

Access to Mental Health Care for Montana Veterans

**Healthcare Inspections
VA Office of Inspector General
U.S. Department of Veterans Affairs**

Overview

- **VA Office of the Inspector General (VA OIG) and VA OIG Healthcare Inspections**
- **Department of Veterans Affairs (or Veterans Administration)**
- **Congress and Congressional requests**
- **OIF/OEF veterans from the Iraq theater and mental health issues**

Objectives

- **Demonstrate the use of geocoding and GIS in collaboration with a complete population database in the analyses of access to mental health care.**
- **Research for a definitive and unbiased conclusion on the status of geographic access to mental health care provided for Montana OIF/OEF veterans.**

Objectives

- **Make an assessment on the impact of non-VA (or private) providers on improving geographic access to mental health care services for Montana OIF/OEF veterans.**
- **Share the experience as well as some thoughts learned from this project, especially in geocoding and population data analyses.**

Project Synopsis

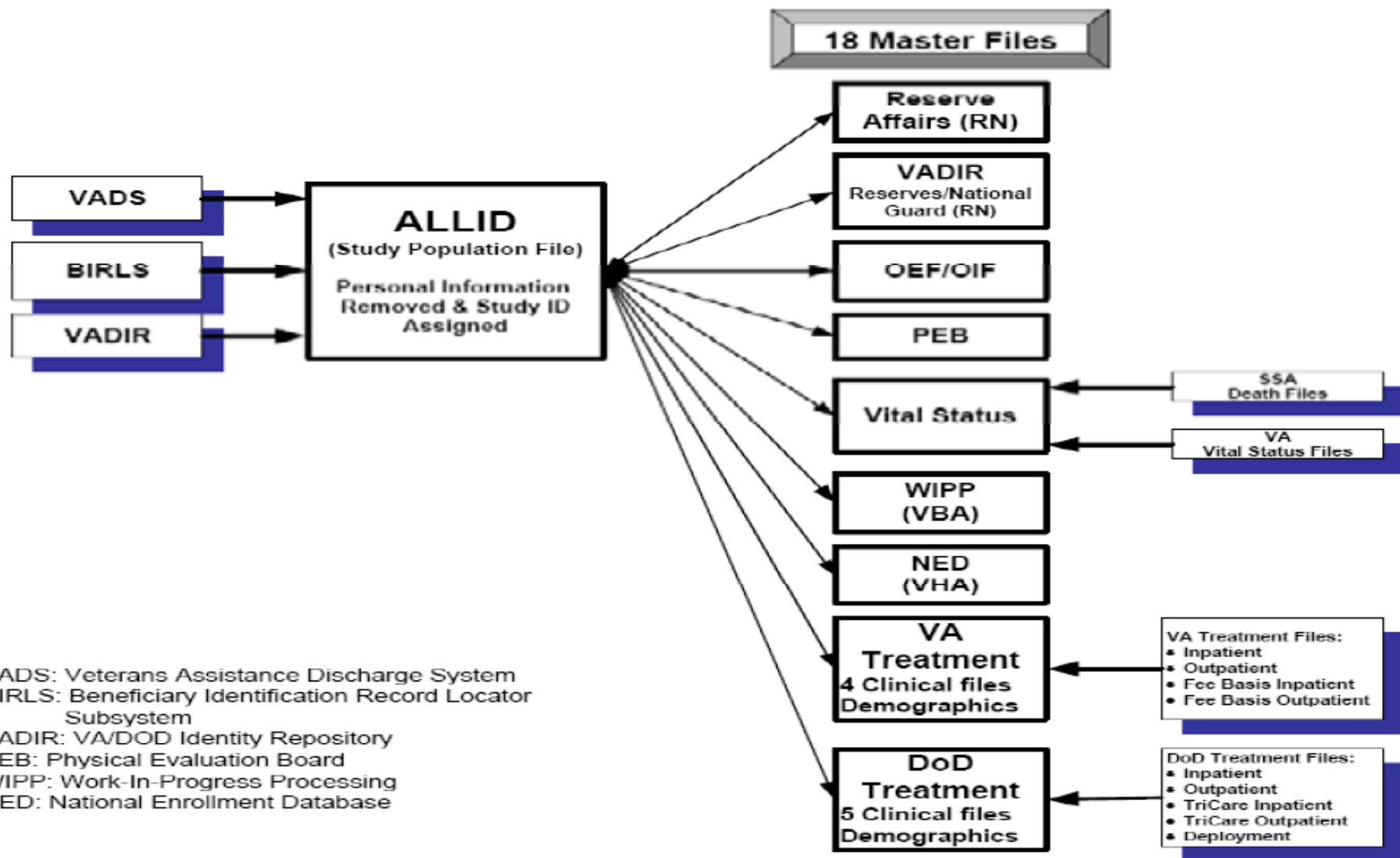
- **Define project scope and compile data of both patients and providers.**
- **Geocoding the addresses of patients and care providers.**
- **Generating travel time bands around each mental care provider.**
- **Collaborating geocoded veterans, care providers, and veterans' travel time.**
- **Data analyses and reporting.**

Materials & Methodology

Data Sources

- **Complete Population Database (LC database)**
 - Complete veteran population data compiled from VA and DoD sources.
 - OIF/OEF and non-OIF/OEF, and prior-separation diagnosis
 - Data includes addresses among other things
- **Montana mental health providers**
 - VA mental health providers
 - Private (non-VA, but VA paid and contracted) mental health providers
- **Grouping of mental health providers**
 - Providing any mental health care service including medications and/or therapy
 - Providing both medications and therapy
 - Providing mental health medications
 - Providing mental health therapy

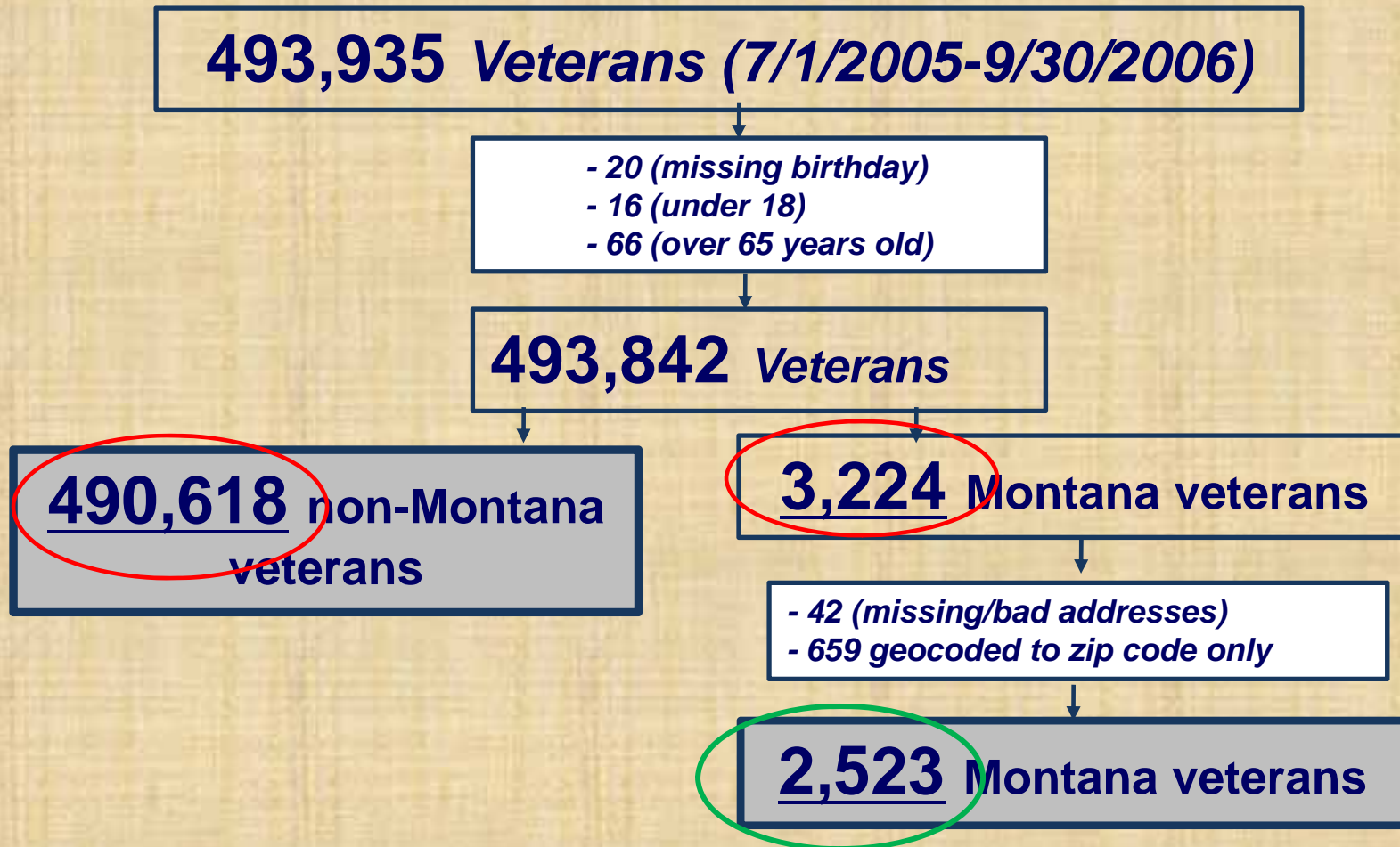
Figure 1. LC Database: ALLID + 18 Master Files



