

TEXAS Department of State Health Services

"Racing to Beat the Clock"

Texas-Sized Issues Associated with the Transportation of Select Agents from Rural Hospitals to Reference Laboratories

Alberta Wang

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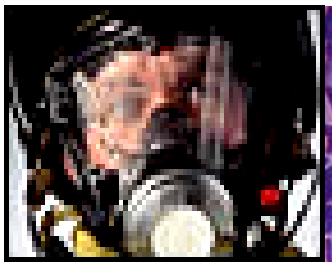
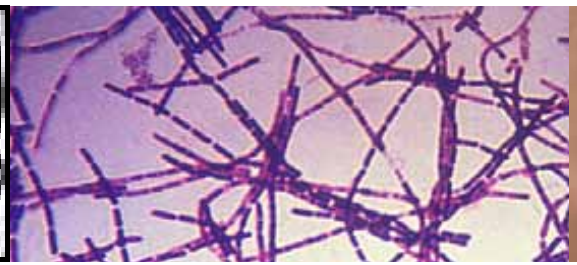
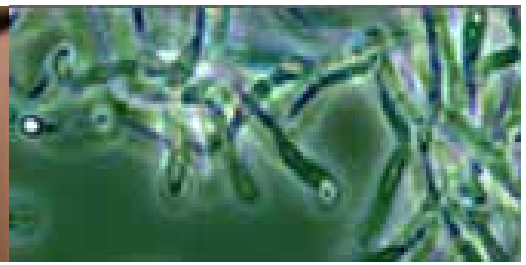
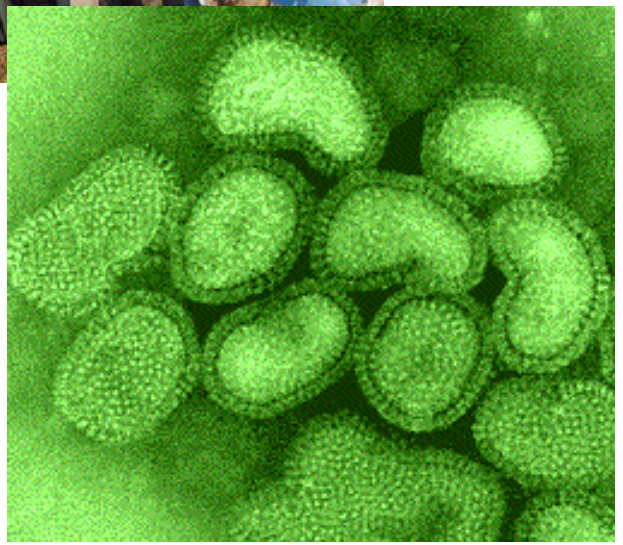





INTRODUCTION



Background

- Emerging infectious diseases
- Biological terrorism
  - History of biological warfare
  - Terrorist attacks of September 11, 2001
  - Anthrax spores released October 12, 2001
- Chemical terrorism
  - History of chemical warfare
  - Characteristics of chemical weapons

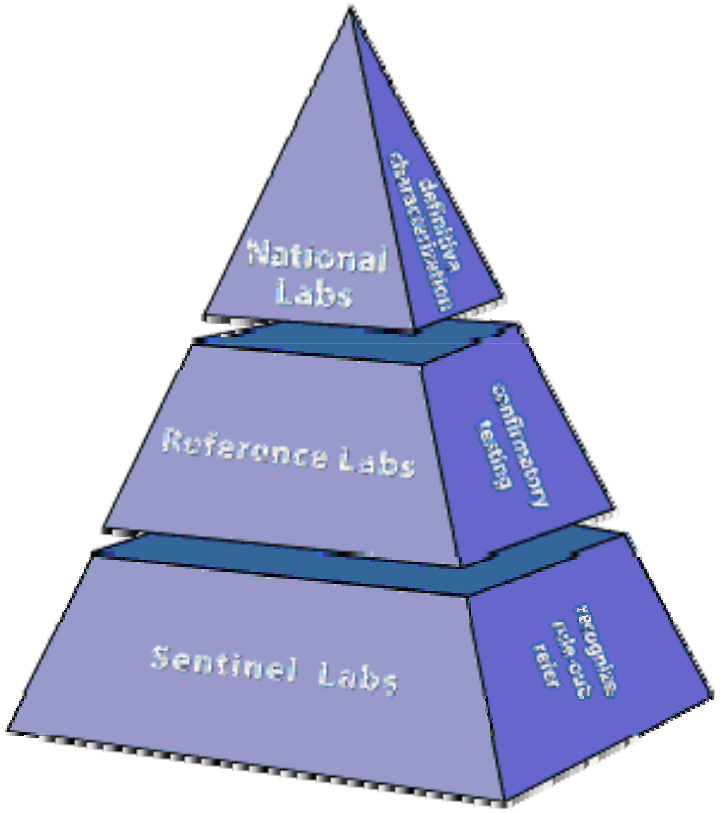
Laboratory Response Network

- Established in 1999 by the CDC
- Founding partners: FBI, APHL, CDC
- Two laboratory network divisions
  - Biological terrorism
  - Chemical terrorism

LRN
LABORATORY RESPONSE NETWORK
PARTNERS IN PREPAREDNESS

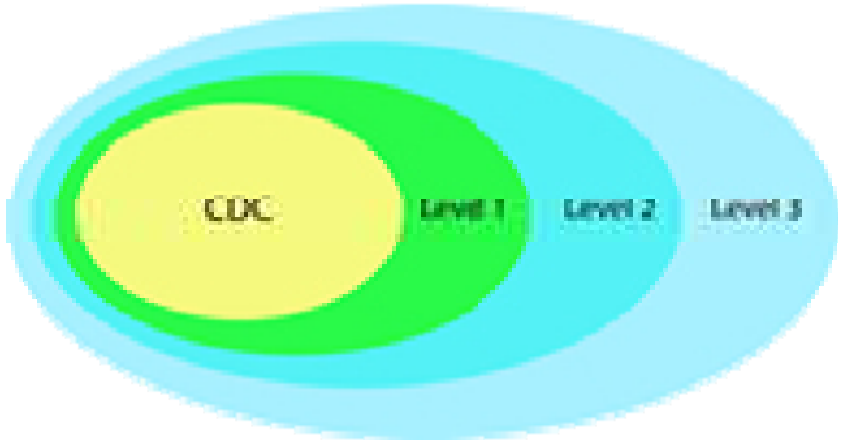
Network for Biological Terrorism

- Sentinel laboratories
- Reference laboratories
- National laboratories



Network for Chemical Terrorism

- Level 3
- Level 2
- Level 1



Emergency Preparedness

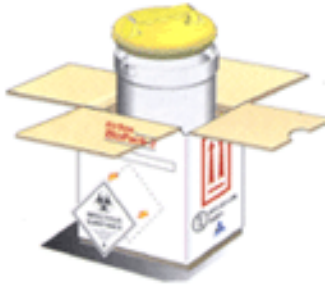
- Local Health Departments (LHDs)
- State Health Departments:
  1. Build relationships with the clinical community
  2. Enable rapid communication
  3. Increase lab connectivity and training
  4. Conduct proficiency testing

Shipping & Handling Agents

- Shipping & Handling:
  1. Collection process
  2. Initial processing before storage or analysis
  3. Transport

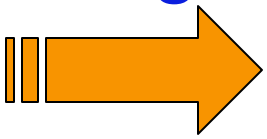
- Affects sample quality and test results

- Maintains viability of living organisms



CDC Performance Measure Standards

In an emergency, target times for shipping:

sentinel labs  reference labs

- Infectious biological agent = 60 minutes
- Hazardous chemical agent = 180 minutes
- Environmental samples = 60 minutes

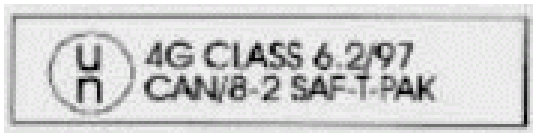
Transportation Regulations

International:

- International Air Transport Association (IATA)
- UN Committee of Experts (UNCOE)

Domestic:

