Change in acuity level between assessments among Los Angeles County Medical Care Coordination clients

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Outline of the Presentation

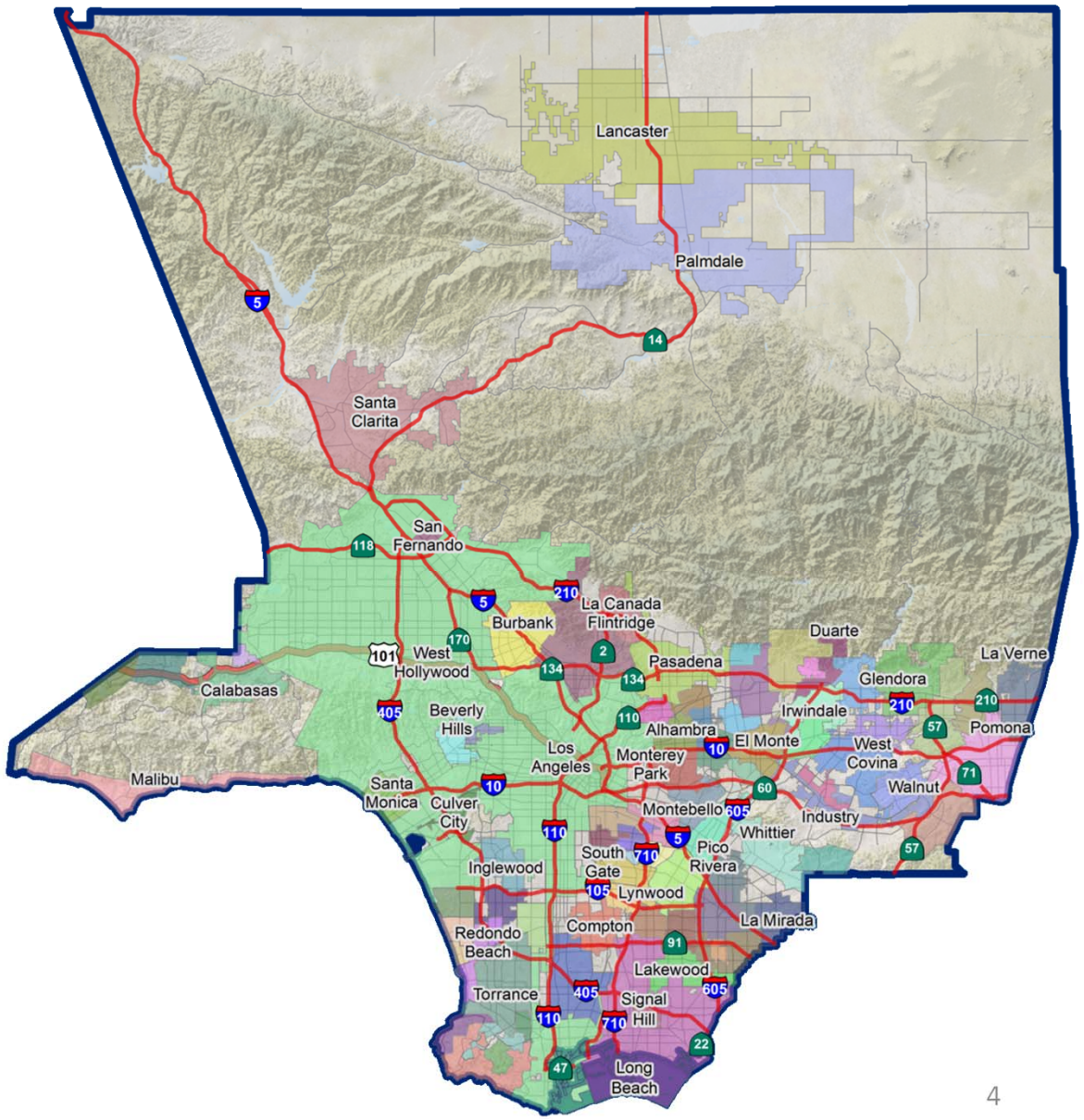
- Background for HIV epidemic in Los Angeles County (LAC) and on Medical Care Coordination (MCC) program in LAC
- Describe the key components of MCC
- Review the domains of the MCC assessment and acuity calculation
- Present the characteristics of patients enrolled in MCC
- Present acuity changes from the first to the second assessment by patient characteristics
- Conclusions and recommendations
- Next Steps

Los Angeles County (LAC) Geography

- Over 4,000 square miles
- 88 cities
- Over 100 unincorporated areas
- Urban, suburban, and rural areas
- 26 health districts
- ~1 of every 4 Californian lives in Los Angeles County (26%)

LAC Population

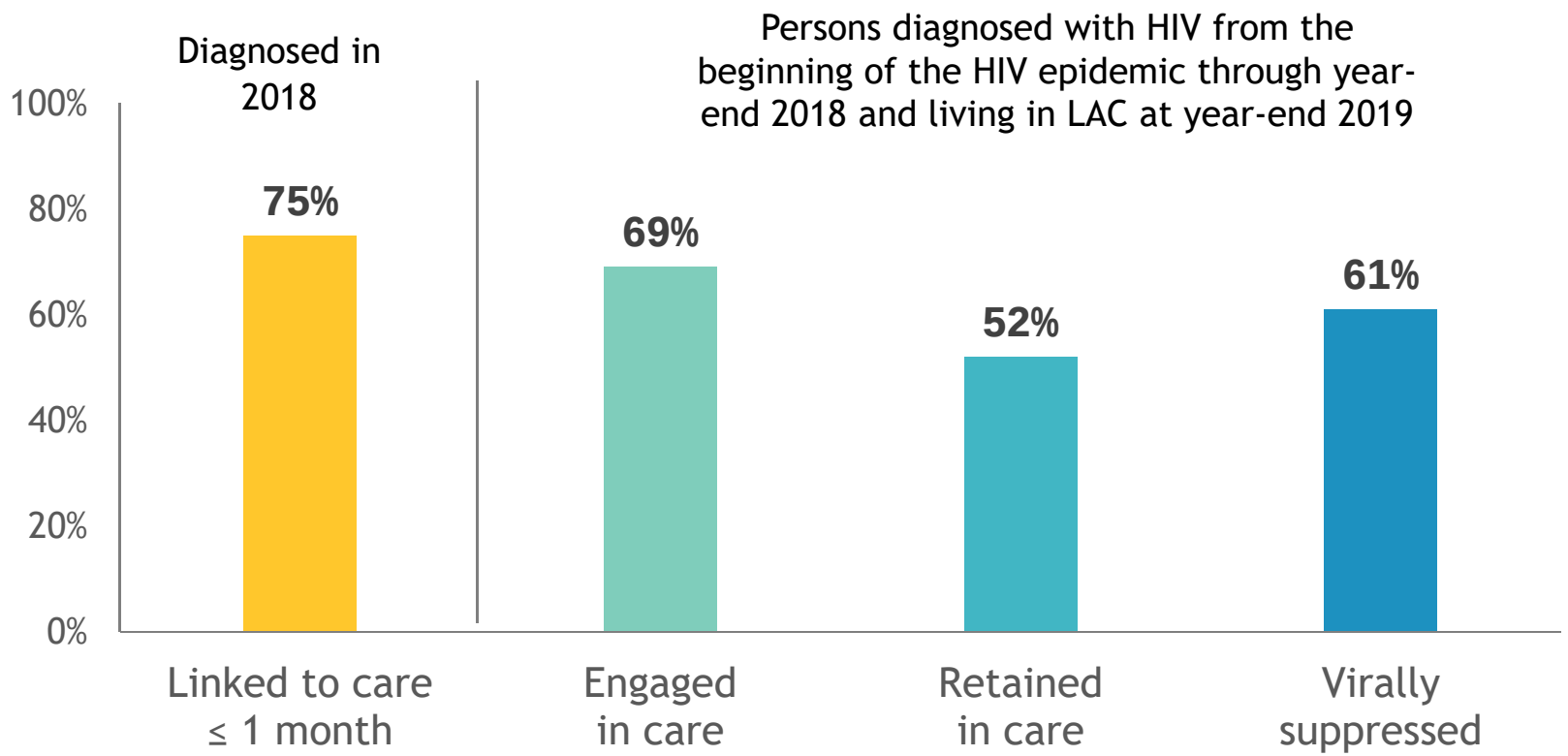
- 10.2 million residents
- Most populous county in the United States
- One of the most racially/ethnically diverse county in the United States
- The majority are Latinx, male, between ages 25 to 44
- 225 different languages are spoken



Background

- In 2018 there were approximately 1,040,352 people living with HIV (PLWH) in the U.S. and California reported 131,013 PLWH.
- About 39% of all California HIV cases were reported from LAC in 2018 (n=50,803).
- The National "Ending the HIV Epidemic" initiative identified improvements in retention in care (RiC) and viral suppression (VS) as critical steps to reduce new HIV infections 90% by 2030 in 50 communities most impacted by HIV, that include LAC.
- While antiretroviral therapy (ART) is safe, tolerable and effective, it requires engagement in medical care and adherence to treatment.
- These may be difficult for PLWH also experiencing complex comorbidities such as other chronic diseases, mental health and/or addiction issues, housing and income instability or low health literacy.