VADS: Veterans Assistance Discharge System
 BIRLS: Beneficiary Identification Record Locator Subsystem
 VADIR: VA/DOD Identity Repository
 PEB: Physical Evaluation Board
 WIPP: Work-In-Progress Processing
 NED: National Enrollment Database

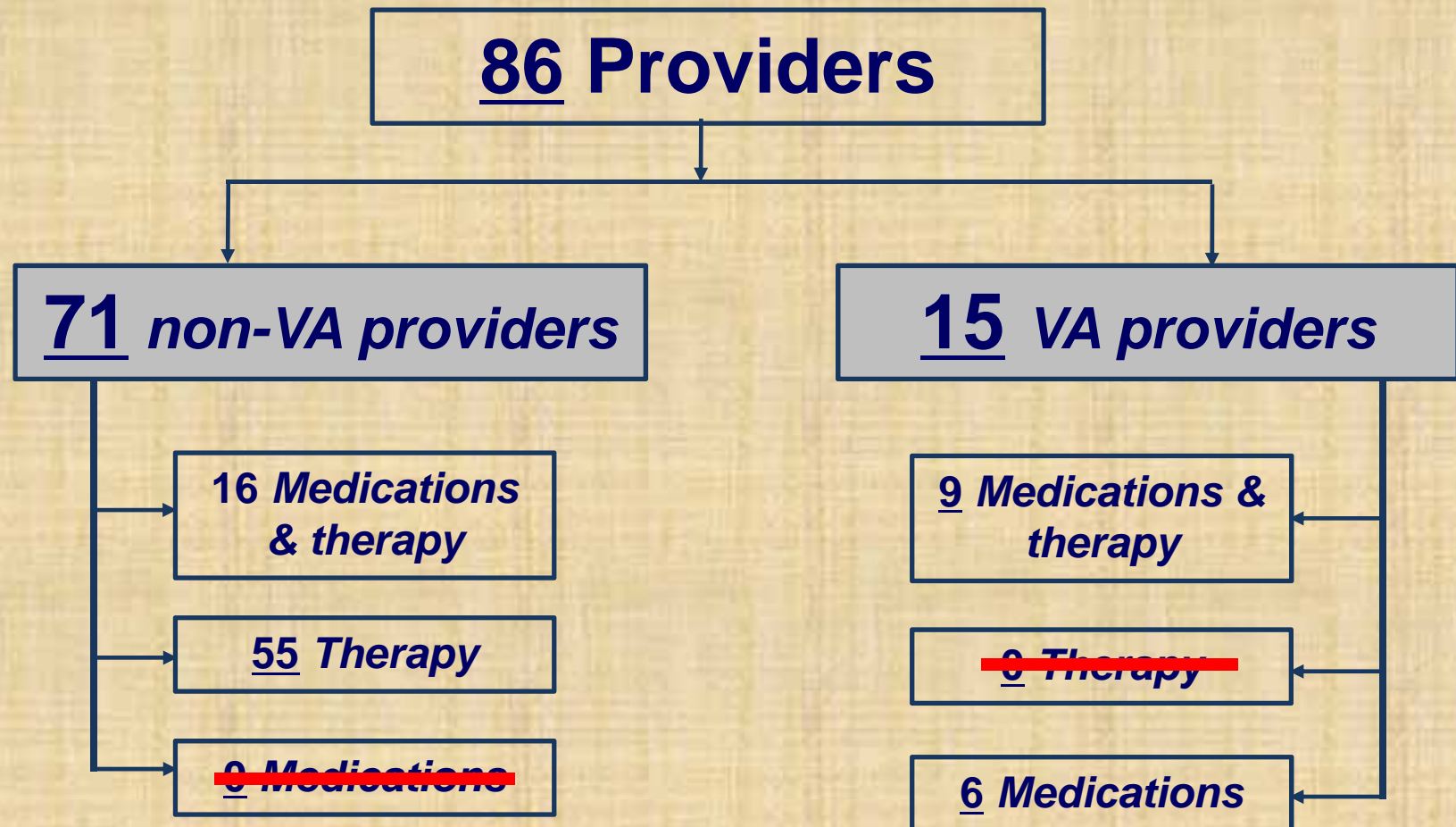
Materials & Methodology

Complete Veterans Population Database



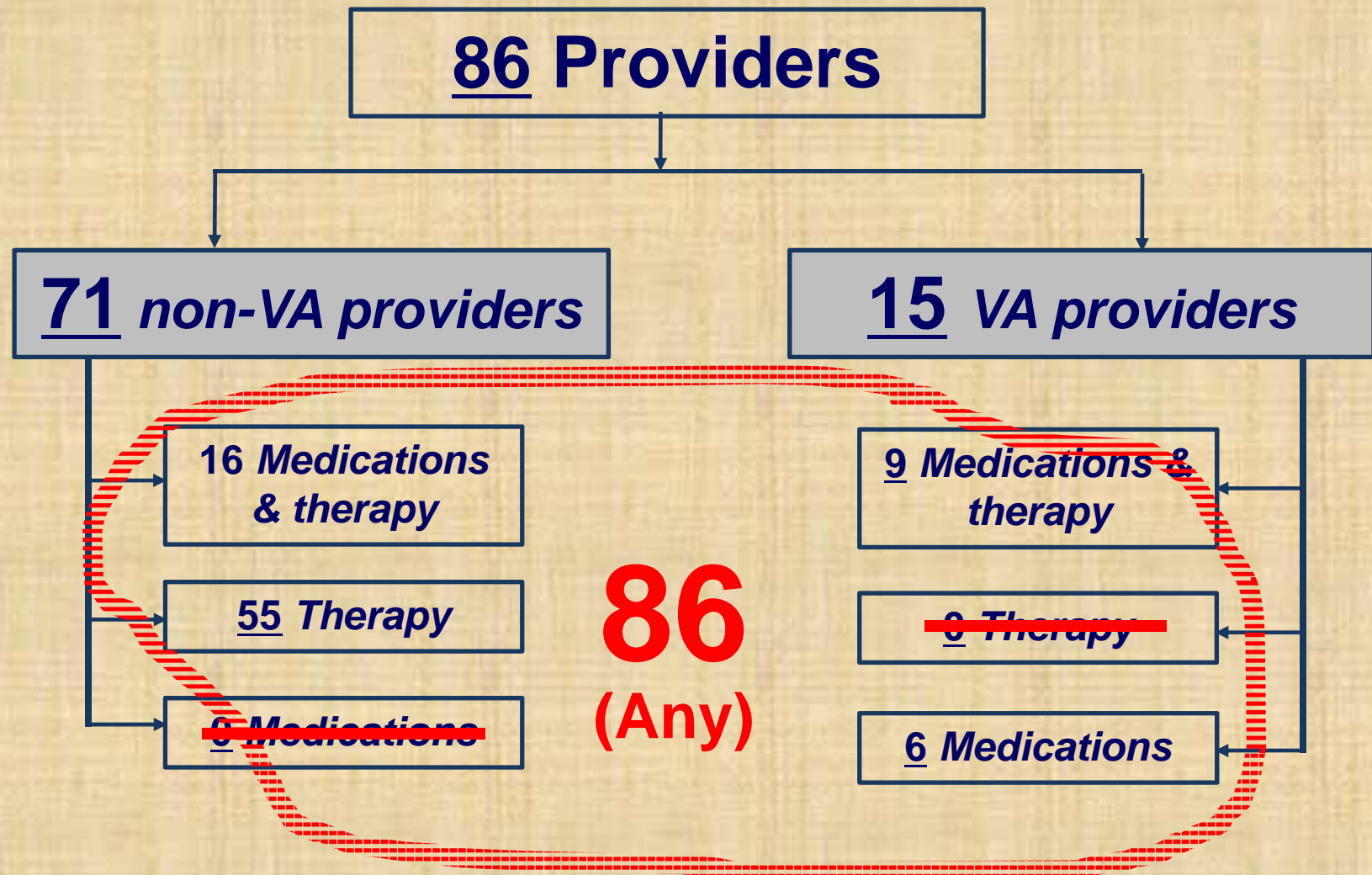
Materials & Methodology

Mental Health Care Providers



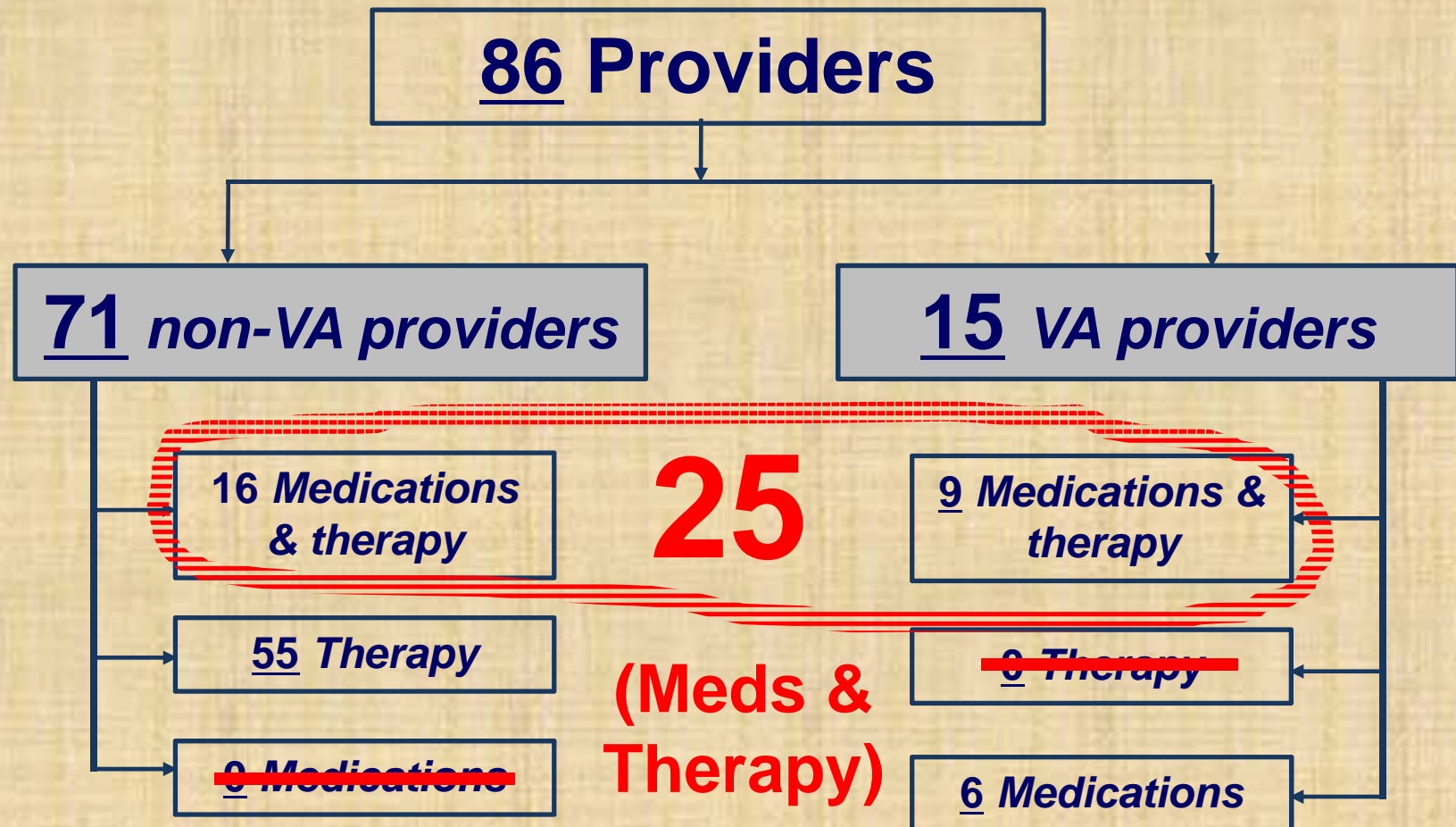
Materials & Methodology

Mental Health Care Providers



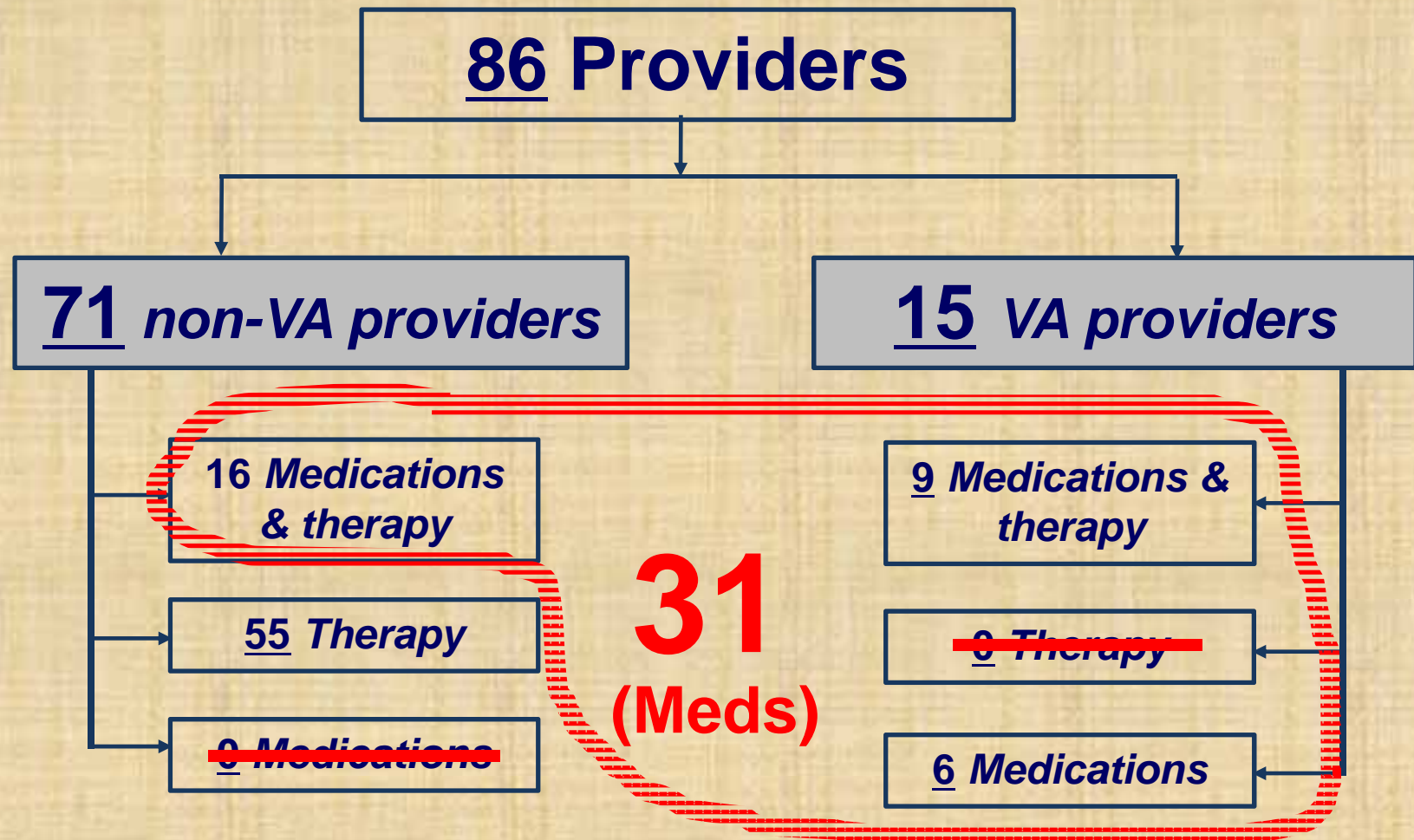
Materials & Methodology

Mental Health Care Providers



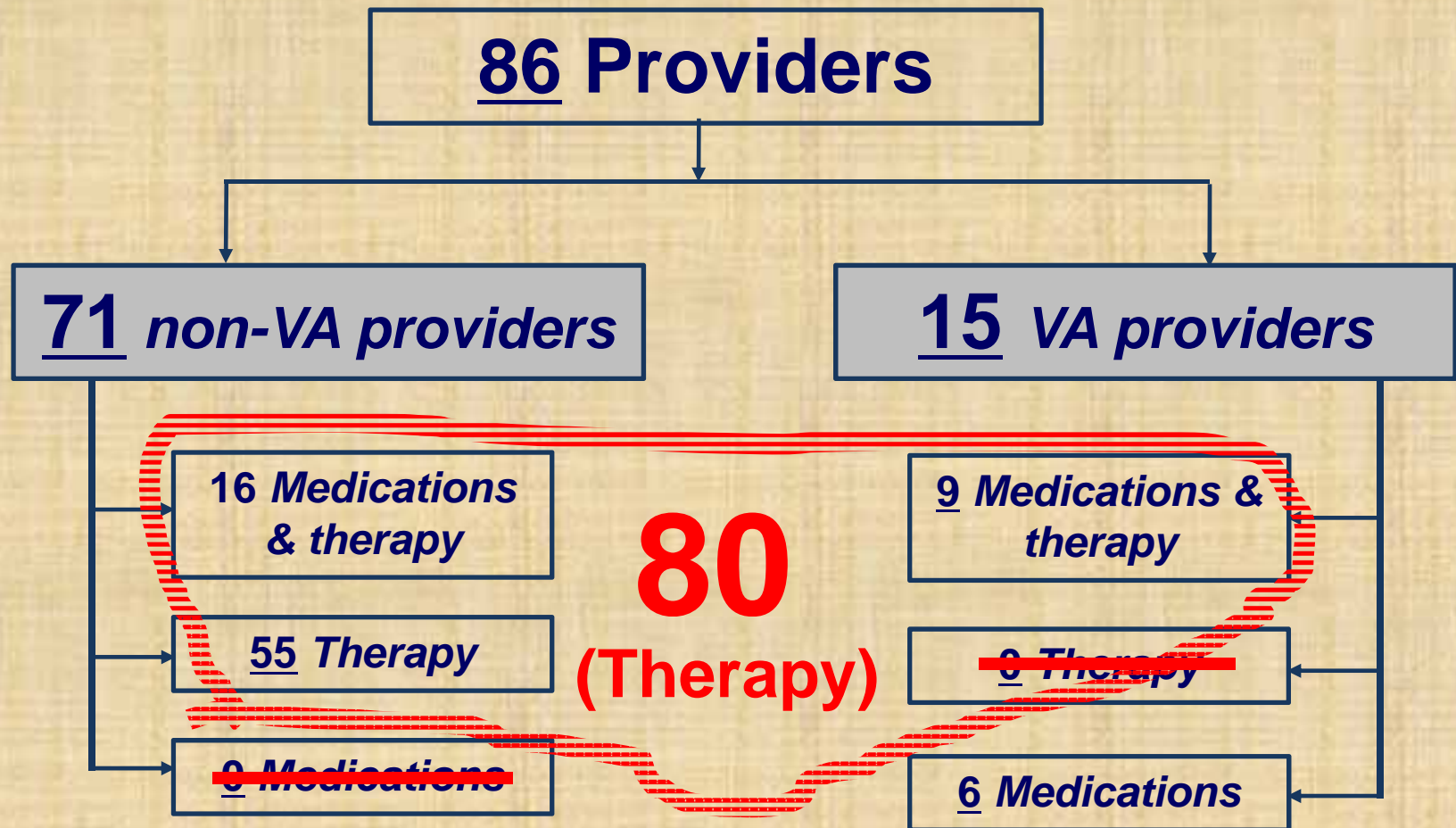
Materials & Methodology

Mental Health Care Providers