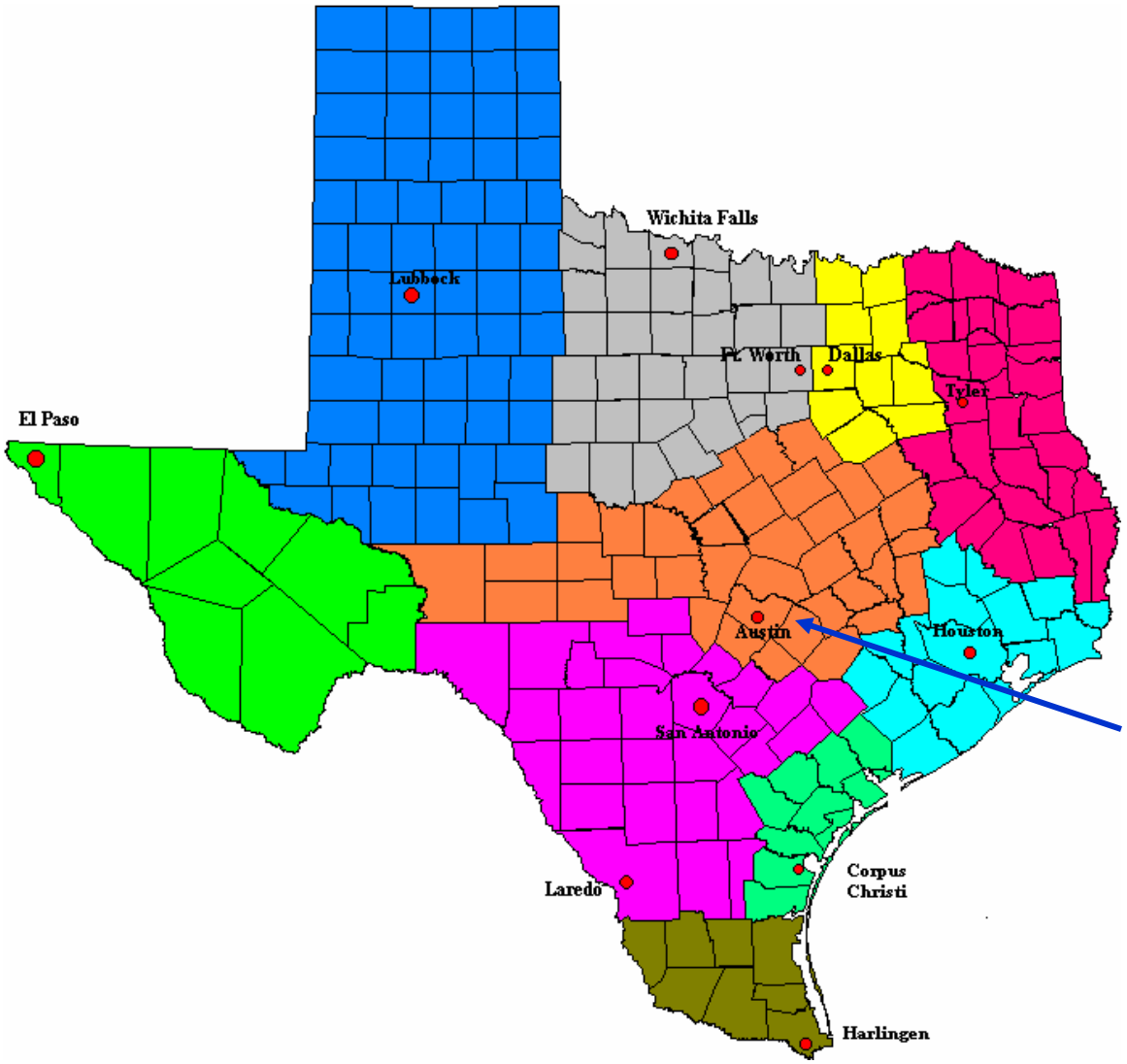
- U.S. Department of Transportation (DOT)
- Code of Federal Regulations (CFR)
- Federal Aviation Authority (FAA)



Texas Sized Problem

- Large rural areas in the south and west
- Rural populations:
  - Underestimate possibility of terrorist attack
  - Lack dependable transportation
  - Need laboratory personnel training
- Metropolitan areas delivery times <2 hours
- Rural areas delivery times 5+ hours

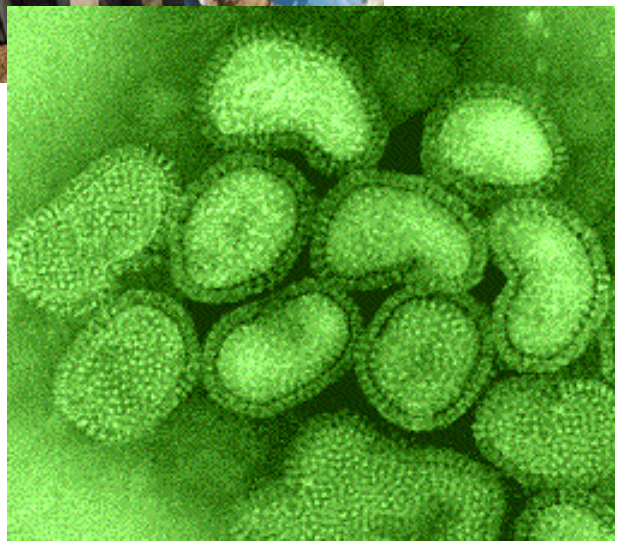
Texas LRN

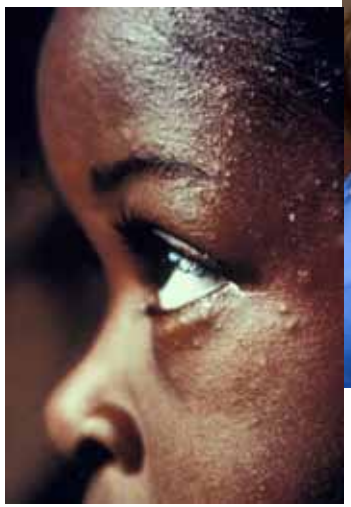

Wichita Falls
Lubbock
Ft. Worth
Dallas
Tyler
El Paso
Austin
Houston
San Antonio
Laredo
Corpus Christi
Harlingen
DSHS

Purpose

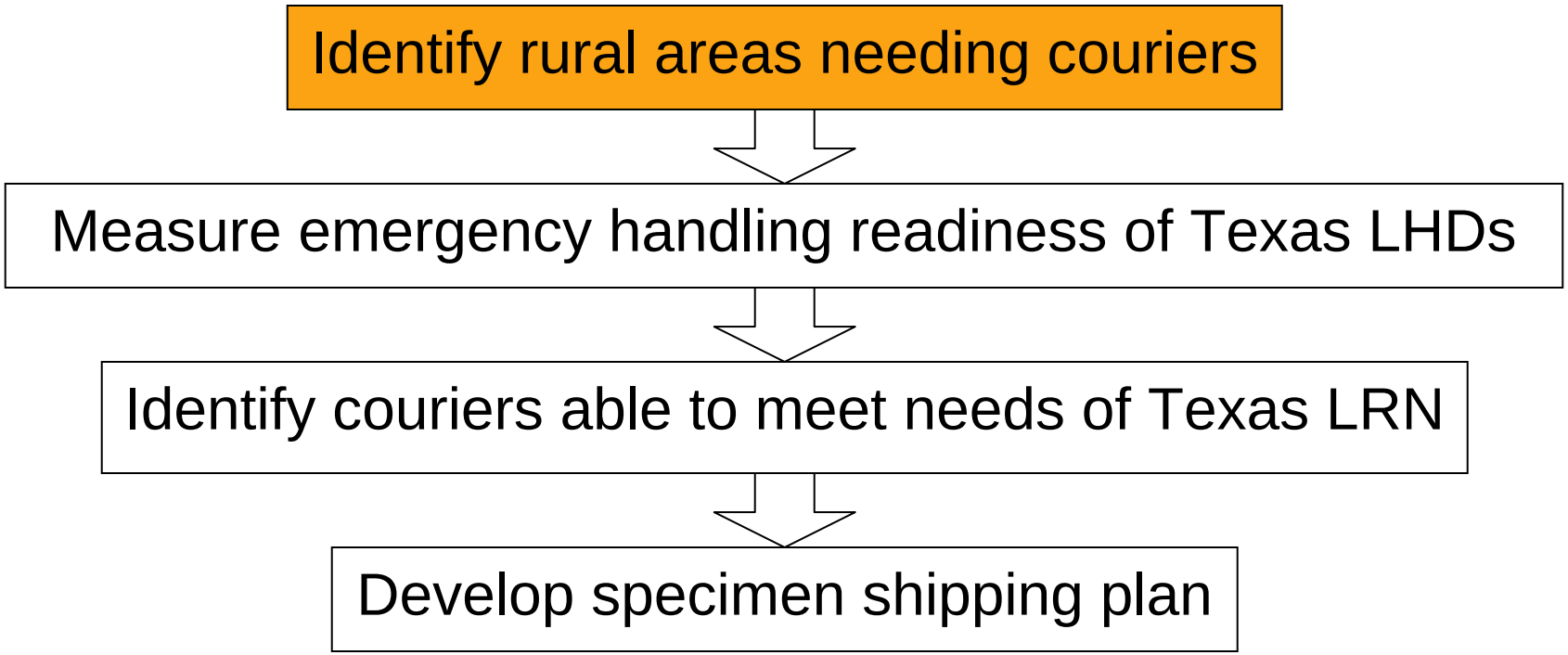
- Measure Texas LHDs' emergency shipping and handling readiness
- Identify commercial courier services that can meet the needs of the Texas LRN
- Develop a specimen shipping plan for the Texas LRN laboratories to submit suspect agents to DSHS following CDC performance measure standards.