HIV Care Continuum Among Persons Aged ≥ 13 years, LAC 2018-2019



Linkage to care: numerator includes persons newly diagnosed with HIV in 2018 with ≥1 CD4/VL/Genotype test reported within 1 month of HIV diagnosis; denominator includes persons who were diagnosed with HIV in 2018.
Engaged in care: numerator includes PLWDH with ≥1 CD4/VL/Genotype test in 2019; denominator includes PLWDH diagnosed through 2018 and living in LAC at year-end 2019 based on most recent residence.
Retained in care: numerator includes PLWDH with ≥2 CD4/VL/Genotype tests at least 3 months apart in 2019; denominator includes PLWDH diagnosed through 2018 and living in LAC at year-end 2019 based on most recent residence.
Virally suppressed: numerator includes PLWDH whose last VL test in 2019 was suppressed (HIV-1 RNA < 200 copies/mL); denominator includes PLWDH diagnosed through 2018 and living in LAC at year-end 2019 based on most recent residence. For the purposes of this analysis, PLWDH without a VL test in 2019 were categorized as having unsuppressed viral load.

Source: HIV Surveillance data as of December 2019

Background (cont.)

- In 2013, DHSP implemented the clinic-based MCC program to increase retention in care and viral suppression by addressing medical and psychosocial needs among clients at risk for poor health outcomes.
- A standardized acuity assessment tool was developed to guide delivery of integrated case management services.
- MCC has shown effectiveness in improving RiC and VS among clients, but its impact on acuity has not been evaluated.[1]
- This study was to describe changes in acuity among MCC clients from initial to second assessment

[1]Li, M.J., Su, E., Garland, W.H., Oksuzyan, S., Lee, S-J., Kao, U.H., Weiss, R.E., Shoptaw, S.J. Trajectories of Viral Suppression in People Living With HIV Receiving Coordinated Care: Differences by Comorbidities. *JAIDS,* Volume 84, # 4, Aug 1, 2020

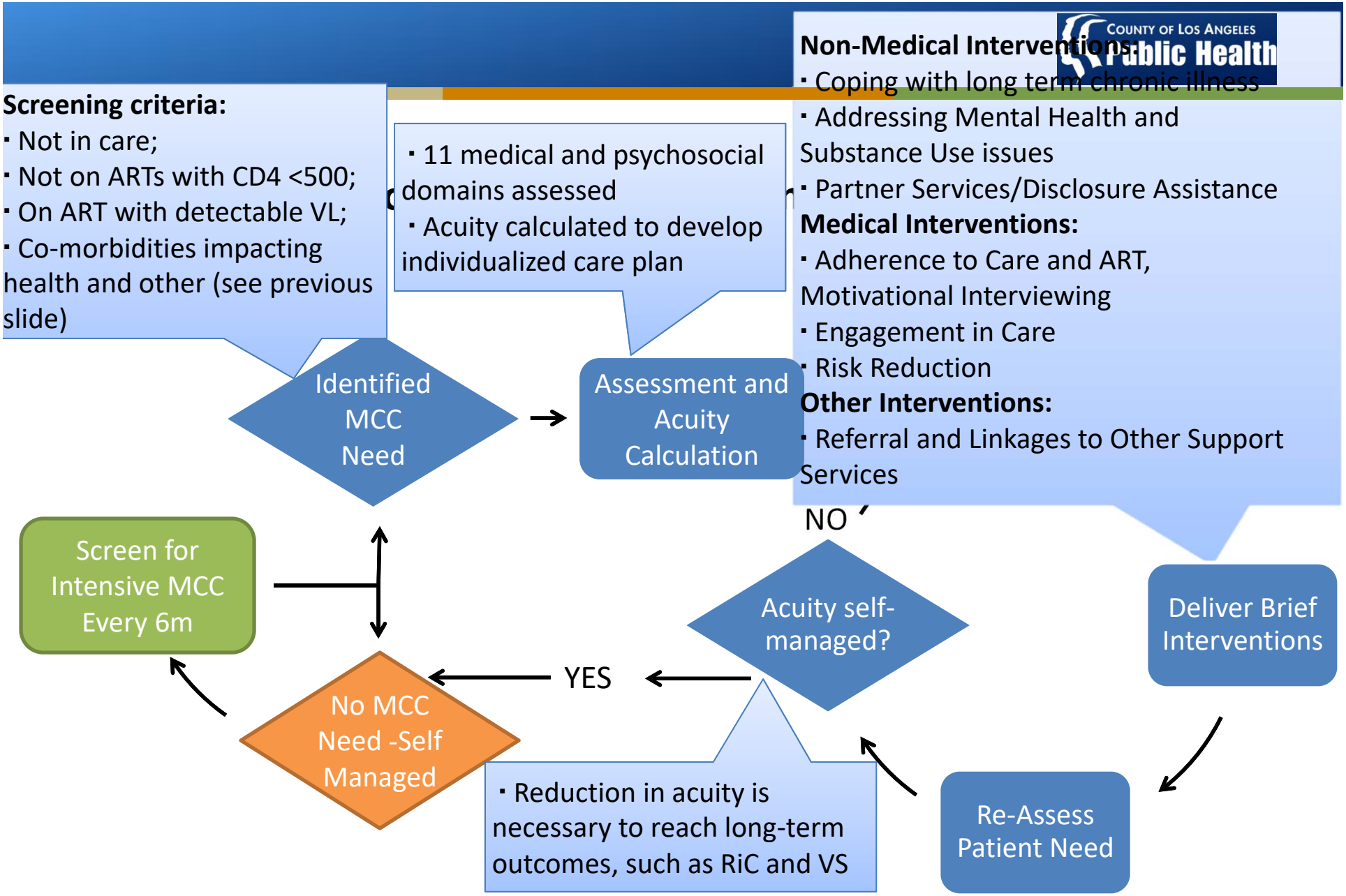
Medical Care Coordination Program

- MCC integrates medical and non-medical case management services to address unmet needs among clients at risk for poor health outcomes
- Acuity assessment is a key activity to ensure that appropriate services are directed to clients with the greatest need
- Delivered by a multidisciplinary teams located at RW-funded medical home (RN, Master's-level Social Worker, Case Worker, Retention Specialist)
- Currently funded at 23 agencies representing 35 Ryan White HIV medical homes in LAC

Clients Prioritized for MCC Services

People living with HIV who:

- Are not in medical care
  - Recently diagnosed (<6 months)
  - Out of care 7 months or more
- Are not on ART with CD4 count <500
- Are on ART, but have unsuppressed viral load (>200 copies/mL)
- Experiencing multiple medical and/or psychosocial co-morbidities that negatively affect health status
- Were recently incarcerated
- Diagnosed with an STD in the past 6 month
- Experiencing addiction issues that interfere with regular HIV care
- Referred by medical care provider