Materials & Methodology

Mental Health Care Providers



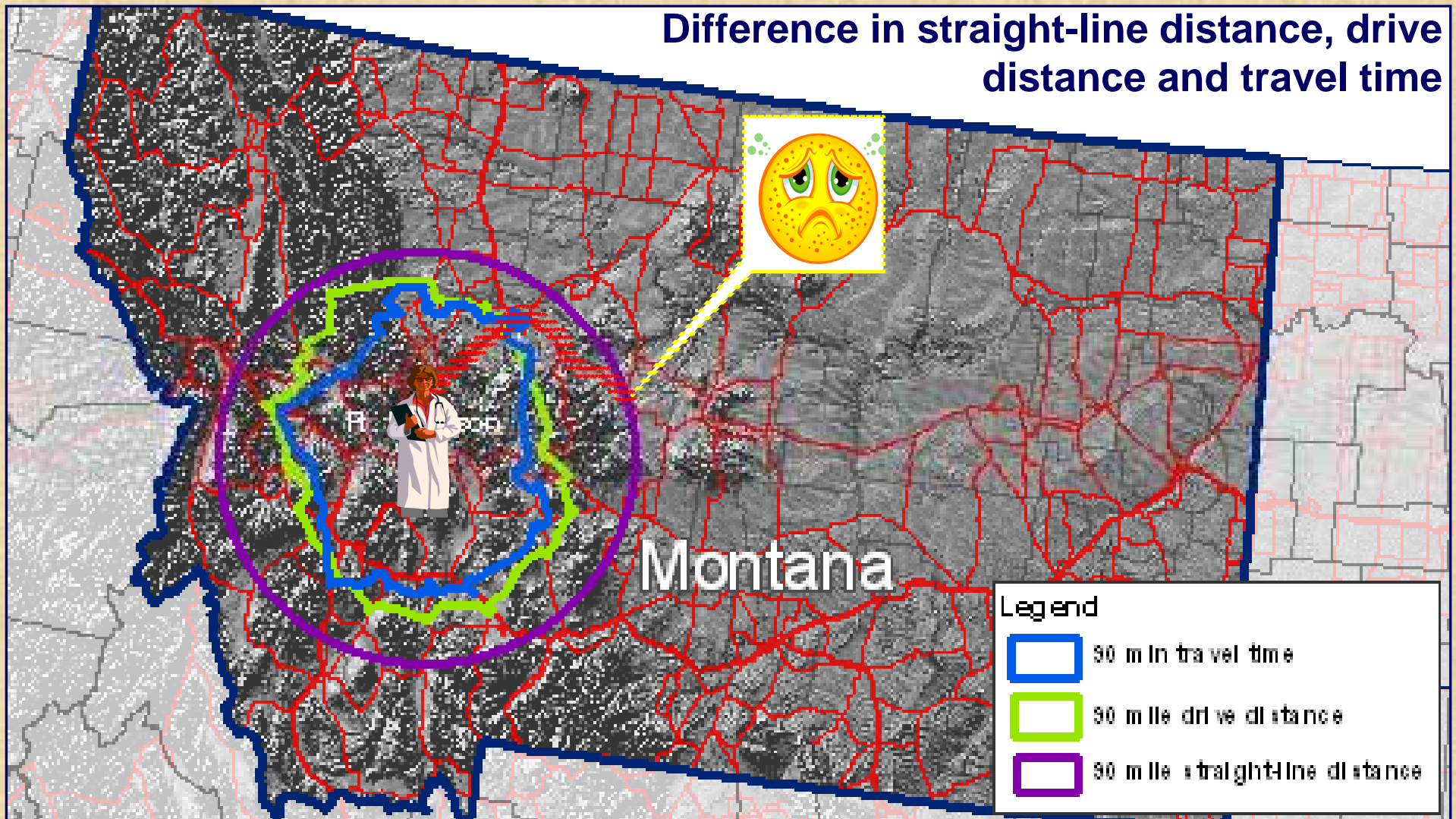
Materials & Methodology

Measures of Geographic Access to Care

- **Straight-line/Euclidean distance approach**
Simple and easy to use, but not account for geographical barriers.
- **Drive distance approach**
Better than straight-line distance; congested roads and freeways treated as the same.
- **Travel time method**
Overcome the weakness in the two methods above; add a cost measure (speed) to travel; but real travel conditions overlooked.
- **Calibrated/adjusted travel time**
Road speeds calibrated to reflect “reality” travel conditions; more demanding in data prep and processing.

Materials & Methodology

Difference in straight-line distance, drive distance and travel time



Materials & Methodology

Geocoding Patients & Care Providers

- Why not use zip centroids or others
- Geocoding – a translation & matching game
- Tools and software
- Geocoding patients and mental health providers
 - 3,224 Patient addresses each uniquely tacked (2,523 used)
 - 86 Mental health providers with unique identifiers
- Geocoding quality assessment

Materials & Methodology

Data Collaborations

- Transform geocoded data to two spatial layers, one for patients and one for care providers.
- Generate travel time bands around each of the 86 care providers.
- Travel time bands used include 15, 30, 60, 90, & 120 min.
- Assign travel time & providers to geocoded patients.