METHODS





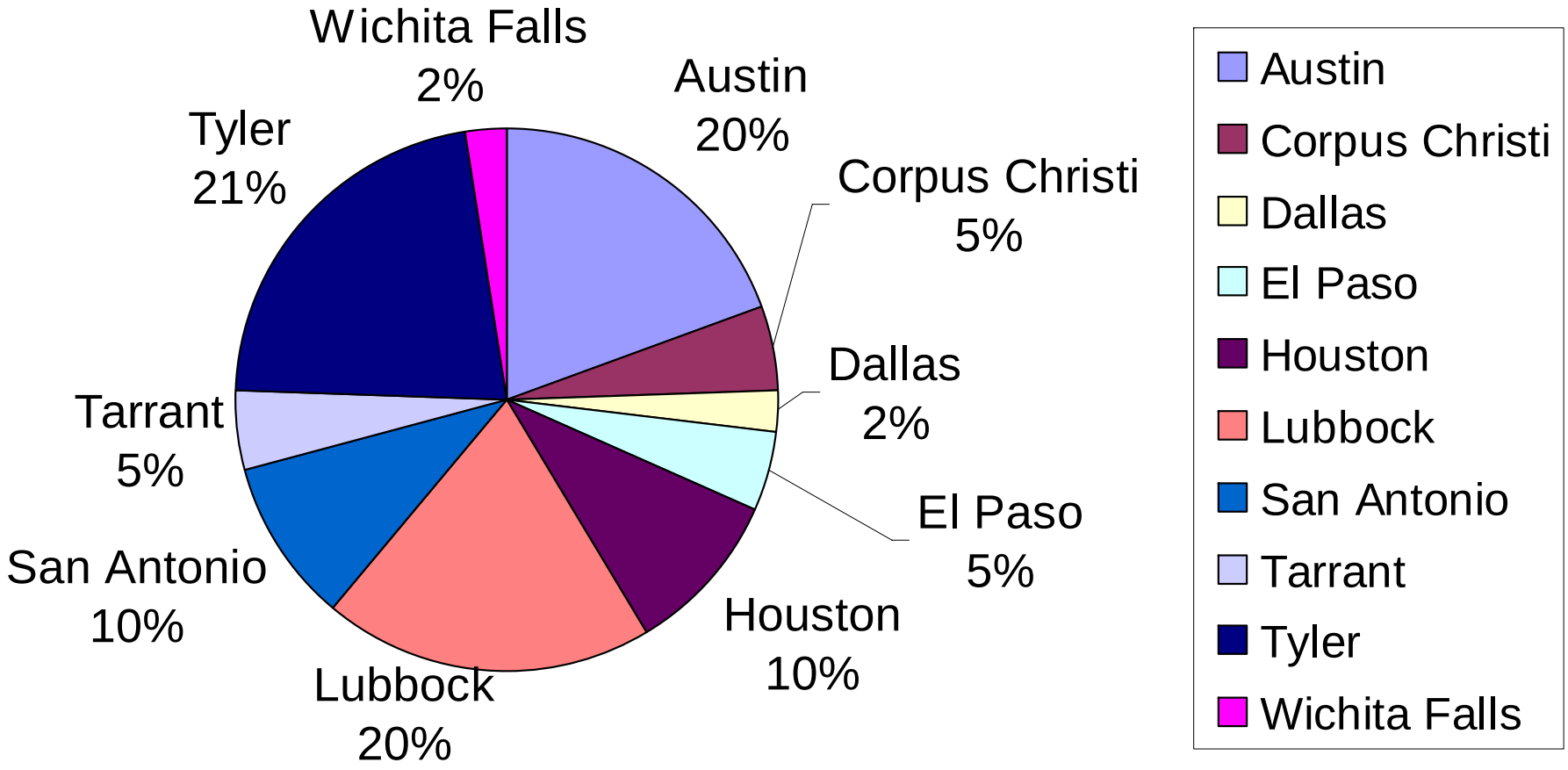
Methods


Identify rural areas needing couriers
Measure emergency handling readiness of Texas LHDs
Identify couriers able to meet needs of Texas LRN
Develop specimen shipping plan

Identify Rural Areas Needing Couriers

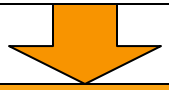
- Surveyed 80 rural hospital laboratories
  - Public Health Intern - Taylor Johnson
  - 42 cannot meet CDC performance measures
- Factors limiting performance:
  - Lack of handling training – 27%
  - Lack of courier service or distance – 73%
- Identified rural Texas areas needing couriers

Distribution of Rural Texas Laboratories Unable to Meet CDC Performance Measure Standards by LRN Region



Methods

Identify rural areas needing couriers



Measure emergency handling readiness of Texas LHDs

Methodology

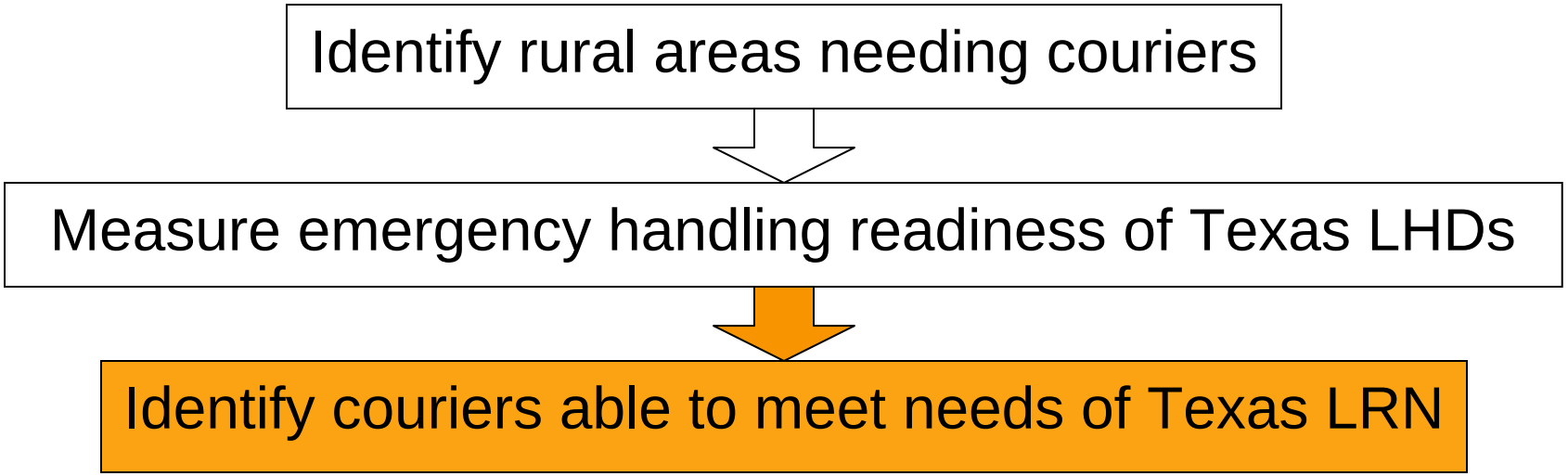
- Create survey for Texas LHDs
  - Target laboratory or bioterrorism directors
  - Draft questions

- Administer survey
  - Call all 65 Texas LHDs
  - Follow up on calls

Texas LHD Survey Questions

- Mode(s) of transportation currently used to ship suspect agents to reference labs?
- Emergency shipping and handling protocol?
- If so, what mode(s) of emergency shipping and handling were planned?