Screening criteria:
· Not in care;
· Not on ARTs with CD4 <500;
· On ART with detectable VL;
· Co-morbidities impacting health and other (see previous slide)
· 11 medical and psychosocial domains assessed
· Acuity calculated to develop individualized care plan
Non-Medical Interventions:
· Coping with long term chronic illness
· Addressing Mental Health and Substance Use issues
· Partner Services/Disclosure Assistance
Medical Interventions:
· Adherence to Care and ART, Motivational Interviewing
· Engagement in Care
· Risk Reduction
Other Interventions:
· Referral and Linkages to Other Support Services
Identified MCC Need
Assessment and Acuity Calculation
NO
Screen for Intensive MCC Every 6m
Acuity self-managed?
Deliver Brief Interventions
YES
No MCC Need -Self Managed
· Reduction in acuity is necessary to reach long-term outcomes, such as RiC and VS
Re-Assess Patient Need

MCC Assessment Domains

- Comprehensive assessment completed at enrollment to identify unmet medical and psychosocial service needs in 11 domains associated with poor engagement in care and ART adherence and calculate acuity level
- Some domains were weighted more heavily than the rest, as having more impact on health outcomes. Those included health status, housing, mental health and substance use

11 DOMAINS

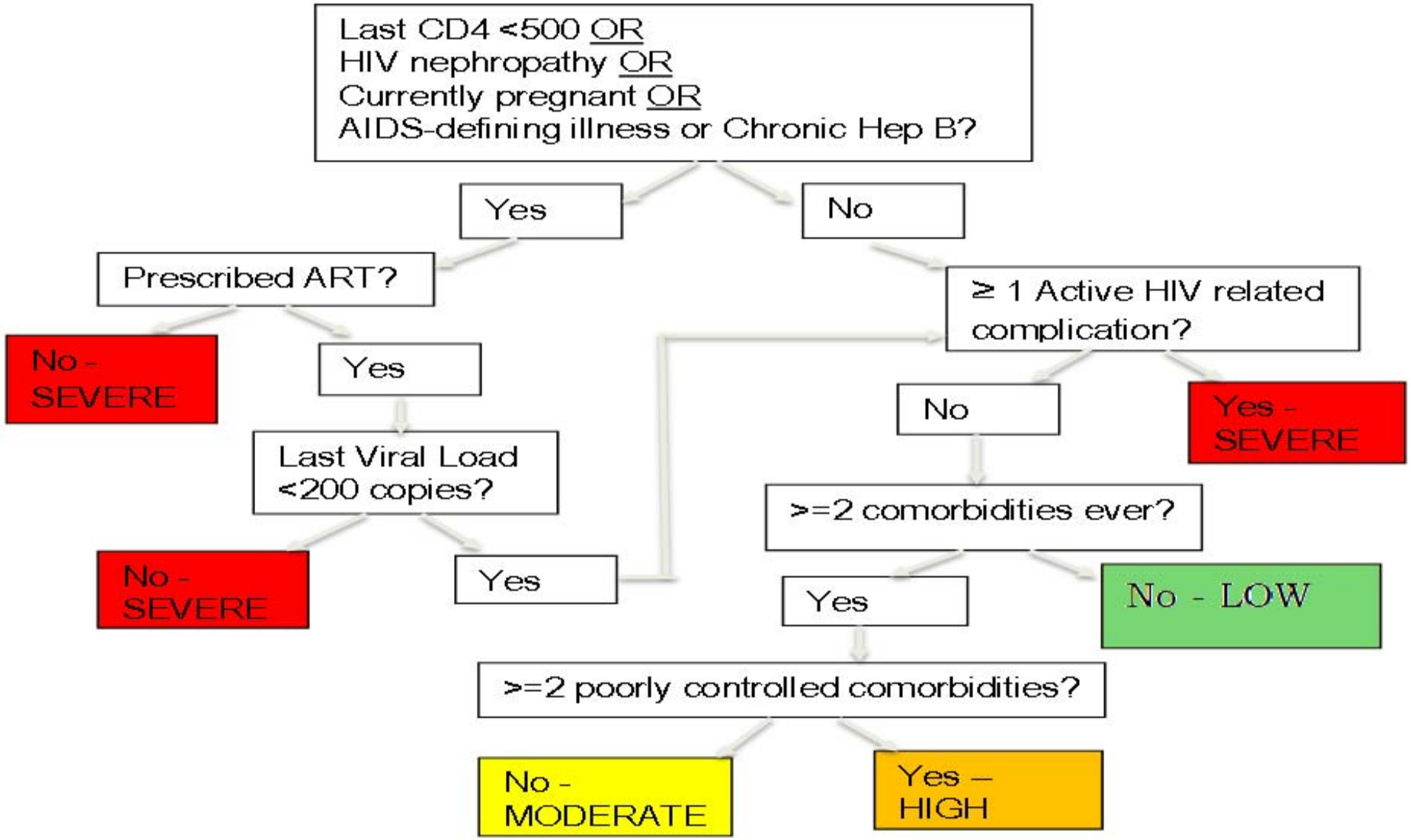
- **Health Status**
- ART Adherence
- Medical Access
- Sexual Risk
- **Substance Use**
- **Mental Health**
- **Housing**
- Quality of Life
- Financial
- Social Support
- Legal Needs

MCC Assessment and Patient Acuity

- Assessment programmed in Casewatch, a RW reporting system
  - Calculates patient acuity by domains and overall
  - Guides service plan development tailored to patient acuity level (low, moderate, high, severe):
    - Use of interventions: ART adherence, risk reduction, engagement in care
    - Linked referrals: Mental and addiction treatment, housing, partner services
  - Follow-up intensity based on patient acuity

Link to MCC guidelines, protocol, assessments, reports:
http://publichealth.lacounty.gov/dhsp/MCC.htm

Example: Calculating Health Status Acuity



Example: Acuity Calculation

Client	Patient, Test	**Case #**	123456
Date Assessment Started		**Client Acuity Level Effective Date**	
Acuity		**Section**	
	Moderate	**Health Status**	
	Low	**Quality of Life**	
	Severe	**Antiretroviral Access and Adherence**	
	Moderate	**Medical Access, Linkage and Retention**	
	Severe	**Housing**	
	Severe	**Financial**	
	Moderate	**Legal/End of Life Needs**	
	High	**Support Systems**	
	Low	**Risk Behaviors**	
	Low	**Alcohol/Drug Use**	
	Moderate	**Mental Health**	
Overall Acuity Score	42	**Overall Acuity Level**	Moderate

MCC Data Sources

❖ **CaseWatch (Jan 2013 – Nov 2019):**

Required data reporting system for Ryan White Part A contracted providers

- Demographic data
- Assessment data
- Service data
- Laboratory data for Viral load, CD4 and genotyping testing

Statistical Measures

Sample population

- MCC clients who had initial assessment and a reassessment.

Outcome Measures:

- Change in acuity level: Improved (acuity level reduced, e.g. from high/severe to moderate or low) vs Not improved (acuity level either stayed the same or increased)

Statistical Methods:

- Descriptive statistics was obtained using frequencies
- Comparisons of acuity levels at re-assessment were performed using chi-square test (categorical) and t-test, Kruskal Wallis test (continuous)

Demographic Characteristics of MCC Patients at Initial Assessment (n=4,755)

- **Race[1]: 49% Latinx**, **29% Black**, 19% White, 4% other
- **Gender[1]**: **84% male**, 13% female, 3% transgender
- **Age[1]: 51% age 40 years and older**
- **Income[1]: 73% at or below federal poverty level**
- **Insurance Status[1]: 90% uninsured**
- **Language[1]: 22% Spanish-speaking**
- **Housing Status[2]: 26% homeless in the past 6 m**