Results & Discussions

Characteristics of Montana Veterans Population

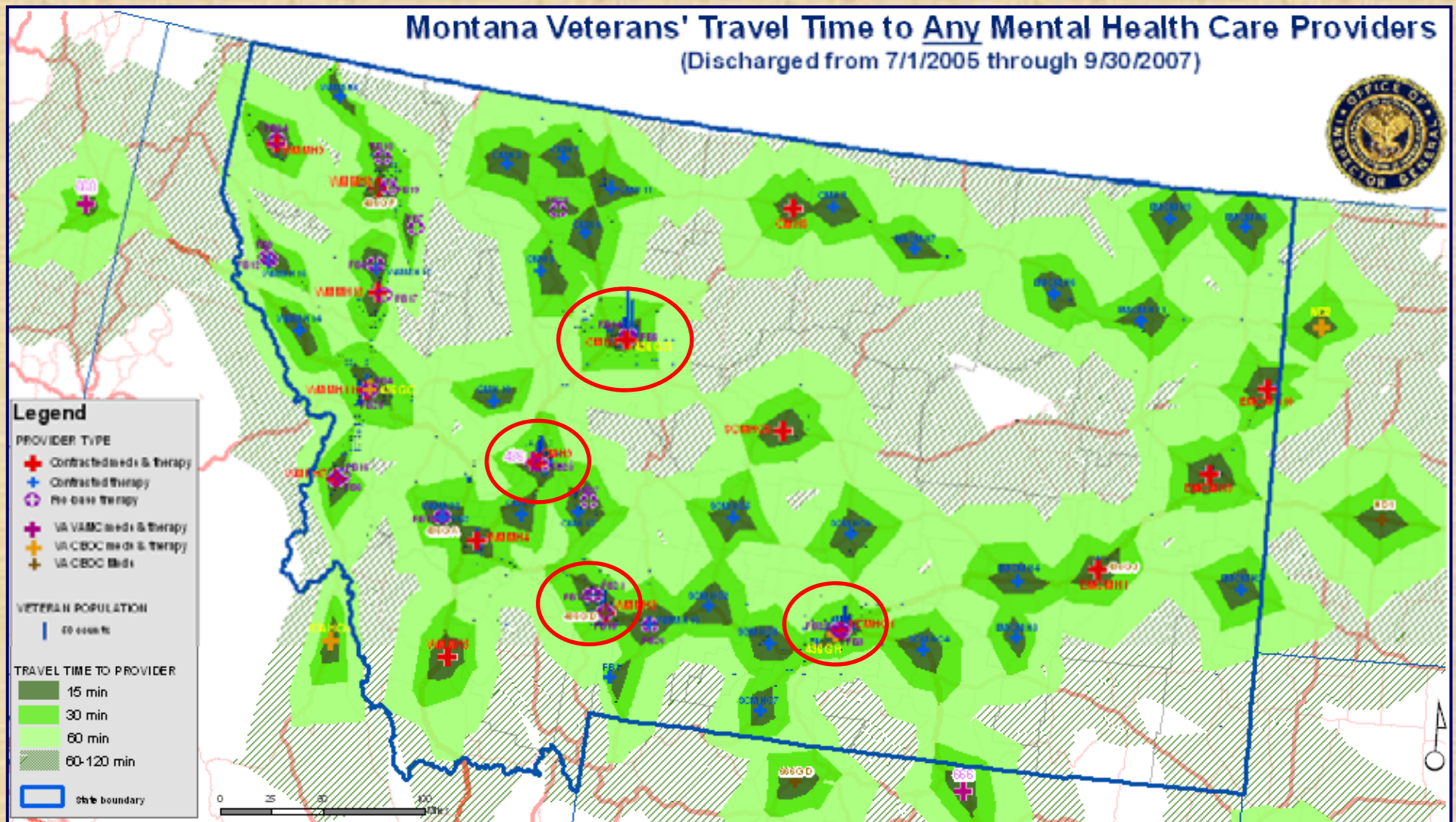
Non-Montana		
	OIF/OEF	Non-OIF/OEF
DoD Active	130,862 (27%)	218,559 (45%)
DoD Reserve	114,525 (23%)	26,672 (5%)
Overall	245,387 (50%)	245,231 (50%)
Montana		
DoD Active	593 (18%)	1,165 (36%)
DoD Reserve	1,142 (35%)	324 (10%)
Overall	1,735 (54%)	1,489 (46%)

Results & Discussions

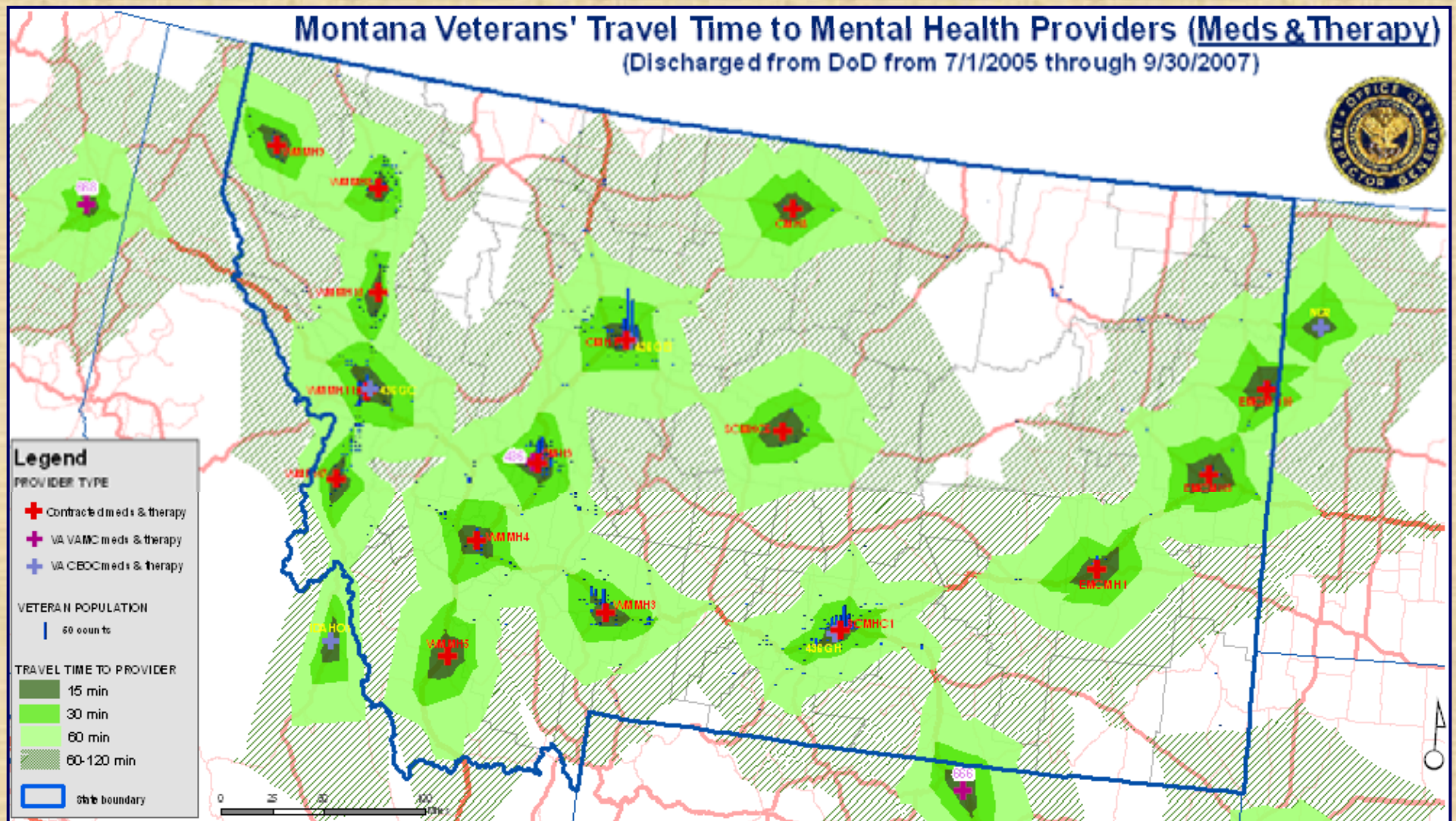
VA Reliance and summary diagnosis of Mental Health between Montana and non-Montana Veterans after Discharge