Methods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Identify couriers able to meet needs of Texas LRN

Identify Qualified Couriers

1. Three criteria
   - Service area includes Texas
   - Transport medical and hazardous materials
   - Hazmat certified
2. Research couriers
   - Preliminary research
   - Final comparison test
3. Select 2 best couriers

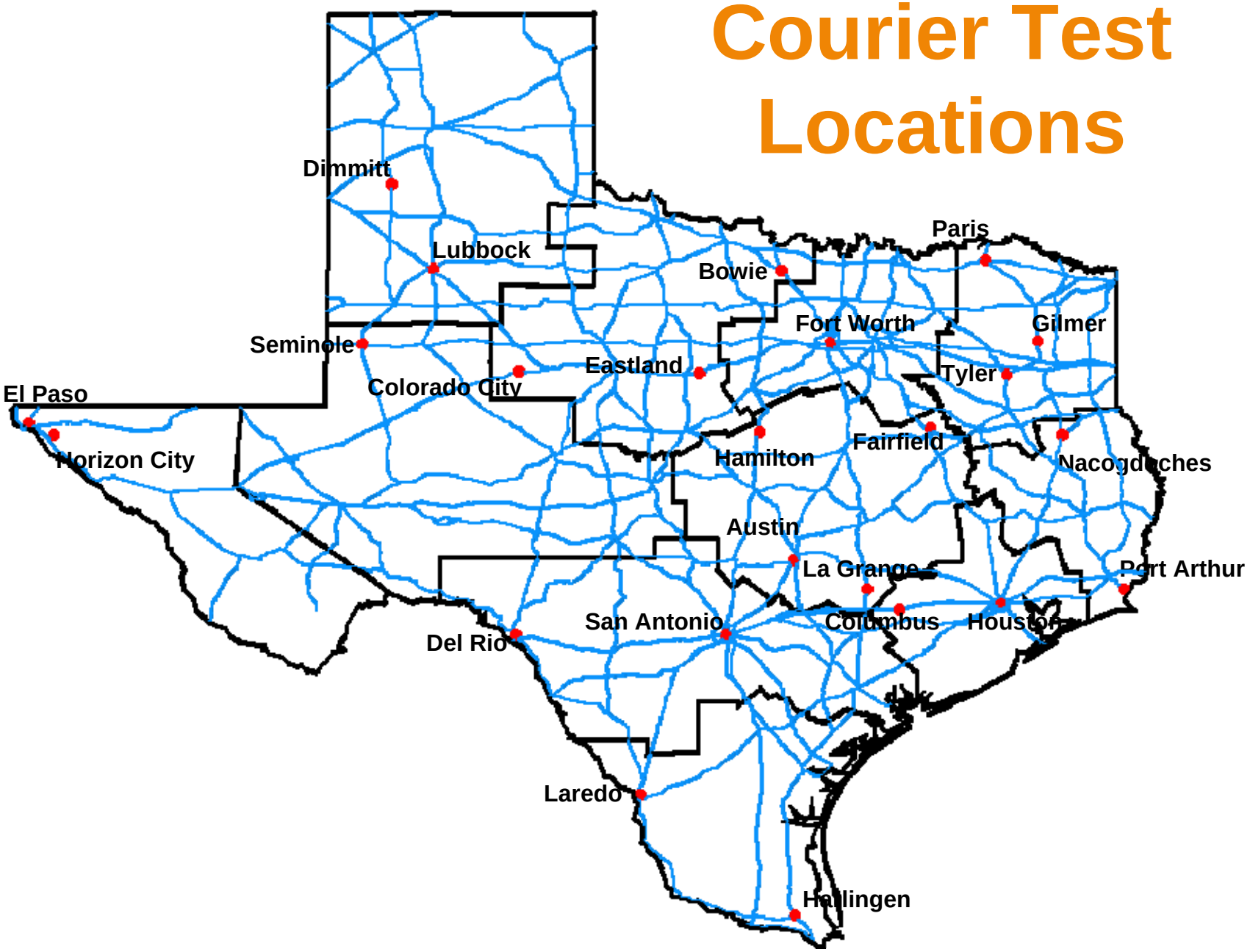
Preliminary Courier Research

- Identify 34 potential couriers
- Create survey questions
  - Hazmat certified?
  - Service area?
  - Availability? 24/7? Holidays?
  - Methods of transportation?
  - Tracking?
- Call all 34 couriers
- Reduce to 14 potential couriers

Choosing the Final Couriers

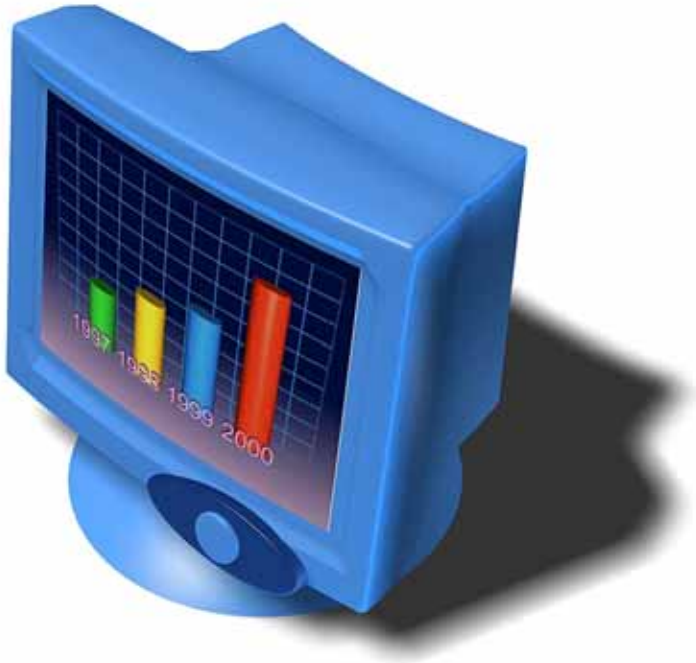
- Compare courier efficiencies:
  - Pickup times
  - Transport times
  - Cost