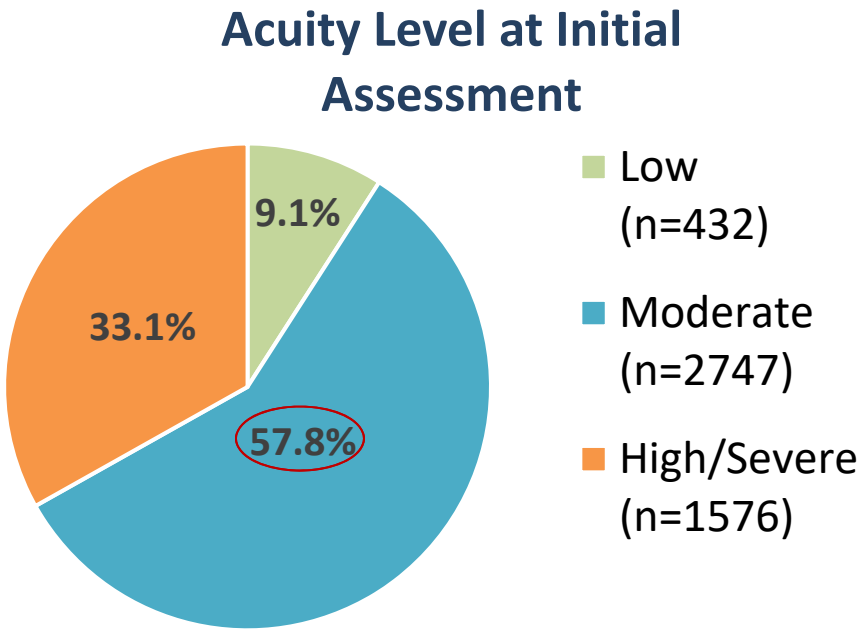
[1]Provider reported; [2]patient self-report

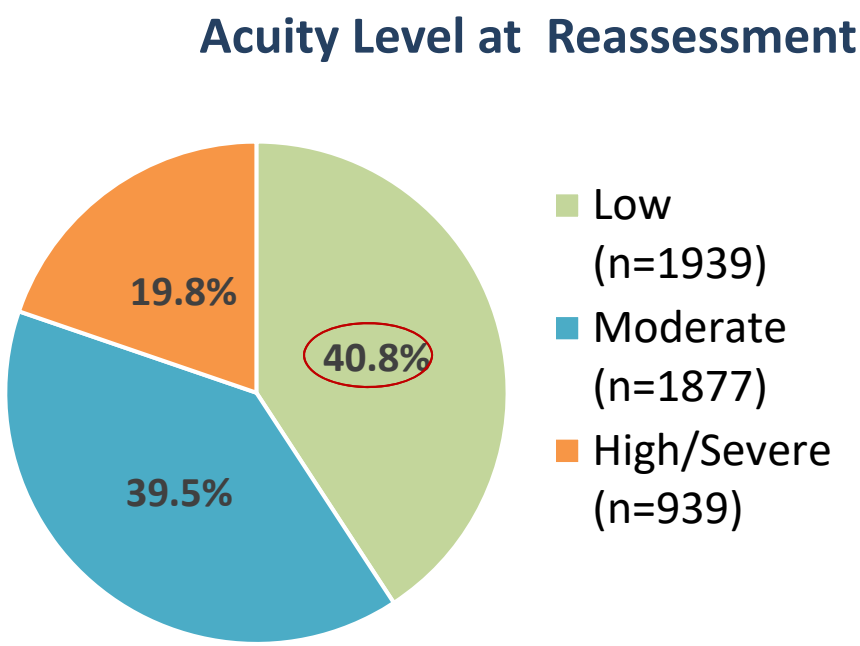
Clinical and Behavioral Characteristics of MCC Patients at Initial Assessment (n= 4,755)

- **Incarceration History[2]: 9% ever incarcerated, 6% - in the past 6m**
- **Sexual Risk Behavior[1,2]:**
  - **24% diagnosed with an STD in the past 6 months**
- **Behavioral health[2]**
  - **56% reported current drug/alcohol use in the past 6 months**
    - 24% of which met screening criteria for potential addiction
    - 7% reported intravenous drug use (IDU)
  - **33% met PHQ-9 criteria for depressive disorder**
  - **30% met GAD-7 criteria for anxiety disorder**
- **Mean years since HIV diagnosis[1]: 7.9 years** (range 0.003 - 38.9)

[1]Provider reported; [2]patient self-report

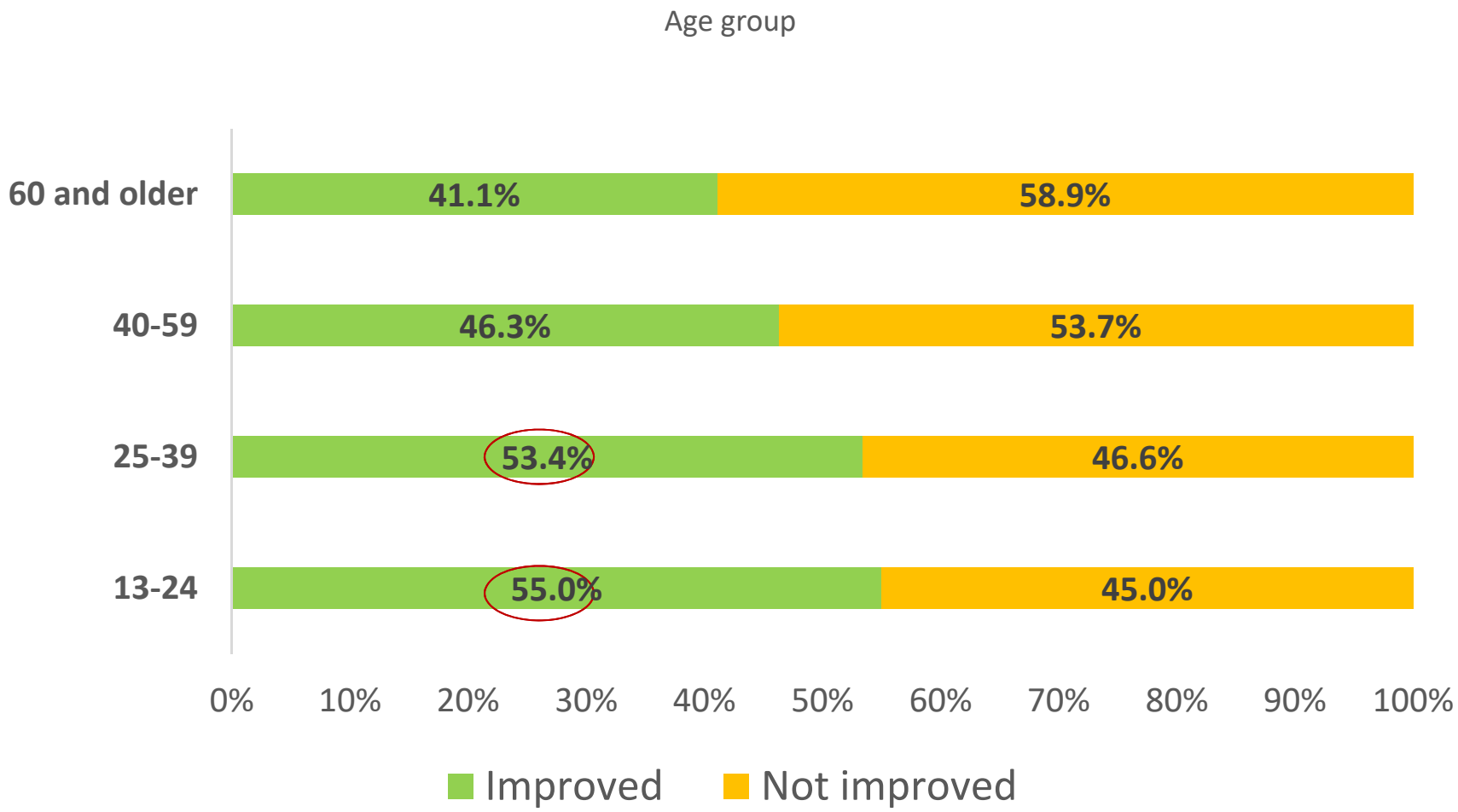
Acuity Level at Initial Assessment and Reassessment