<i>DoD Component</i>	Montana		Non-Montana	
	<i>Active</i>	<i>Reserve</i>	<i>Active</i>	<i>Reserve</i>
<i>Seeking VA care</i>	54%	63%	43%	47%
<i>Summary status of mental health diagnosis</i>	27%	38%	23%	26%
<i>Mental disorder diagnosis</i>	26%	37%	21%	24%

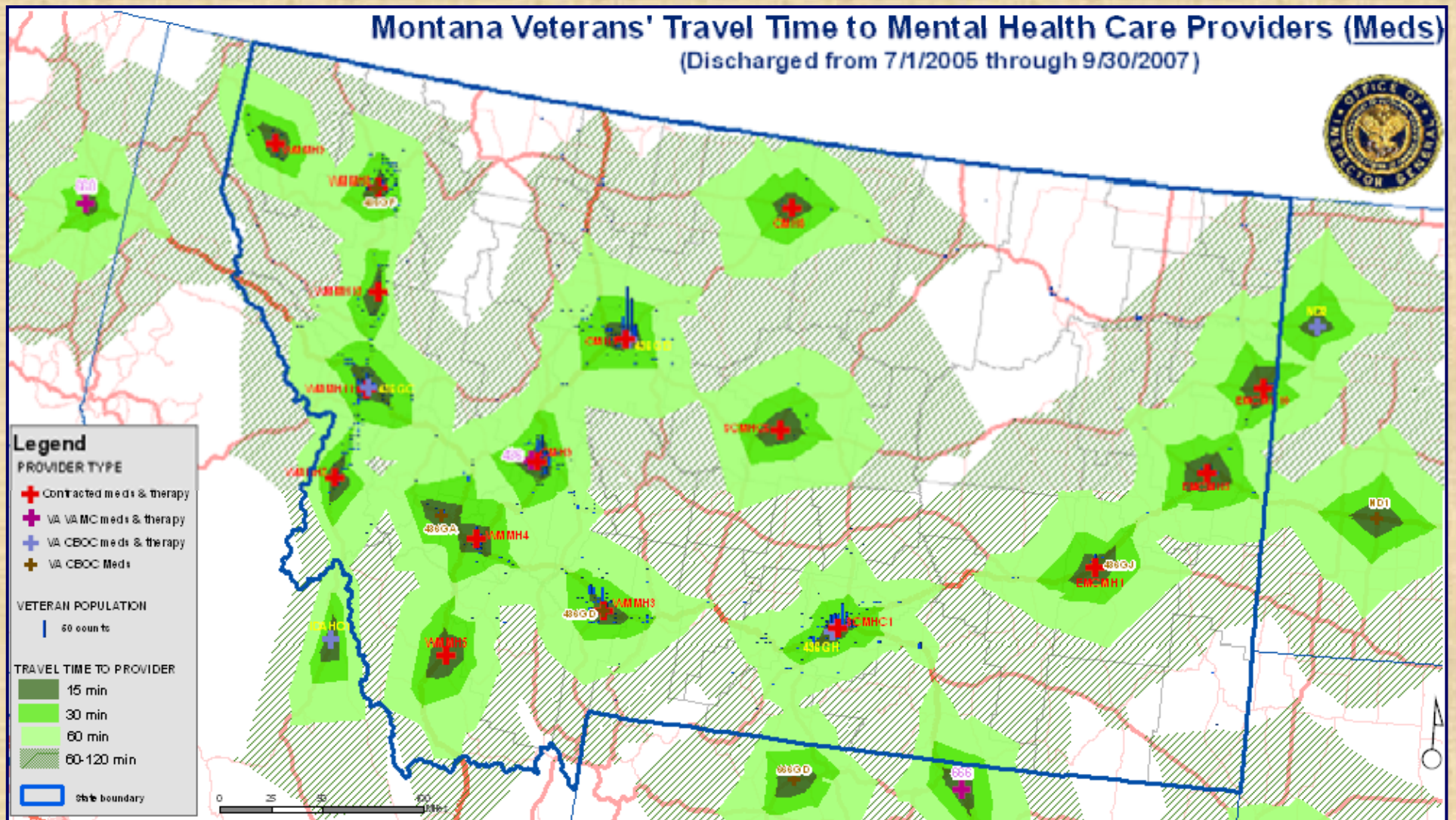
Results & Discussions



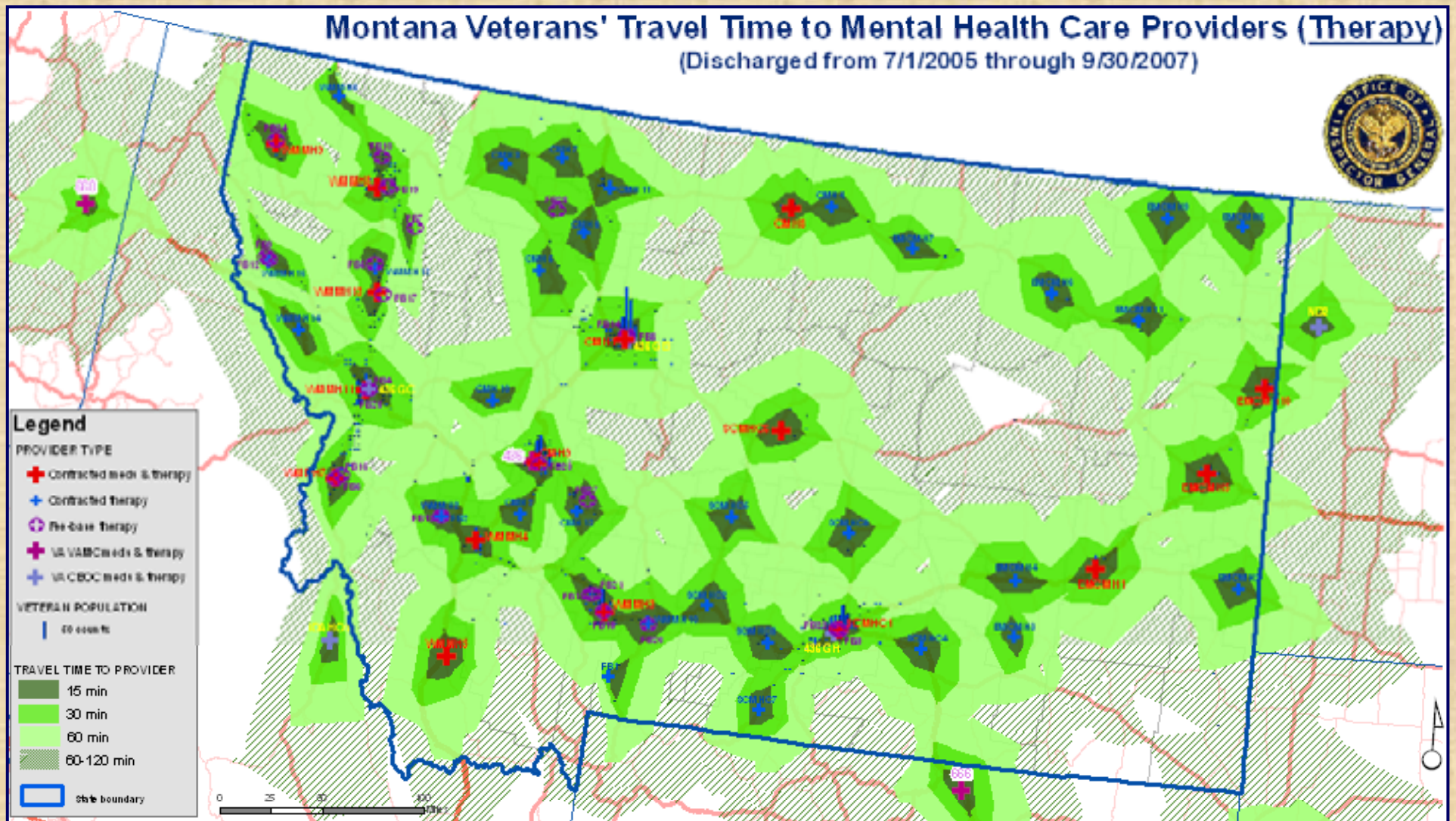
Results & Discussions



Results & Discussions



Results & Discussions




Results & Discussions

Access to Mental Health Providers for Montana Veterans

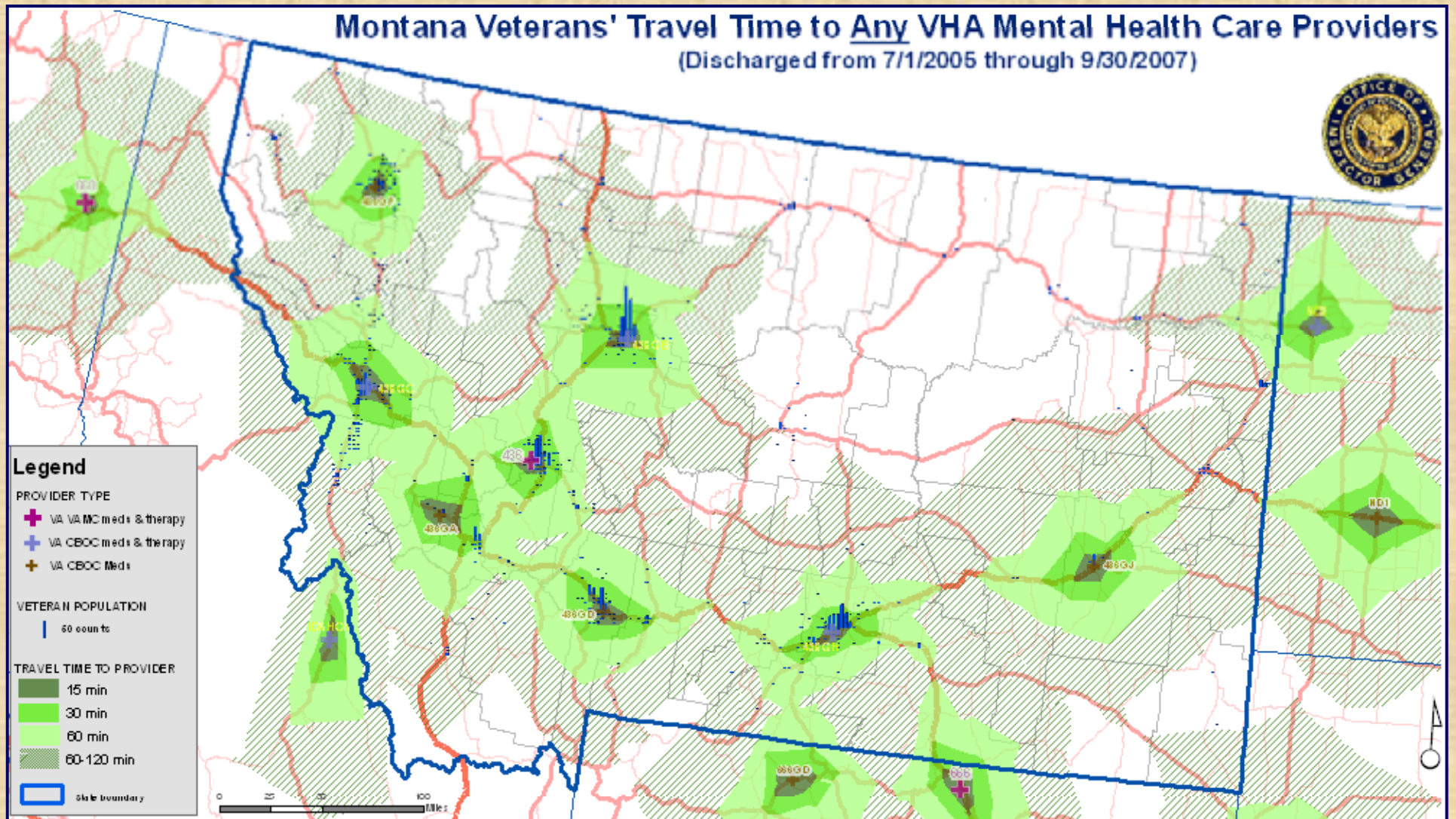
	OIF/OEF		Non-OIF/OEF	
	DoD Active	Reserve/Guard	DoD Active	Reserve/Guard
Within 15-min Travel Time				
Any Providers	82.6%	82.3%	82.3%	85%