Courier Test Locations



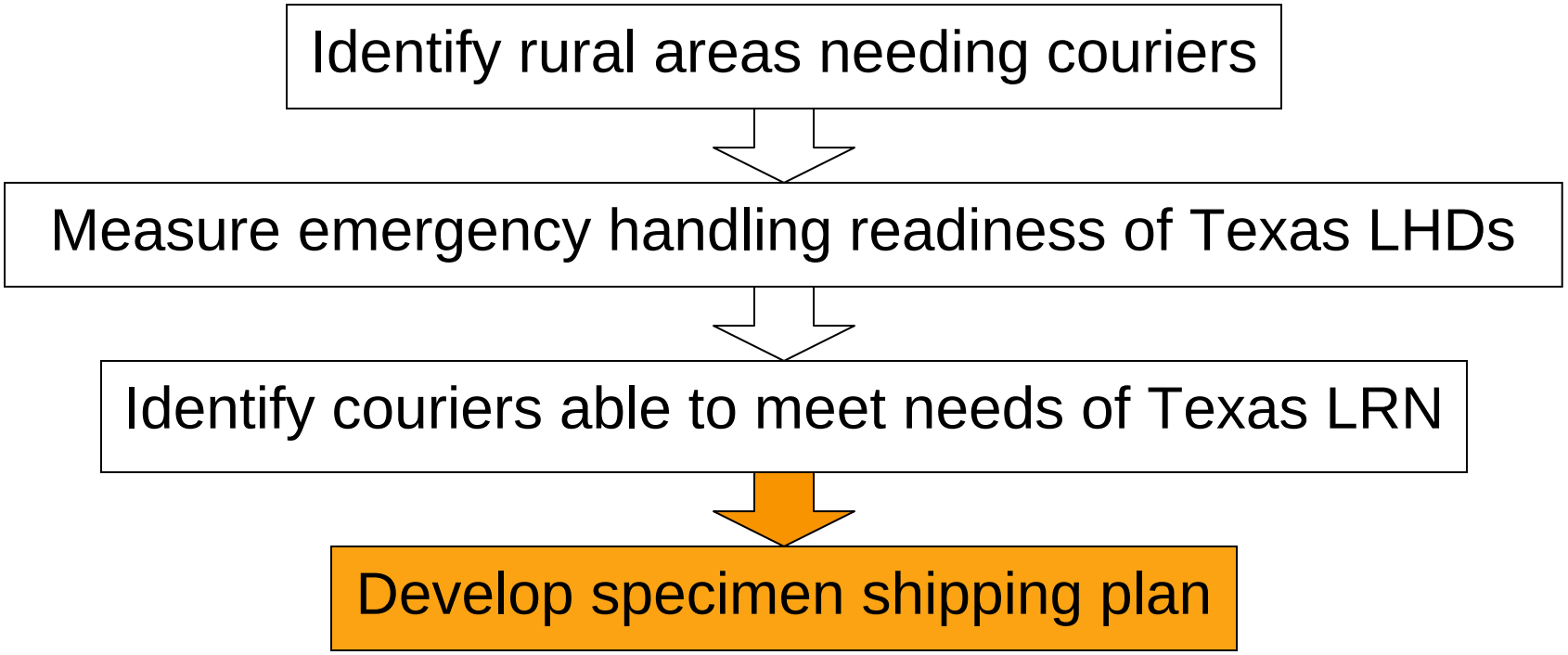
Data Collection and Analysis

- Excel
- Access
- ArcView



ArcView®

Methods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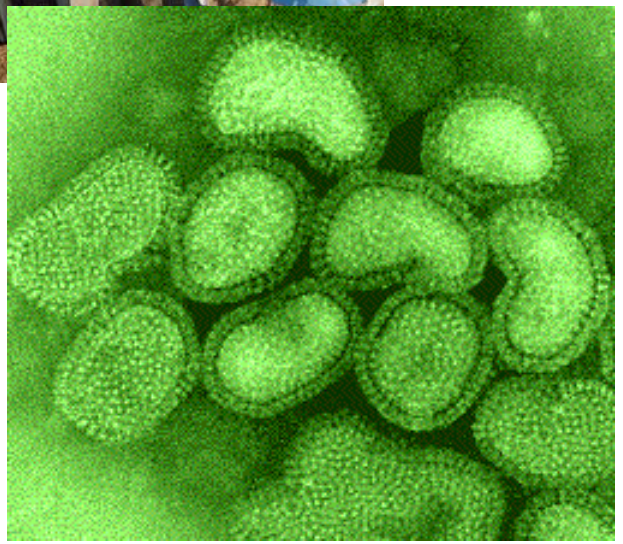
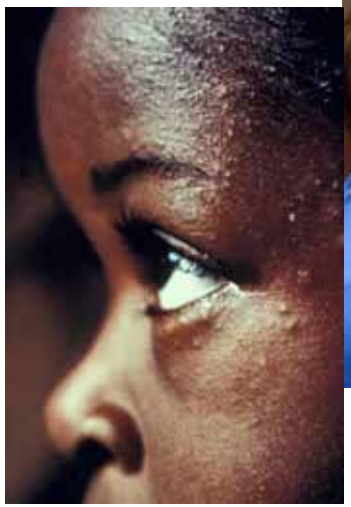
Develop Specimen Shipping Plan

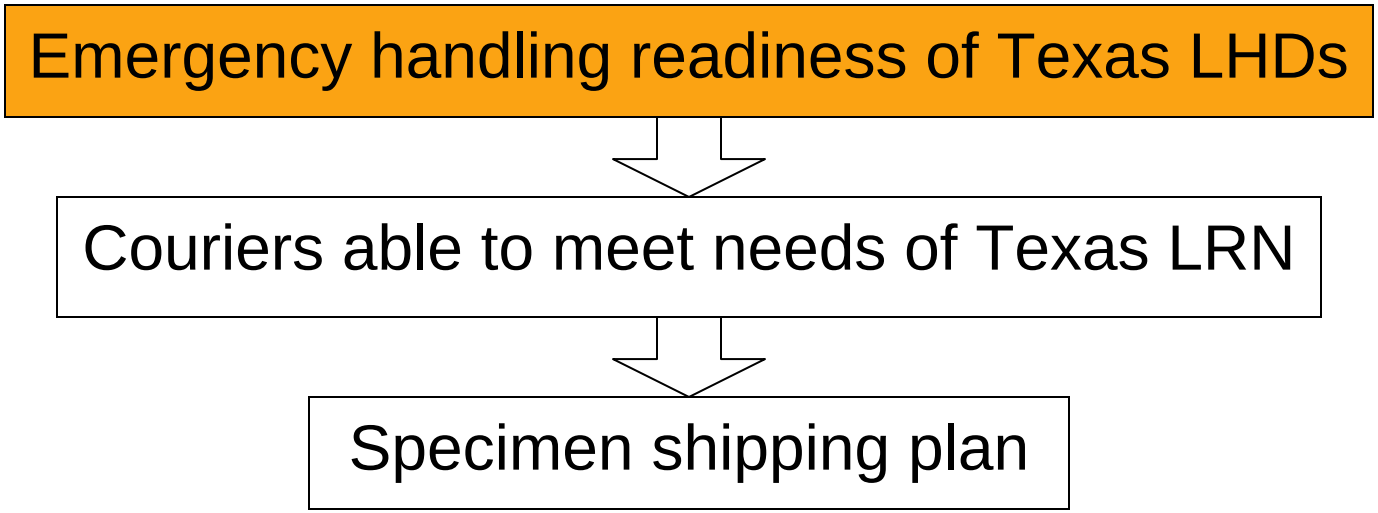
- Incorporate results from:
  - Rural hospital laboratory survey
  - Texas LHDs survey
  - Courier research
- Recommendations
  - CDC Performance Measures
  - Plan of action