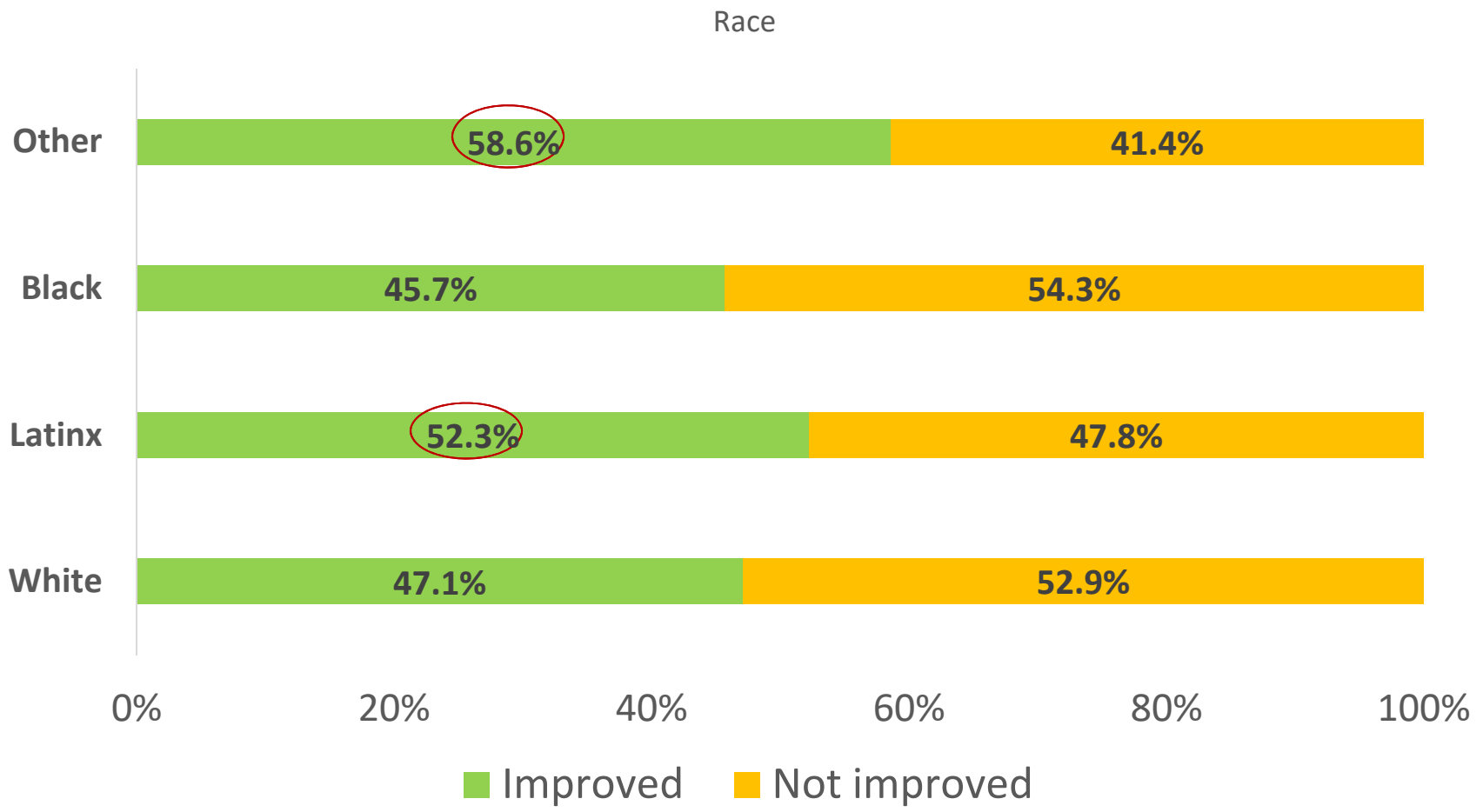


- Median time between assessments was 7 months (mean=9)
- 2361 (50%) at reassessment had a significant reduction in acuity level
- Among high/severe acuity patients 41% decreased acuity level to moderate and 18% to low acuity ($p<0.0001$)
- Among moderate acuity clients 52% decreased their acuity level to low at reassessment ($p<0.0001$)