Meds & Therapy	72.5%	76.1%	73.6%	70%
Medications	73.4%	76.8%	74.3%	70%
Therapy	82.4%	82.3%	82.2%	85%
Within 30-min Travel Time				
Any Providers	96%	95.4%	95.9%	96.6%
Meds & Therapy	87.7%	89.8%	86.1%	79.9%
Medications	88.8%	90.6%	87.2%	79.9%
Therapy	96%	95.4%	95.9%	96.6%

Results & Discussions

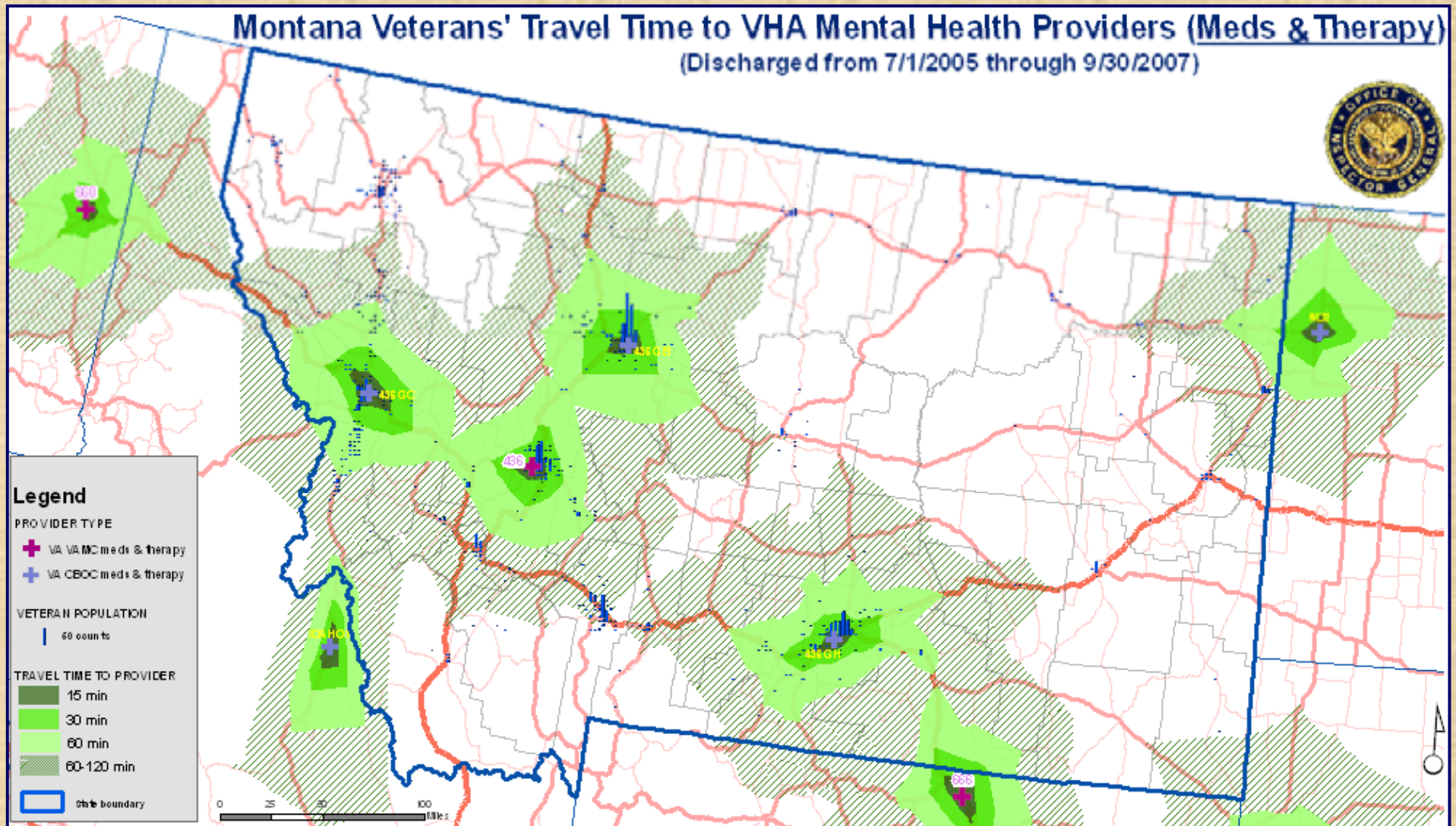
Assuming all 701 excluded veterans (42 bad/missing addresses + 659 zip-5 geocoded) are residing outside the 2-hr travel time, the access status will be:

	Montana veterans	Excluding 42 bad addresses and 659 ZIP5-geocoded (2,523)	No exclusion (3,224)
Within 15 min	2,084	82.6%	64.6%
15-30 min	2,417	95.8%	75.0%
30-60 min	2,515	99.7%	 78.0%