RESULTS

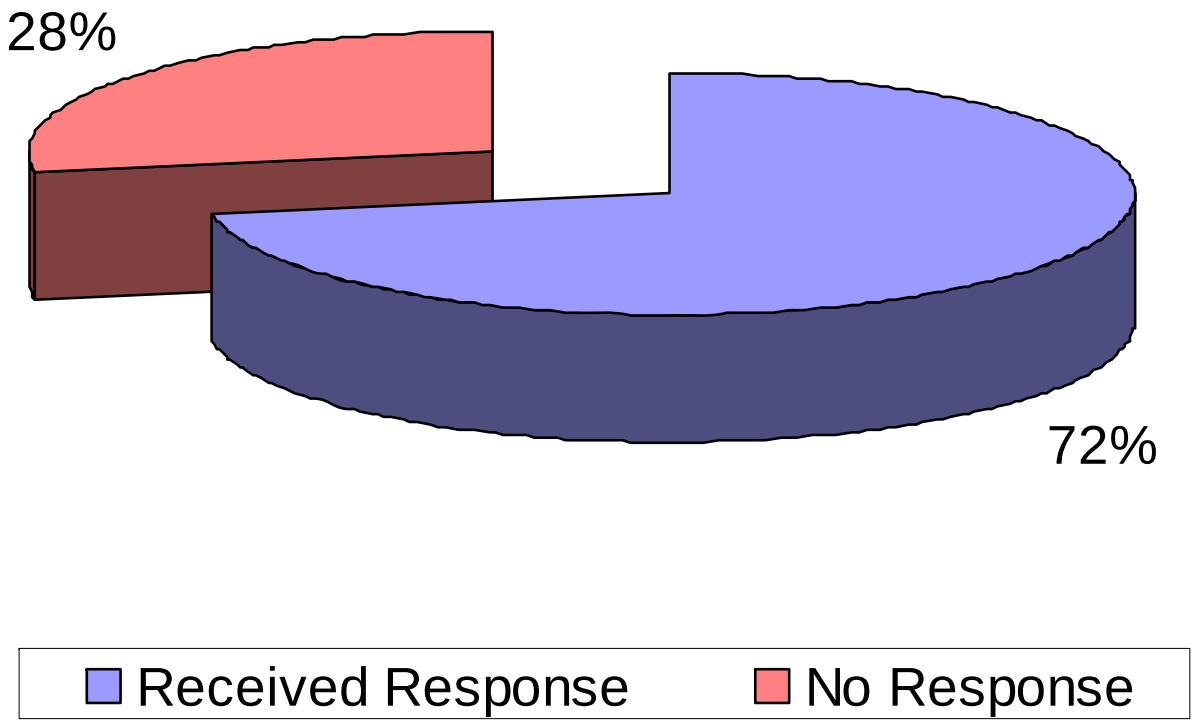




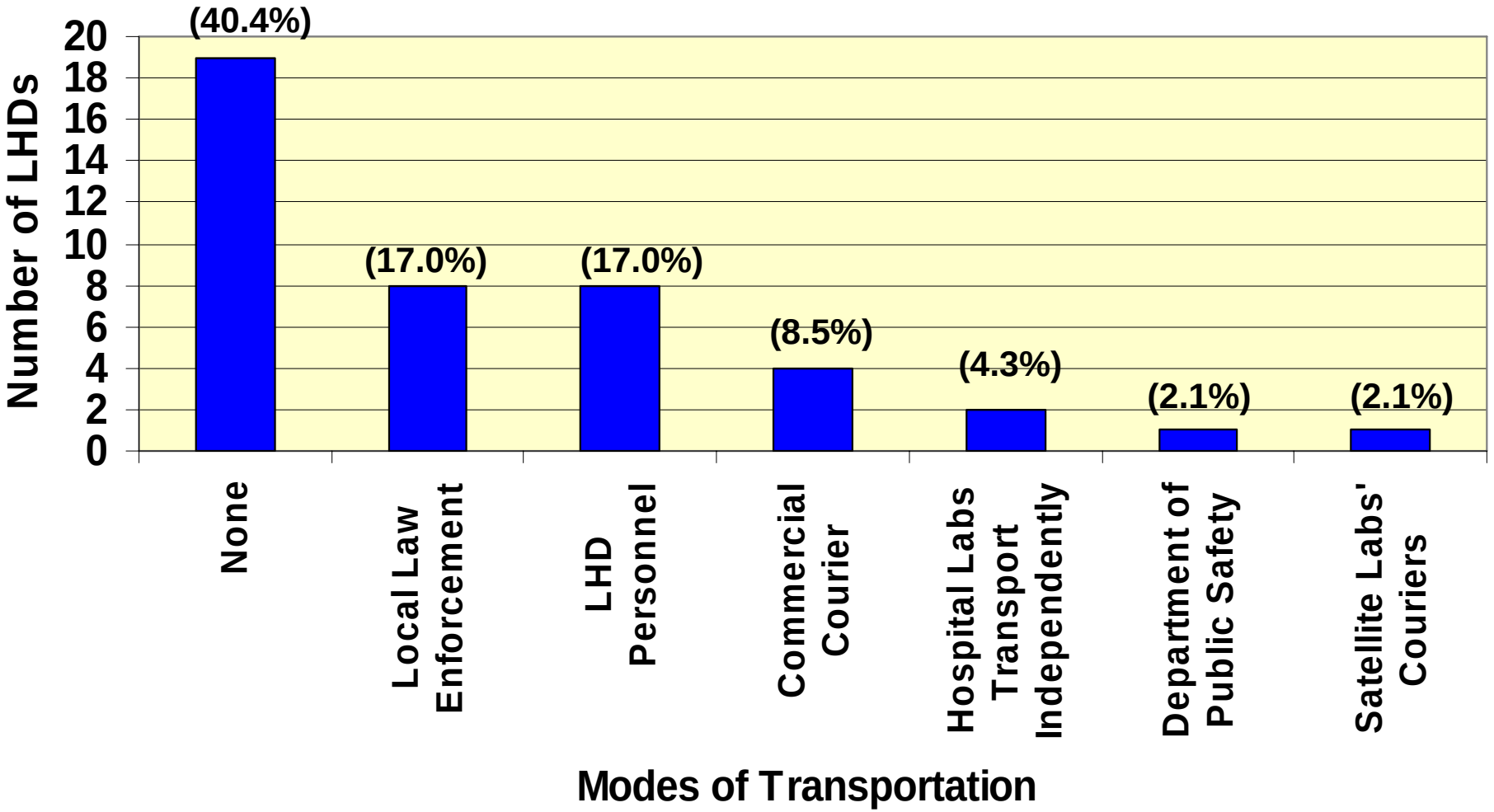
Results


Emergency handling readiness of Texas LHDs
Couriers able to meet needs of Texas LRN
Specimen shipping plan