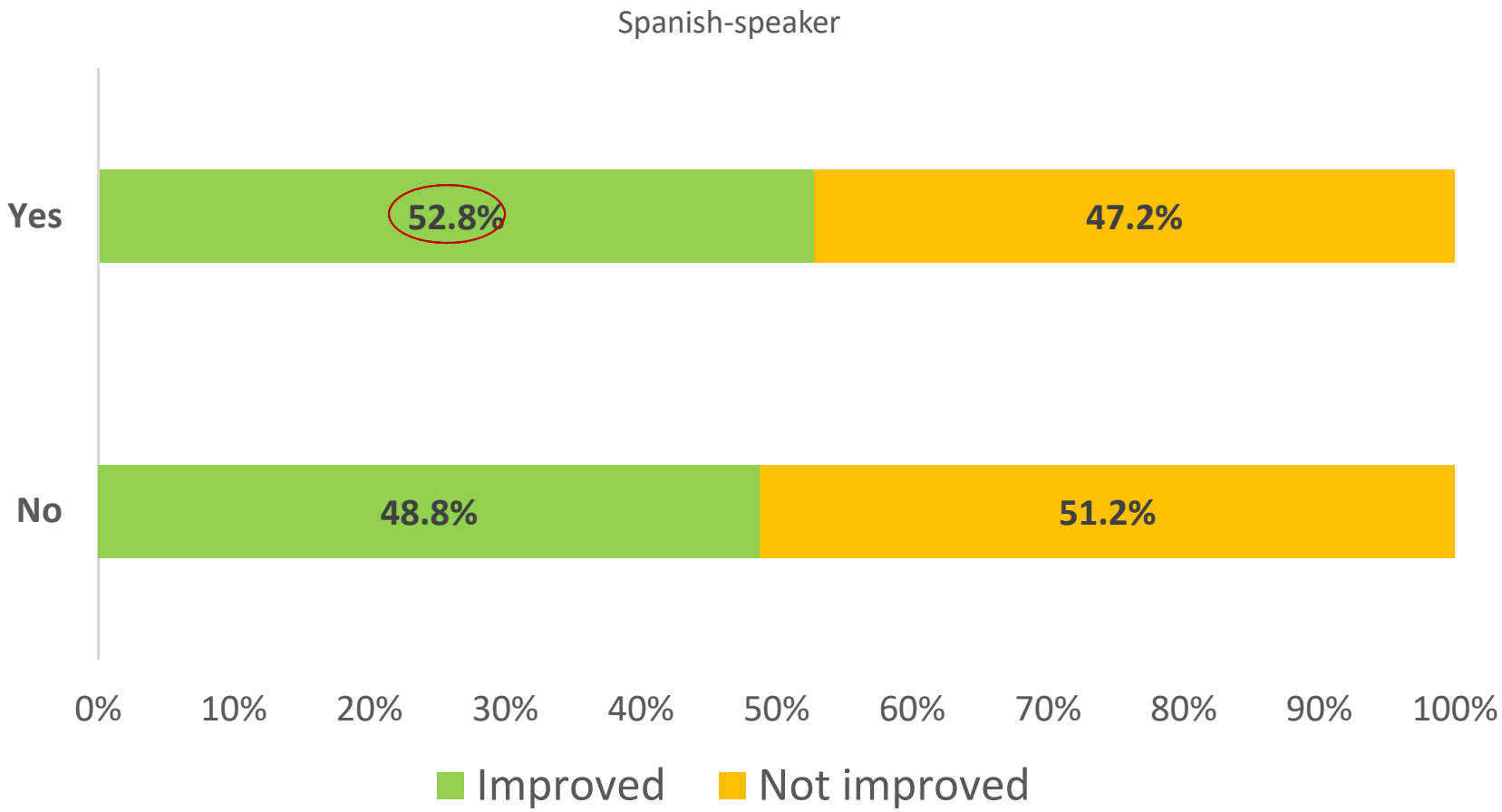
Change in Acuity by Age Group



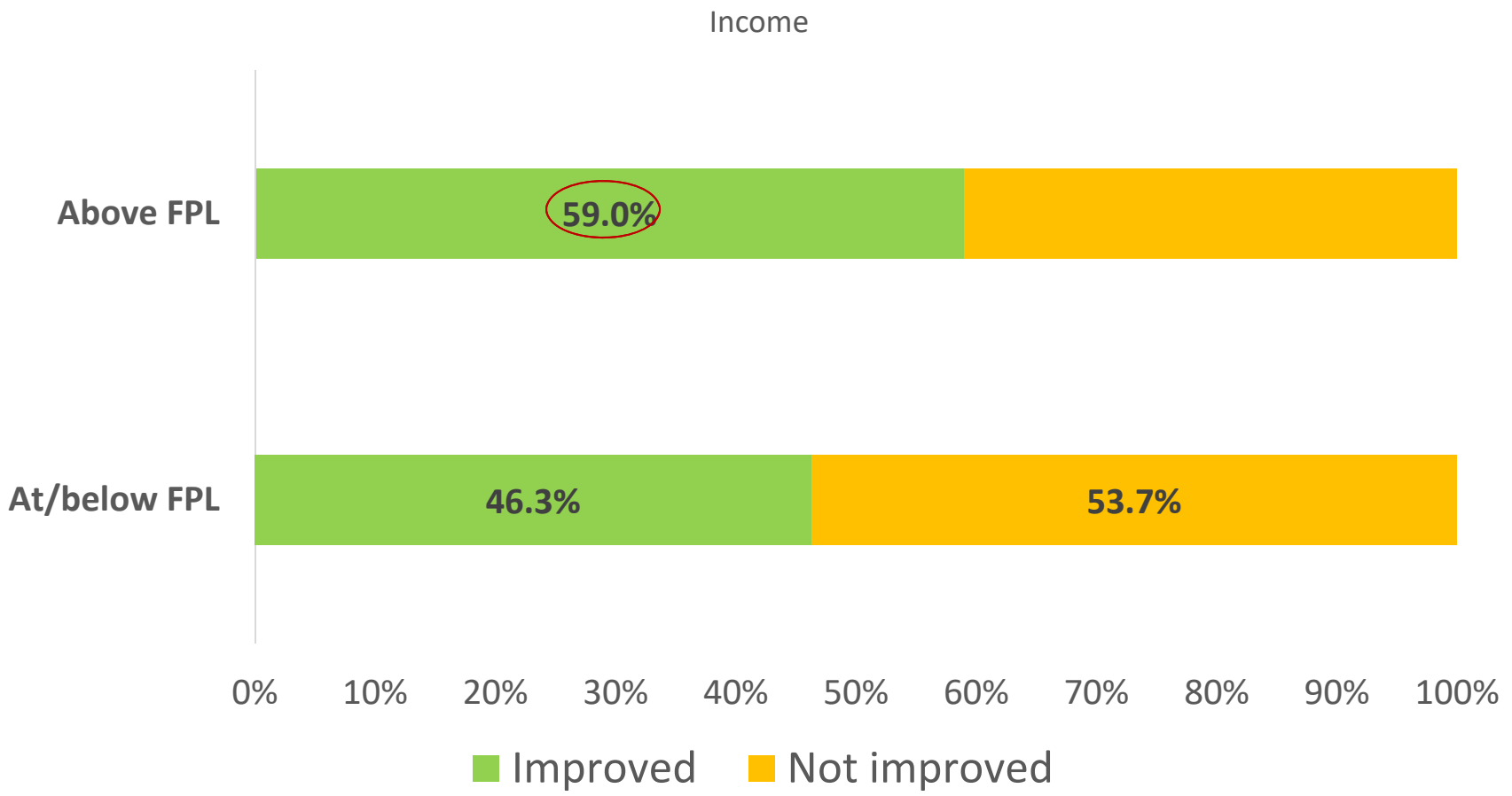
Change in Acuity by Race/Ethnicity



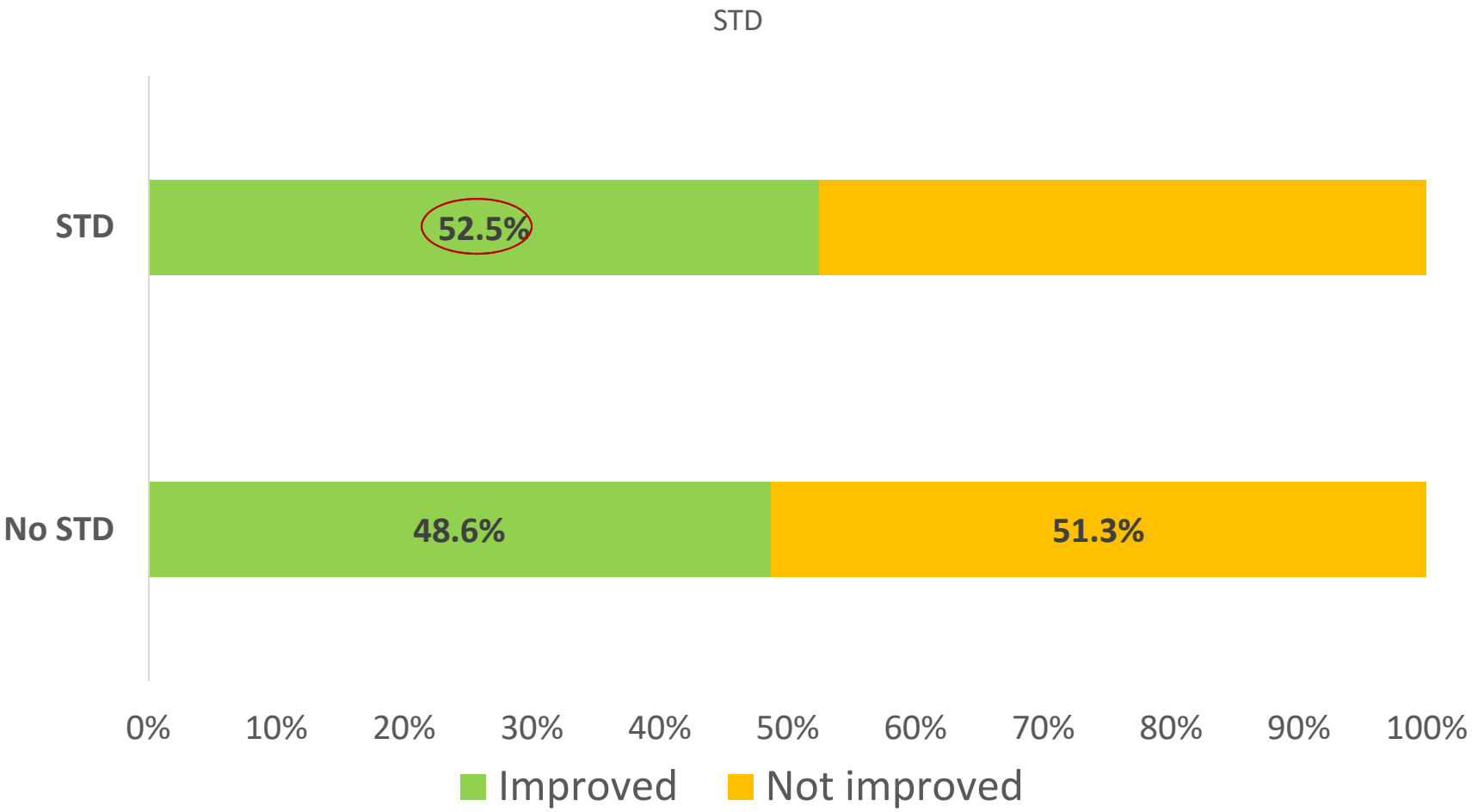