Results & Discussions



Results & Discussions



Results & Discussions

Access to VA Mental Health Providers for Montana Veterans

	OIF/OEF		Non-OIF/OEF	
	DoD Active	Reserve/Guard	DoD Active	Reserve/Guard
Within 15-min Travel Time				
Any Providers	55.4%	57.4%	56.1%	47.6%
Meds & Therapy	43.1%	44.3%	45.7%	39.1%
Within 30-min Travel Time				
Any Providers	75.2%	82.1%	75.8%	67.3%
Meds & Therapy	54.3%	62.5%	57.6%	54.6%

Results & Discussions

Recap on VA and non-VA Providers for Improving Access to Mental Health for Montana Veterans

	OIF/OEF		Non-OIF/OEF	
	DoD Active	Reserve/Guard	DoD Active	Reserve/Guard
<i>VA Providers within 15-min travel</i>				
Any Providers	55.4%	57.4%	56.1%	47.6%
Meds & Therapy	43.1%	44.3%	45.7%	39.1%
<i>VA Providers within 30-min travel</i>				
Any Providers	75.2%	82.1%	75.8%	67.3%
Meds & Therapy	54.3%	62.5%	57.6%	54.6%

Results & Discussions

Recap on VA and non-VA Providers for Improving Access to Mental Health for Montana Veterans

	OIF/OEF		Non-OIF/OEF	
	DoD Active	Reserve/Guard	DoD Active	Reserve/Guard
VA Providers within 15-min travel				
Any Providers	55.4%	57.4%	56.1%	47.6%
Meds & Therapy	43.1%	44.3%	45.7%	39.1%
VA Providers within 30-min travel				
Any Providers	75.2%	82.1%	75.8%	67.3%
Meds & Therapy	54.3%	62.5%	57.6%	54.6%
All providers within 15-min travel				
Any Providers	82.6%	82.3%	82.3%	85%
Meds & Therapy	72.5%	76.1%	73.6%	70%
All providers within 30-min travel				
Any Providers	96%	95.4%	95.9%	96.6%
Meds & Therapy	87.7%	89.8%	86.1%	79.9%

Results & Discussions

Recap on VA and non-VA Providers for Improving Access to Mental Health for Montana Veterans

	OIF/OEF		Non-OIF/OEF	
	DoD Active	Reserve/Guard	DoD Active	Reserve/Guard
VA Providers within 15-min travel				
Any Providers	55.4%	57.4%	56.1%	47.6%
Meds & Therapy	43.1%	44.3%	45.7%	39.1%

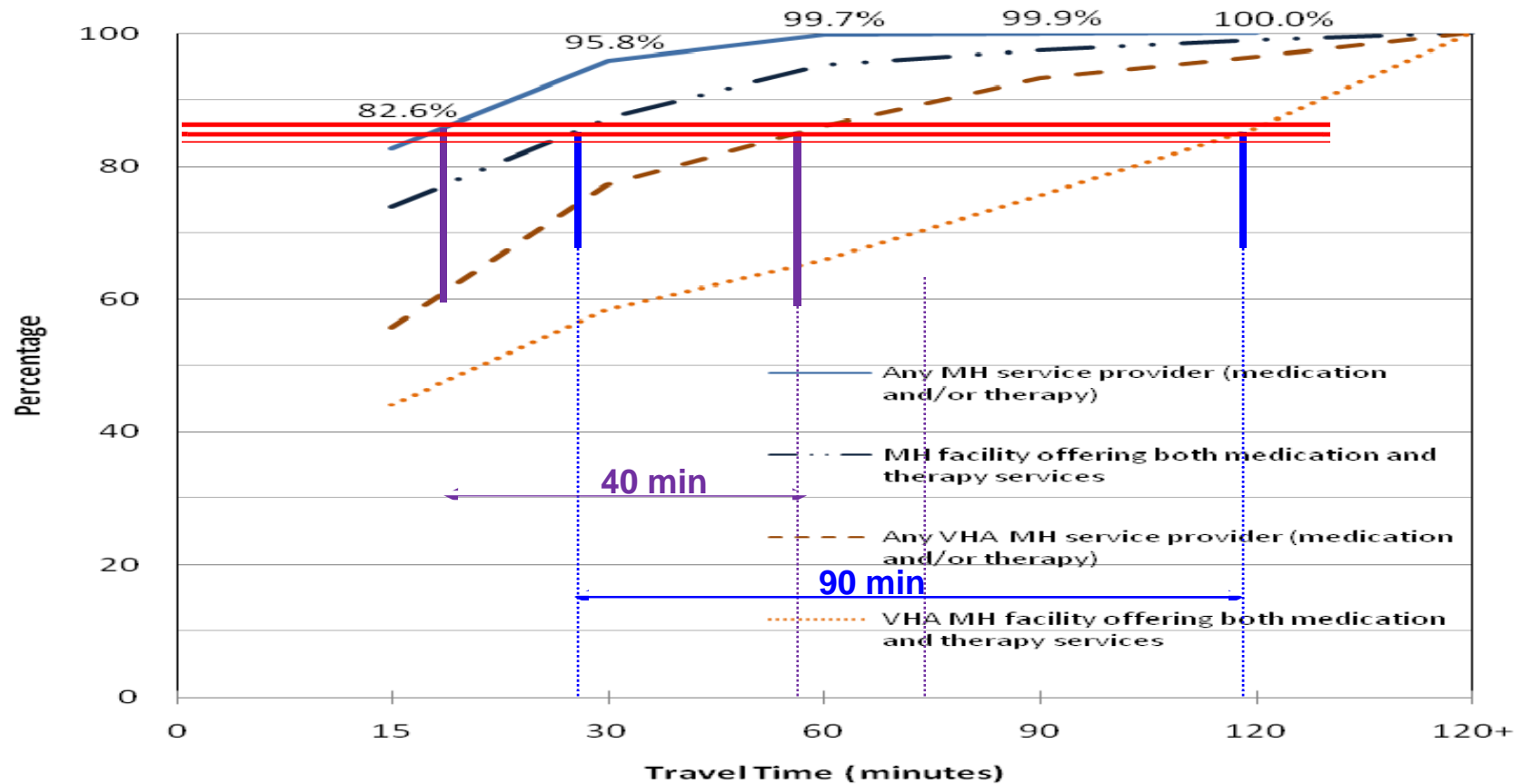
VA Providers within 30-min travel				
Any Providers	75.2%	82.1%	75.8%	67.3%
Meds & Therapy	54.3%	62.5%	57.6%	54.6%

All providers within 15-min travel				
Any Providers	82.6%	82.3%	82.3%	85%
Meds & Therapy	72.5%	76.1%	73.6%	70%

All providers within 30-min travel				
Any Providers	96%	95.4%	95.9%	96.6%
Meds & Therapy	87.7%	89.8%	86.1%	79.9%

Results & Discussions

Impact of non-VA Providers on Improving Access to Mental Health for Montana Veterans



Conclusions

- **Combining geocoding technique with a complete population database provided an effective GIS approach for comprehensive geographic analyses of access to mental health care for Montana veterans.**
- **Within 15-min travel, 82% of Montana veterans have access to mental health medications and/or therapy offered through VA and almost all within one-hour travel.**
- **Significant contributions by non-VA providers were observed for improving access to mental health care for Montana veterans, regardless of OIF/OEF status.**

Conclusions

- **A complete population database eliminated potential biases in analyses while exclusion of “uncertain data records” increased the confidence in the results as the entire veteran population was represented.**
- **Consequently, this lead to complete, high-confidence, and conclusive results in the assessment of access to mental health care for Montana veterans.**

The team that has makes this work possible.

Limin X. Clegg, Ph.D.

Yurong Tan, Ph.D.

Nathan McClafferty, MS

Patrick Smith, MS

Questions & Answers

Results & Discussions

Results of Geocoding & Comparison

Geocoding Match	VA OIG (LC) Database	FY2007 VA Enrollment		FY2008 VA Enrollment	
	Montana	Montana	USA	Montana	USA
Street Match	74.5%	64.5%	80.7%	65.5%	81.6%
ZIP+4 (ZIP9)	2.1%	3.2%	2.0%	3.1%	1.9%
ZIP+2 (ZIP7)	2.7%	2.9%	2.5%	2.7%	2.2%
ZIP (ZIP5)	20.7%	29.4%	14.8%	28.7%	14.4%
Not Geocoded	(1%)		(0.3%)		
Total*	100%	100.0%	100.0%	100.0%	100.0%

* Excluding non-geocoded records