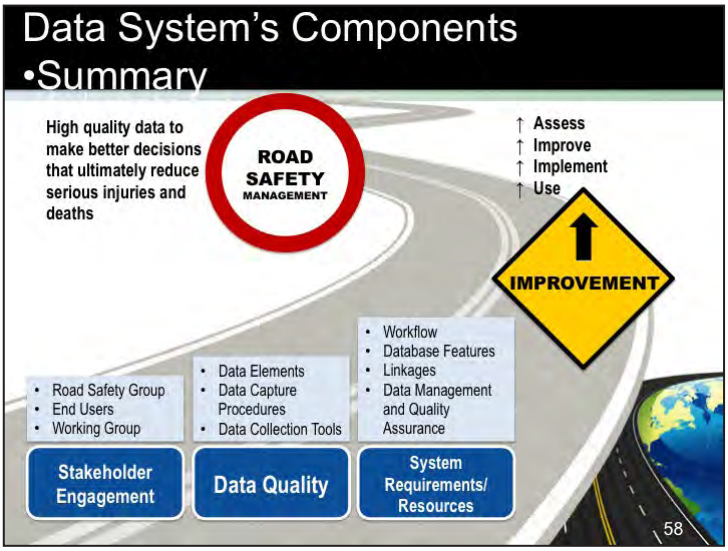
and that data outputs can be effectively used to improve the road safety.

✓ Conduct your first validation about _____months after systems implementation. Then, in one year. Validate under–reporting every _____ years.

DATA MANAGEMENT AND QA DISCUSSION

Lesson Summary

Take a few moments right now to review your Take–Aways and Action Items from this lesson. Start thinking about how you will prioritize the work that lies ahead!



Notes

7

IMPROVING DATA SYSTEM

Improving the Data System

To Monitor Road Safety: Putting It All Together

ACTIVITY • Boldonia Case Study

INSTRUCTIONS

1. Re–read the Boldonia case study.
2. Answer and discuss the questions below with your small group.

1. What is Boldonia's ultimate target?

2. What improvement strategies will help Boldonia's data system generate the most reliable outputs? Outline several strategies and list the main steps you need to see the strategy through.

3. List potential safety performance indicators that the data system must track.

4. What kind effort will be needed and who has to put forth the effort for the Ministry of Transport to obtain the data they need?

Pages 94-113

5. Presuming Boldonia will use all of the minimum data elements, review the minimum data elements in the Manual and determine if you have the data elements necessary to obtain the information that the Ministry of transport wants? Are they enough or does the data system require additional elements?

6. What initial safety performance indicators and process indicators do you want the data system to capture?

7. If you are able to generate quality data on safety performance indicators and process indicators (outputs), how does this data contribute to road safety management?

8. What kind of resource allocation and planning will you need to meet your targets?

CASE STUDY DISCUSSION

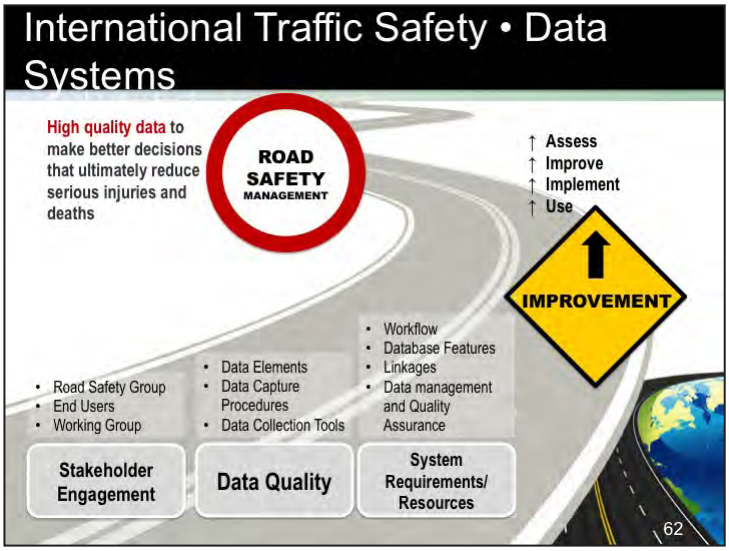
Notes

8

WHAT'S NEXT

What's Next?

Overview



ACTIVITY • Summary

INSTRUCTIONS

You'll have about 10 minutes to work with your home group to create a summary of what you learned and will take with you.

FINAL SUMMARY DISCUSSION

What top three things will you walk away with?

Notes

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