Change in Acuity by Spanish-speaker



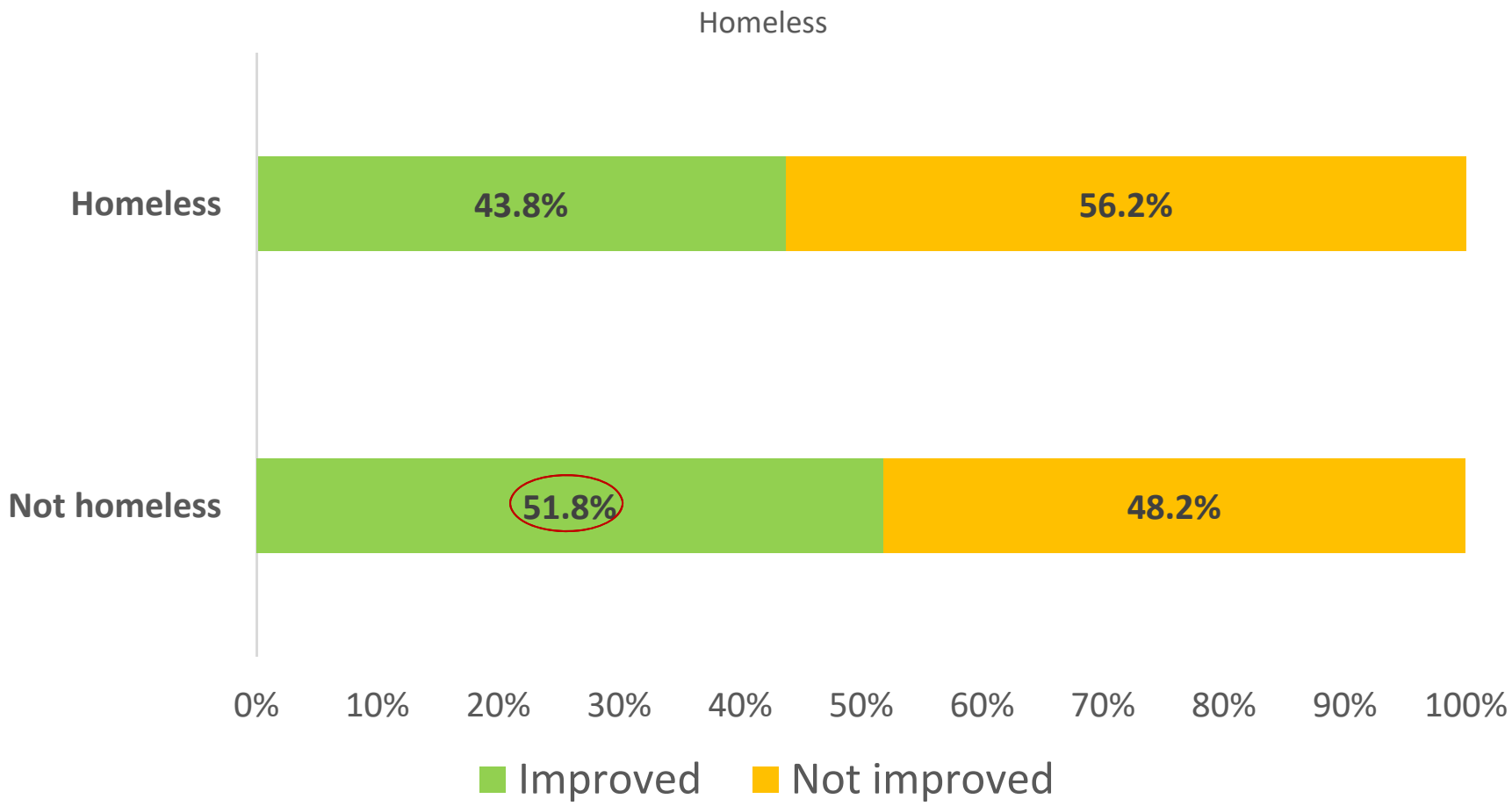
Change in Acuity by Income Level



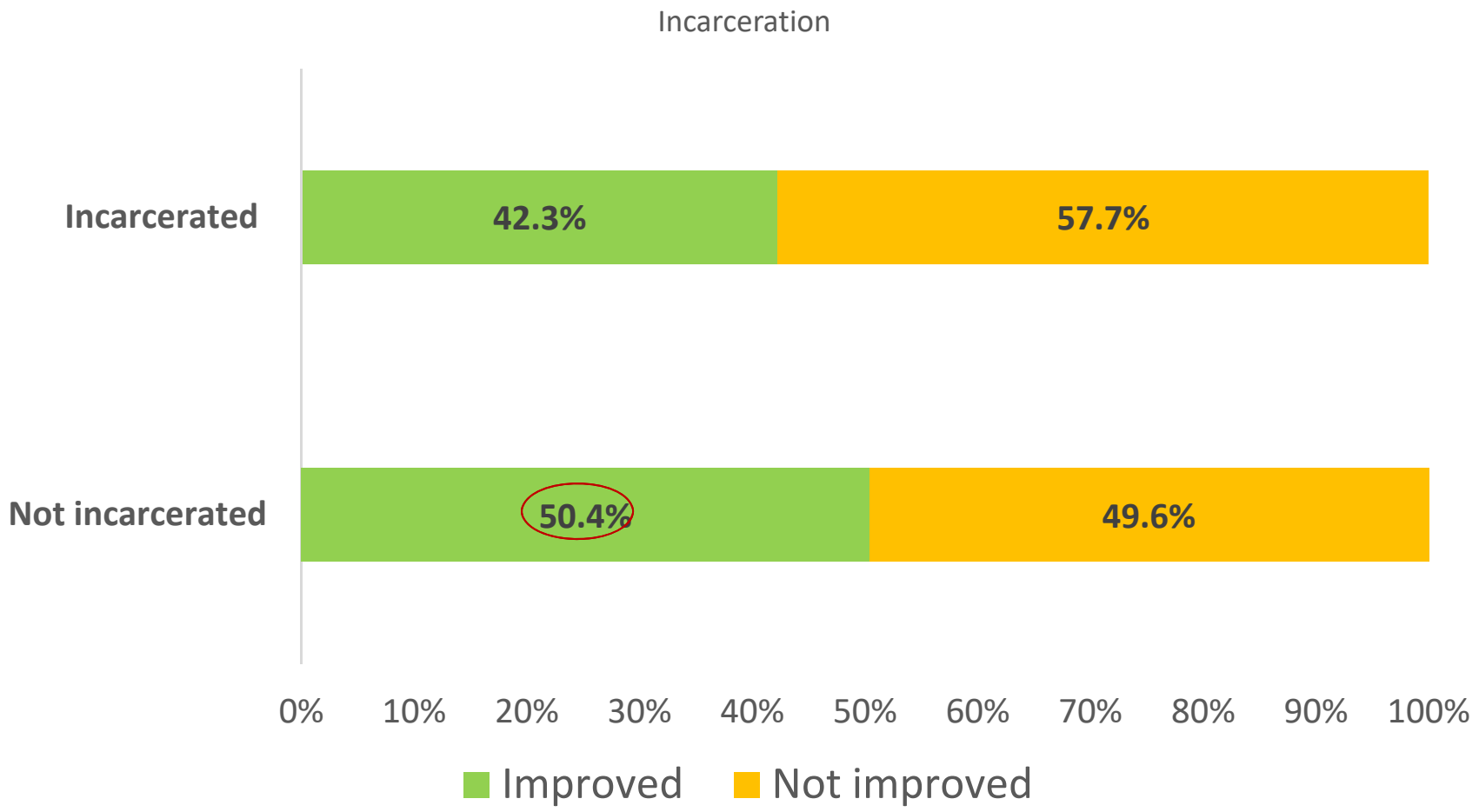
Acuity Change Among Clients Diagnosed with an STD in the Past 6 months