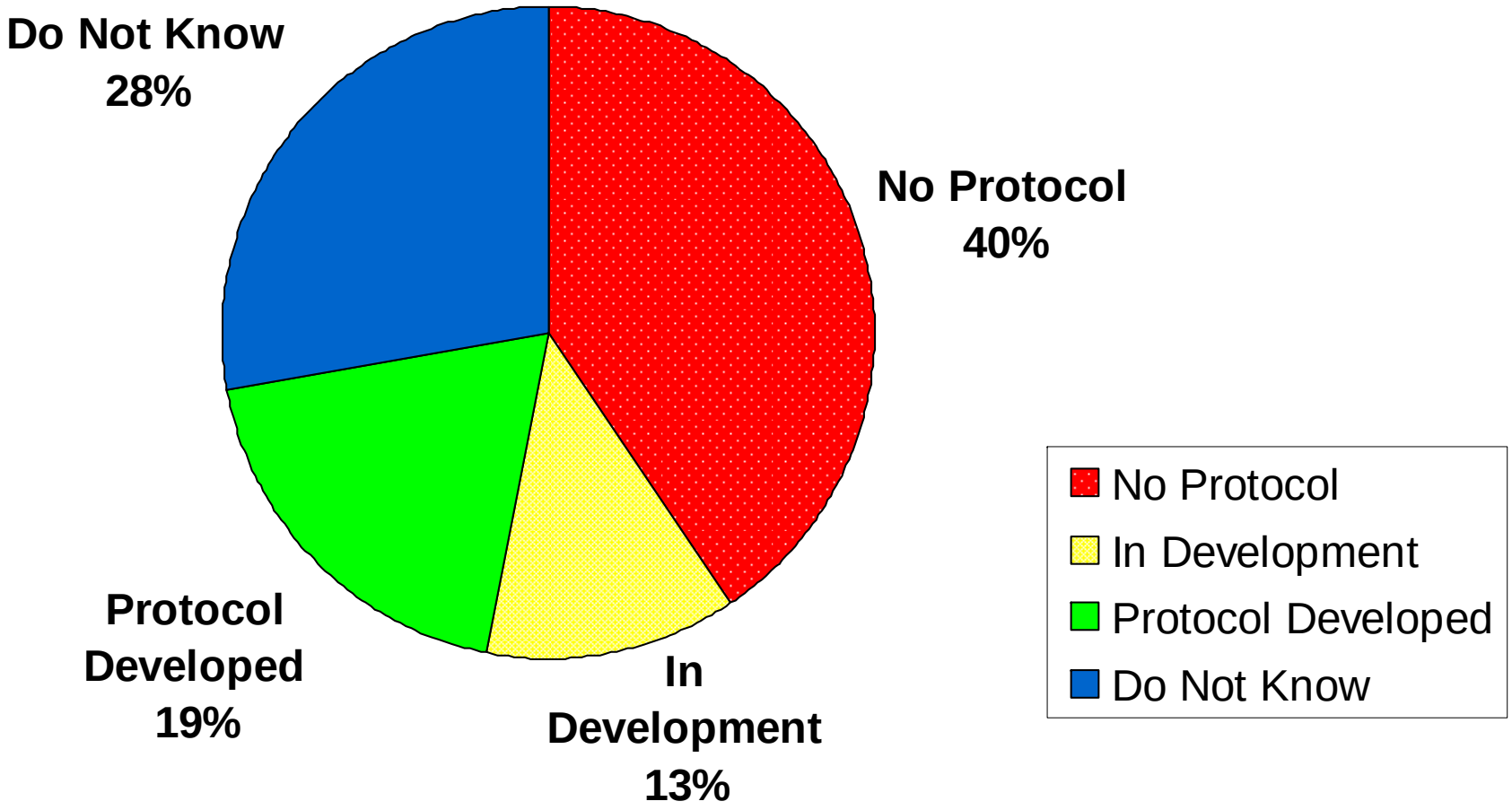
LHD Survey Response Rate



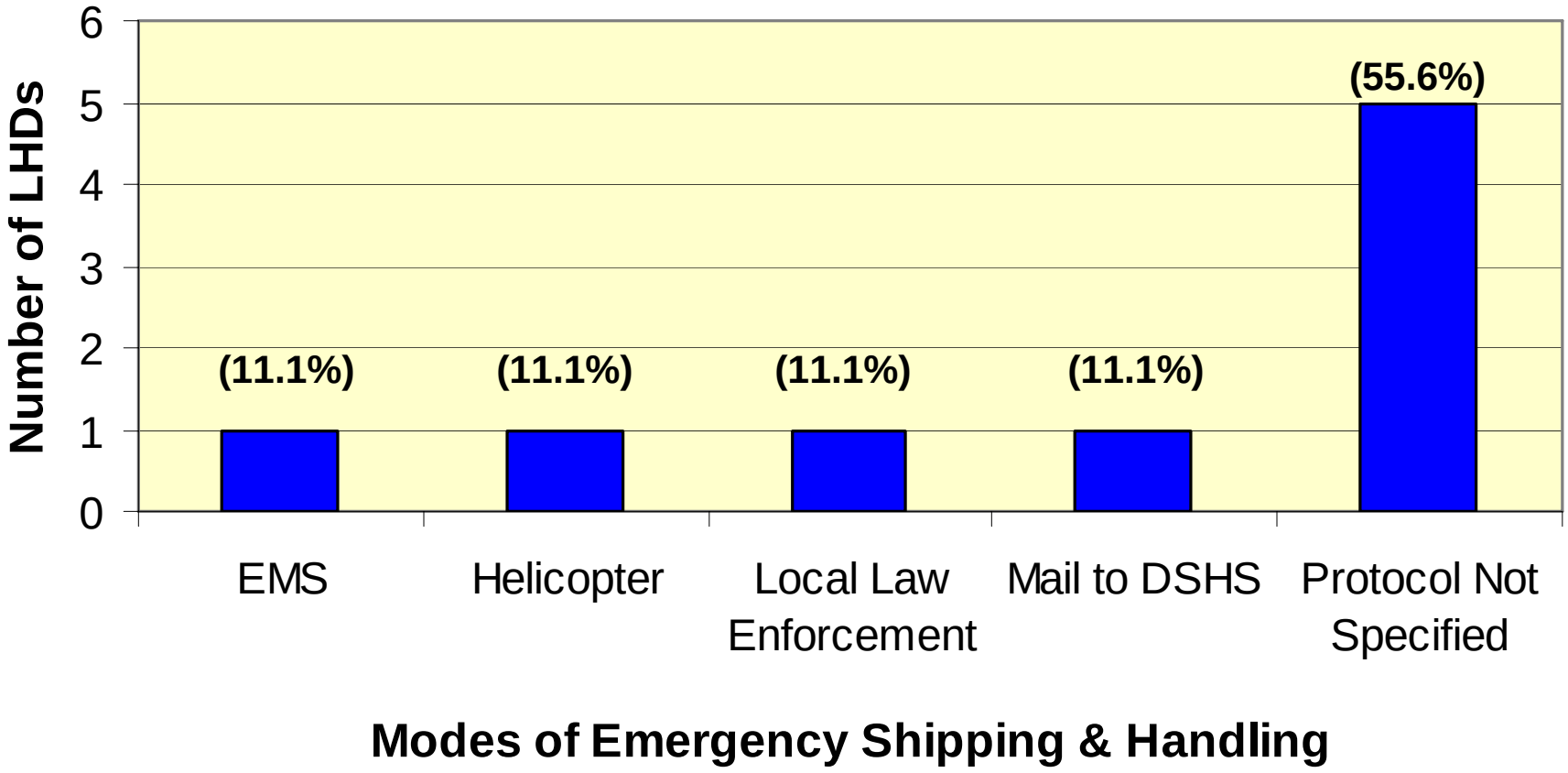
Methods of Transportation Used by Texas LHDs to Ship Suspect Agents to Reference Laboratories



Emergency Handling Protocol Readiness of Texas LHDs

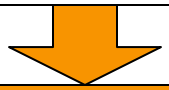


Methods of Emergency Shipping & Handling Planned by Texas LHDs



Results

Emergency handling readiness of Texas LHDs



Couriers able to meet needs of Texas LRN

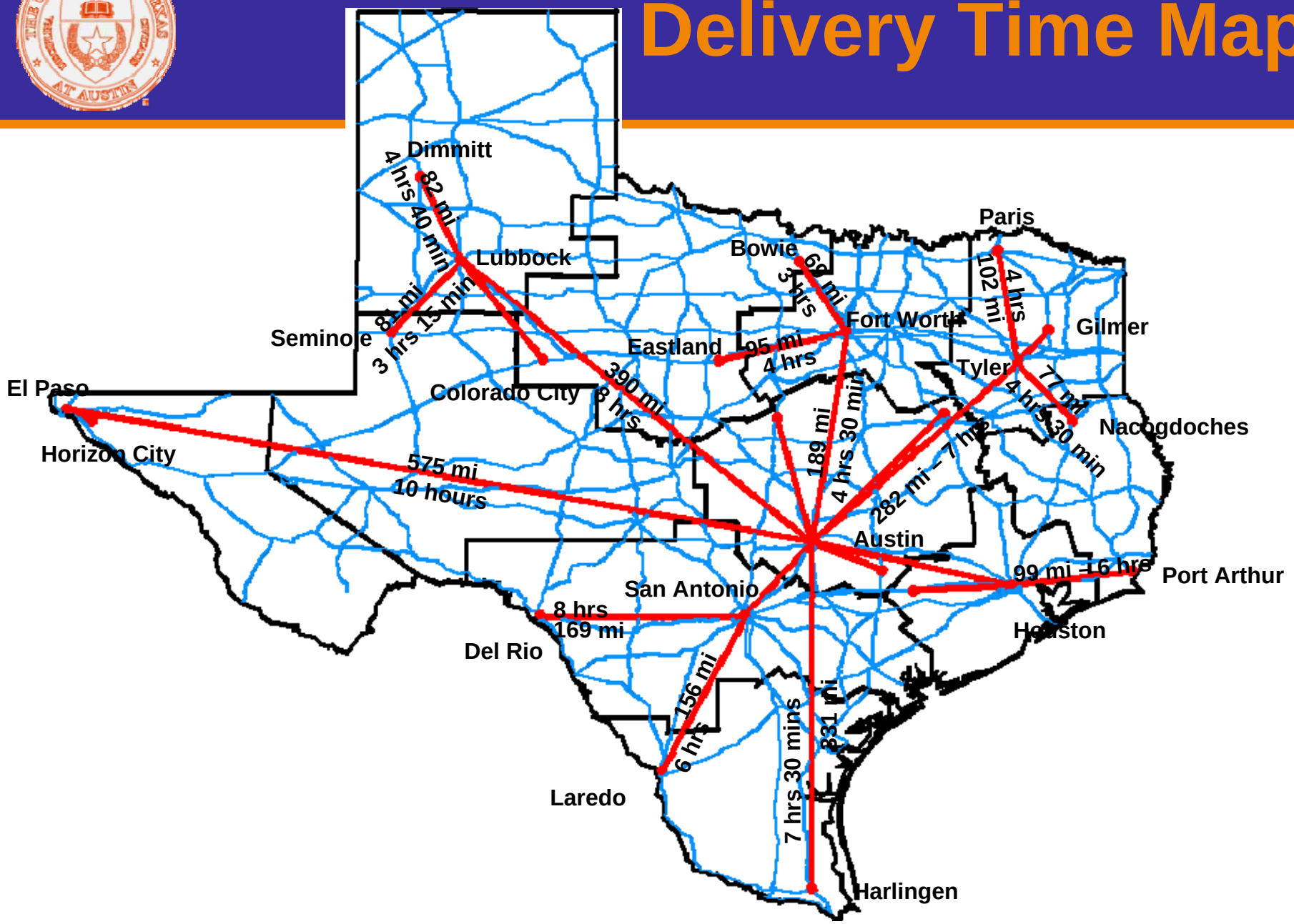
Preliminary Courier Results

1. FedEx Custom Critical
2. Jet Express Couriers, Inc.
3. TexEx Courier & Messenger
4. Green Light Delivery, Inc.
5. DHL Express
6. Air Courier Dispatch
7. City Sprint
8. Medicare Express Delivery Service, Inc.
9. Corporate Couriers
10. AHS Courier
11. ASP (Landstar Network)
12. Panther II Transportation
13. Rapid Delivery Service, Inc.
14. UPS Hazardous Materials Support Center

Delivery Time and Cost

	Delivery Time to DSHS (Cost)	
LRN Region	**Air Courier Dispatch**	**FedEx Custom Critical**
Austin	3 hours 40 mins ($270.00)	5 hours 13 mins ($300.22)
Lubbock	8 hours ($1,104.00)	19 hours 24 mins ($1,060.04)
Tyler	7 hours ($550.00)	8 hours 25 mins ($687.00)
El Paso	10 hours ($1,406.93)	14 hours 54 mins ($1,316.75)
South Texas	7 hours 30 mins ($790.00)	8 hours 53 mins ($757.99)

Delivery Time Map

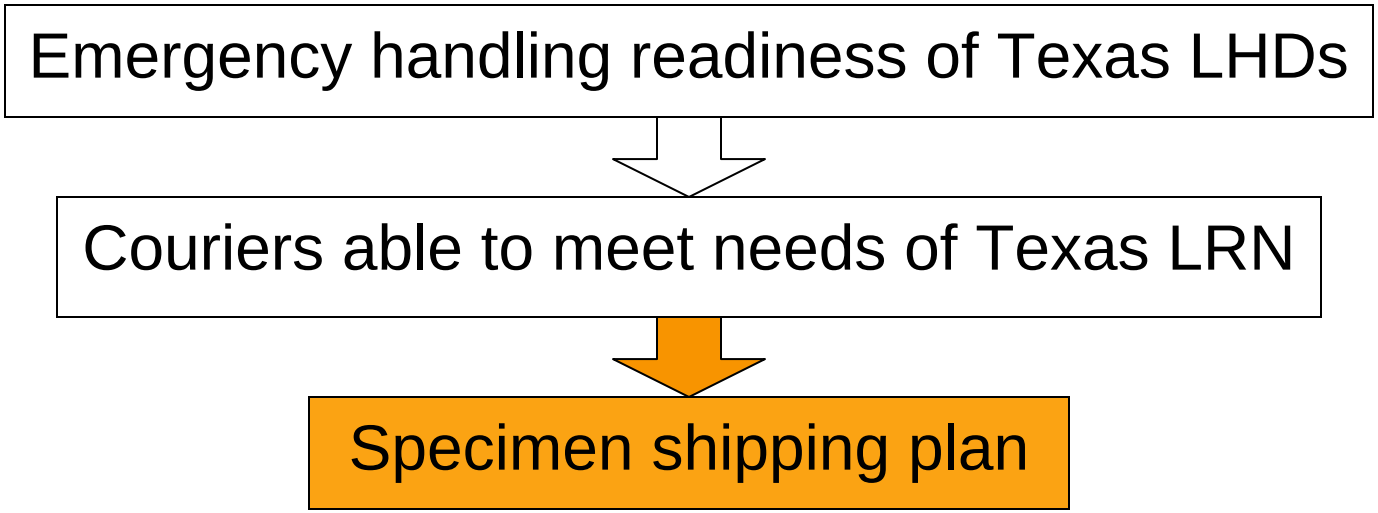


Courier Recommendation

1. Air Courier Dispatch
   - Best overall cost and delivery times
   - Worldwide full-service courier
   - All drivers receive biohazard training

2. FedEx Custom Critical
   - Second in cost and delivery times
   - Strong international reputation
   - Specialize in critical-care transport

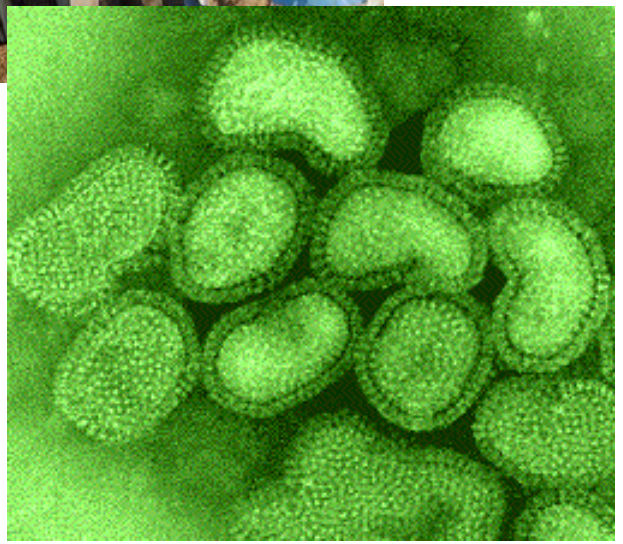
Results

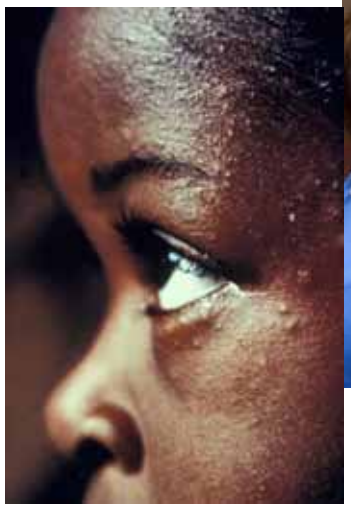

Emergency handling readiness of Texas LHDs
Couriers able to meet needs of Texas LRN
Specimen shipping plan

Specimen Shipping Plan

1. Establish accounts with:
   - Air Courier Dispatch
   - FedEx Custom Critical
2. Develop guidelines for account usage
3. Update *Collection, Packaging, & Shipment Protocol Plan* and report to CDC
4. Distribute plan to Texas LRN laboratories
   - Rural hospital laboratories
   - Local Health Departments

Conclusions





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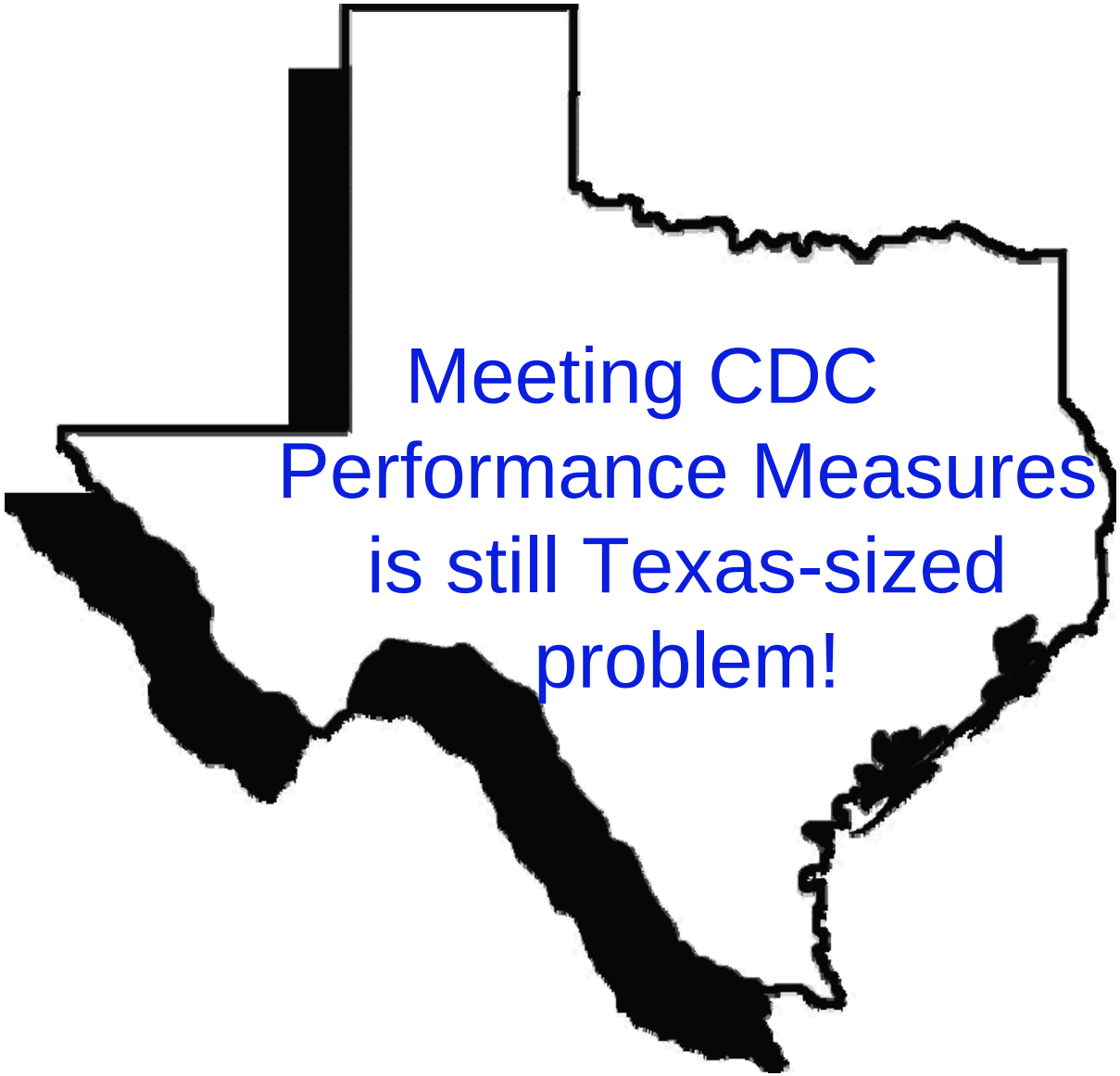

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