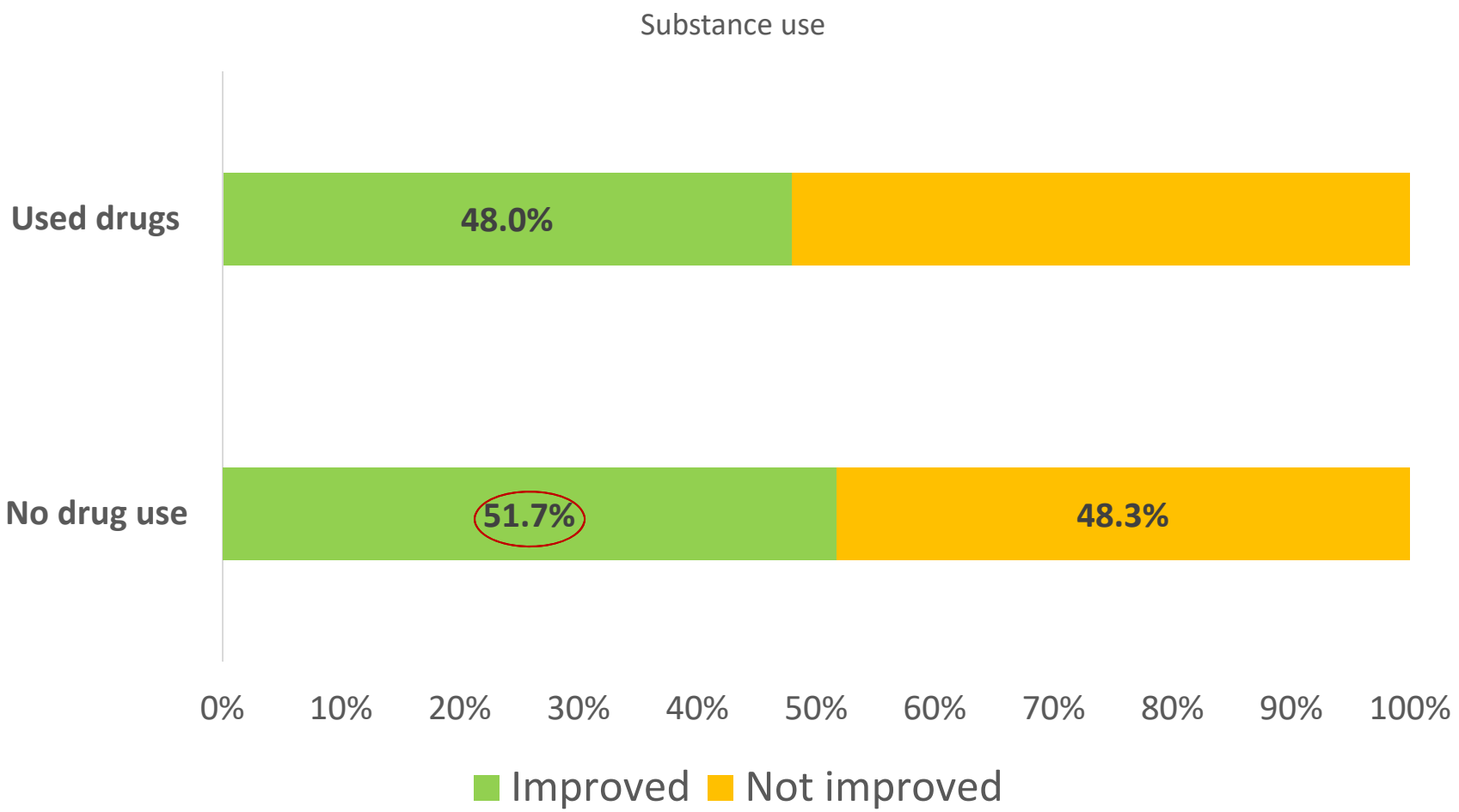
Change in Acuity by Recent Homelessness Experience



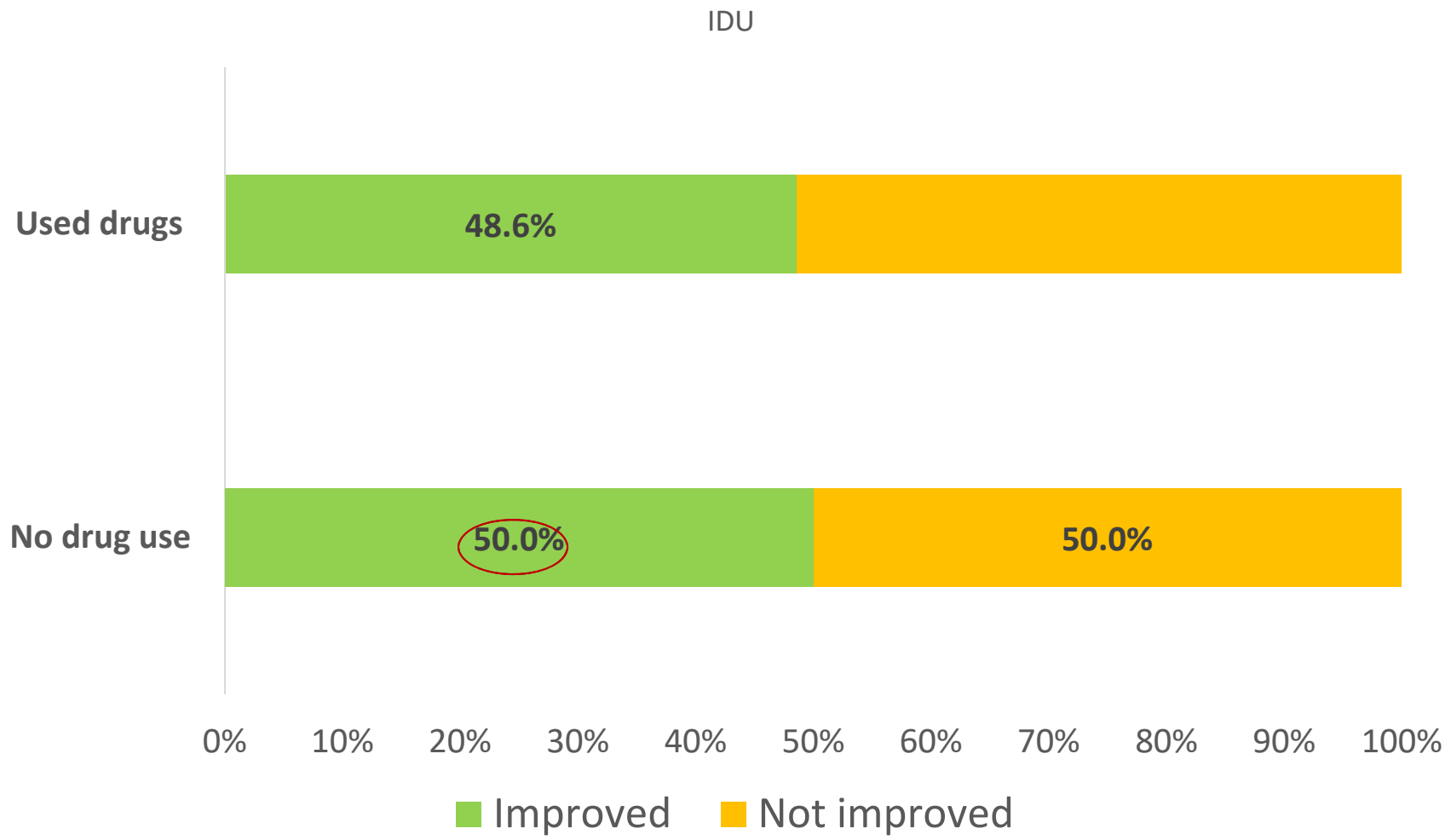
Change in Acuity by Recent Incarceration



Acuity Change and Reported Recent Substance Use



Acuity Change By Reported Recent Injection Drug Use



Changes in Acuity (Summary)

Significant reductions in acuity level was detected among clients who were

- Aged 40 or younger
- Latinx race/ethnicity
- Living above FPL
- Spanish-speaking
- Diagnosed with an STD in the past 6 months

Reductions in acuity were not observed for clients

- Experiencing homelessness
- Recently incarcerated
- Reporting recent substance use or injection drug use

Conclusions and Recommendations

- We developed and used an objective and standardized tool to assess acuity among clients at risk for poor health outcomes.
- The large proportion of MCC clients experienced a significant reduction in acuity level following receipt of MCC services.
- Not all groups experienced the same degree of reduction in acuity level, particularly those who recently experienced homelessness, incarceration, IDU and substance use.
- More targeted interventions and additional resources may be needed for MCC teams to address needs of those MCC clients.
- Addressing the needs of those vulnerable groups of MCC clients, reducing their acuity and consecutively increasing their RiC and VS are essential steps in achieving Ending the HIV Epidemic national strategy goals.

Conclusions and Recommendations (cont.)

- Future analyses:
  - To understand the relationships between clinical outcomes, such as RiC and VS, and acuity levels, and how various characteristics and factors and, especially their combinations, might be associated with failure to reduce acuity level by multivariable modeling.
  - MCC service received and their association with changes in acuity level, which will allow MCC managers and teams to prioritize services to address those identified factors. The prioritization of services and interventions is particularly important in limited resource settings and may lead to better outcomes with less resources.
- In conclusion, we recommend use of this standardized acuity assessment tool in other jurisdiction as it is proved to be an objective one, feasible and useful to characterize the needs of clients to identify their service needs and provided targeted and individualized interventions.

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Contact Information

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Division of HIV and STD Programs

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Thank you!

Stay safe and healthy!