

# Comparison of Unique Hospitalization Rates Between Initiating Long-acting Injectable Aripiprazole and Aripiprazole Lauroxil for Psychiatric Conditions

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U.S. Department of Veterans Affairs

Veterans Health Administration

Robert J. Dole VA Medical Center

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- Rindy Marquez, PharmD
- The speaker has no actual or potential conflict of interest in relation to this presentation
- The views expressed in this presentation are those of the speaker and do not necessarily reflect the position or policy of the Department of Veterans Affairs or the United States government
- This pertains to commercial or financial relationships with the following
  - Pharmaceutical Companies
  - Biomedical Device Manufacturers
  - Other Organizations (whose products or services are related to the subject matter of the presentation topic)

# Learning Objective

Discuss the difference between **Aristada**<sup>®</sup> (aripiprazole lauroxil) and **Abilify Maintena**<sup>®</sup> (aripiprazole monohydrate) on rates of hospitalization for psychiatric events within one year after initiation

# Robert J. Dole VA Medical Center Wichita, Kansas

- Serves over 30,000 Veterans across 59 counties in Kansas
- In 2023, there was a total of 29,905 behavioral health (BH) visits
- 22 BH providers
  - 4 BH clinical pharmacist practitioners



## Assessment Question

Long-acting atypical antipsychotics are known to reduce hospitalizations in patients with psychiatric disorders compared to oral antipsychotics

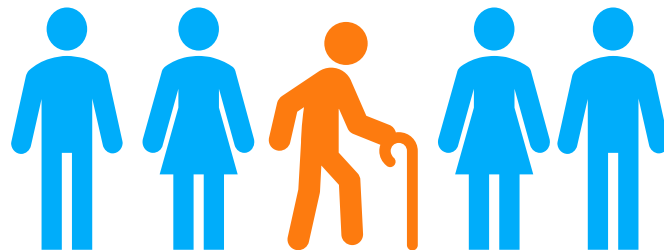
True

or

False

# Background

- In the United States, 1 in 5 adults are living with a mental illness
  - Increased risk in Veterans



# Background

- In the United States, 1 in 5 adults are living with a mental illness
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- Long-acting injectable (LAI) antipsychotics have been shown to reduce hospitalizations, reduce relapse, and increase adherence in patients with psychiatric disorders

**Long-acting injectable  
antipsychotics**



hospitalizations



relapse



adherence

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- Abilify Maintena<sup>®</sup> (aripiprazole monohydrate) was on formulary prior to the addition of Aristada<sup>®</sup> (aripiprazole lauroxil) in September 2019



# Background

- In the United States, 1 in 5 adults are living with a mental illness
  - Increased risk in Veterans
- Long-acting injectable (LAI) antipsychotics have been shown to reduce hospitalizations, reduce relapse, and increase adherence in patients with psychiatric disorders
- Abilify Maintena<sup>®</sup> (aripiprazole monohydrate) was on formulary prior to the addition of Aristada<sup>®</sup> (aripiprazole lauroxil) in September 2019
- No known head-to-head trials between Abilify Maintena<sup>®</sup> and Aristada<sup>®</sup>

# Comparison of Injectable Aripiprazole Products

## Abilify Maintena®

- Active Drug
- 14-day oral overlap with initiation
- Monthly injection
- FDA approved treatment of schizophrenia and bipolar I disorder

## Aristada®

- Prodrug
- One-day oral overlap + Initio® formulation + Aristada **OR** 21-day oral overlap for initiation
- Monthly, 6-week, or 8-week injection
- FDA approved for treatment of schizophrenia

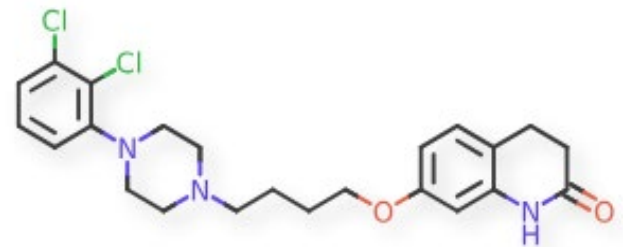


Figure 1

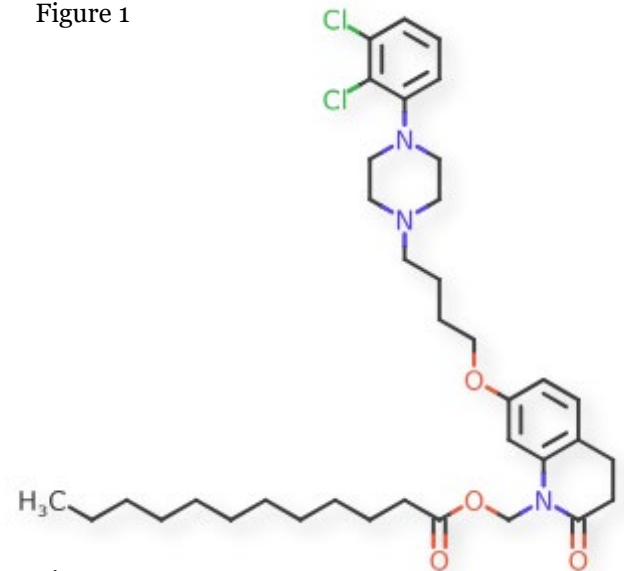


Figure 2

# Study Objectives

## *Primary*

- Compare the number of hospitalizations for psychiatric symptoms in the one year following initiation of Aristada<sup>®</sup> or Abilify Maintena<sup>®</sup>

## *Secondary*

Compare Aristada<sup>®</sup> and Abilify Maintena<sup>®</sup> on the:

- Number of emergency department (ED) visits for psychiatric symptoms
- Mean time maintained on medication
- Rate of discontinuation
- Number of documented missed doses

# Study Design

- Single-center, retrospective chart review
- Veterans that were initiated on either Aristada<sup>®</sup> or Abilify Maintena<sup>®</sup> between 09/01/2019 and 09/01/2022
- Evaluated Veterans for 1 year following initiation of Aristada<sup>®</sup> or Abilify Maintena<sup>®</sup> between 09/01/2019 and 09/01/2023

# Inclusion and Exclusion Criteria

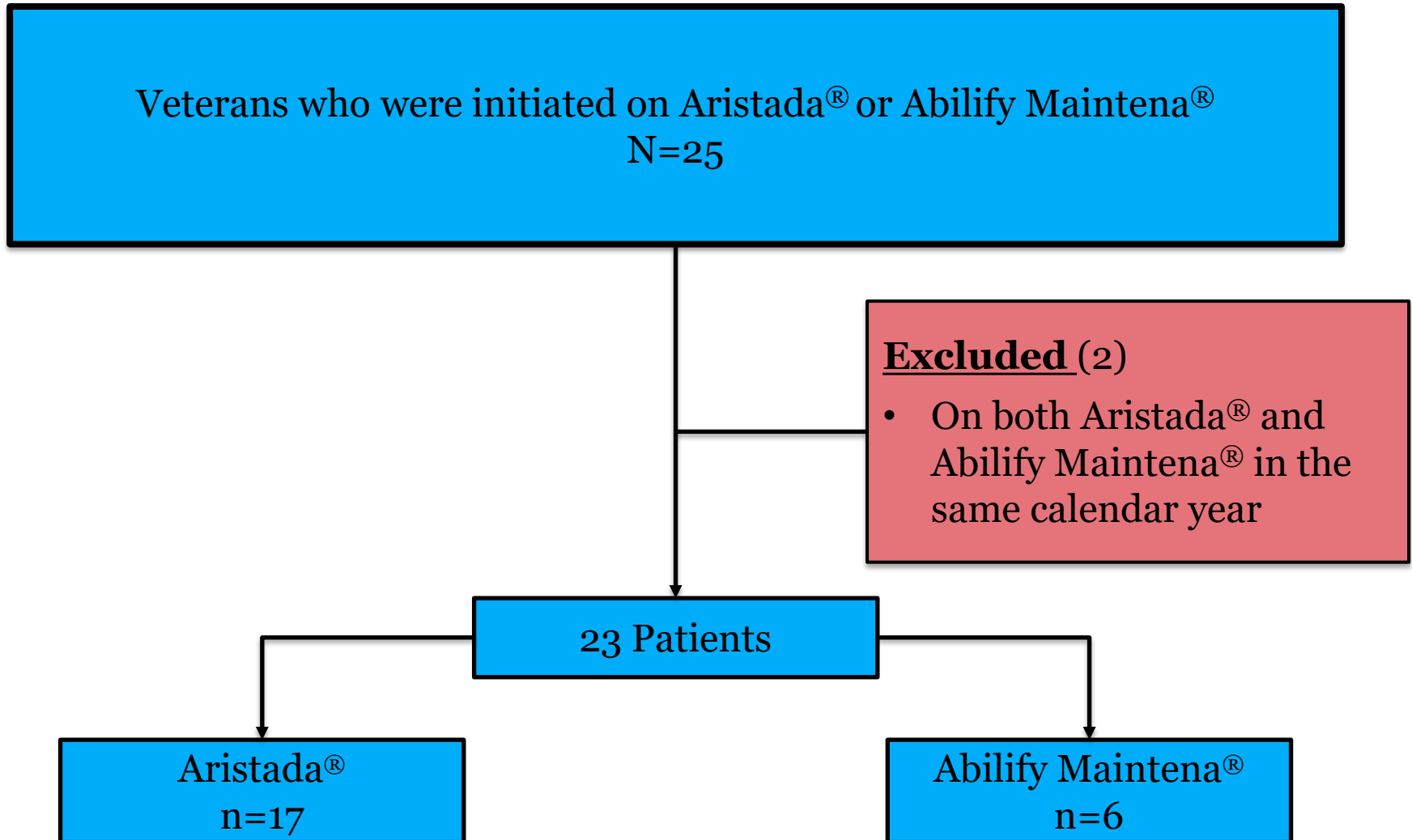
## ***Inclusion Criteria:***

- Initiation of either Aristada<sup>®</sup> or Abilify Maintena<sup>®</sup> between 09/01/2019 – 09/01/2022
- Diagnosis of bipolar disorder, manic episodes, schizophrenia, schizoaffective disorder, or depressive disorder

## ***Exclusion Criteria:***

- Use of both Aristada<sup>®</sup> and Abilify Maintena<sup>®</sup> in the same calendar year
- Use of >1 antipsychotic medication concurrently
- Pregnancy or lactation
- Documented allergic or adverse drug reaction to aripiprazole

# Inclusion and Exclusion



# Data Collection Points

- Aripiprazole medication information:
  - Type (Aristada<sup>®</sup> or Abilify Maintena<sup>®</sup>)
  - Dose
  - Schedule/frequency
  - Indication based on ICD-10 Code
  - Date of first injection
- Date of hospitalization and ICD-10 Code for primary admitting diagnosis
- Date of ED visit and ICD-10 Code for primary admitting diagnosis
- Date that Aristada<sup>®</sup> or Abilify Maintena<sup>®</sup> order discontinued or expired
- Dates of completed injection encounters

# Demographics

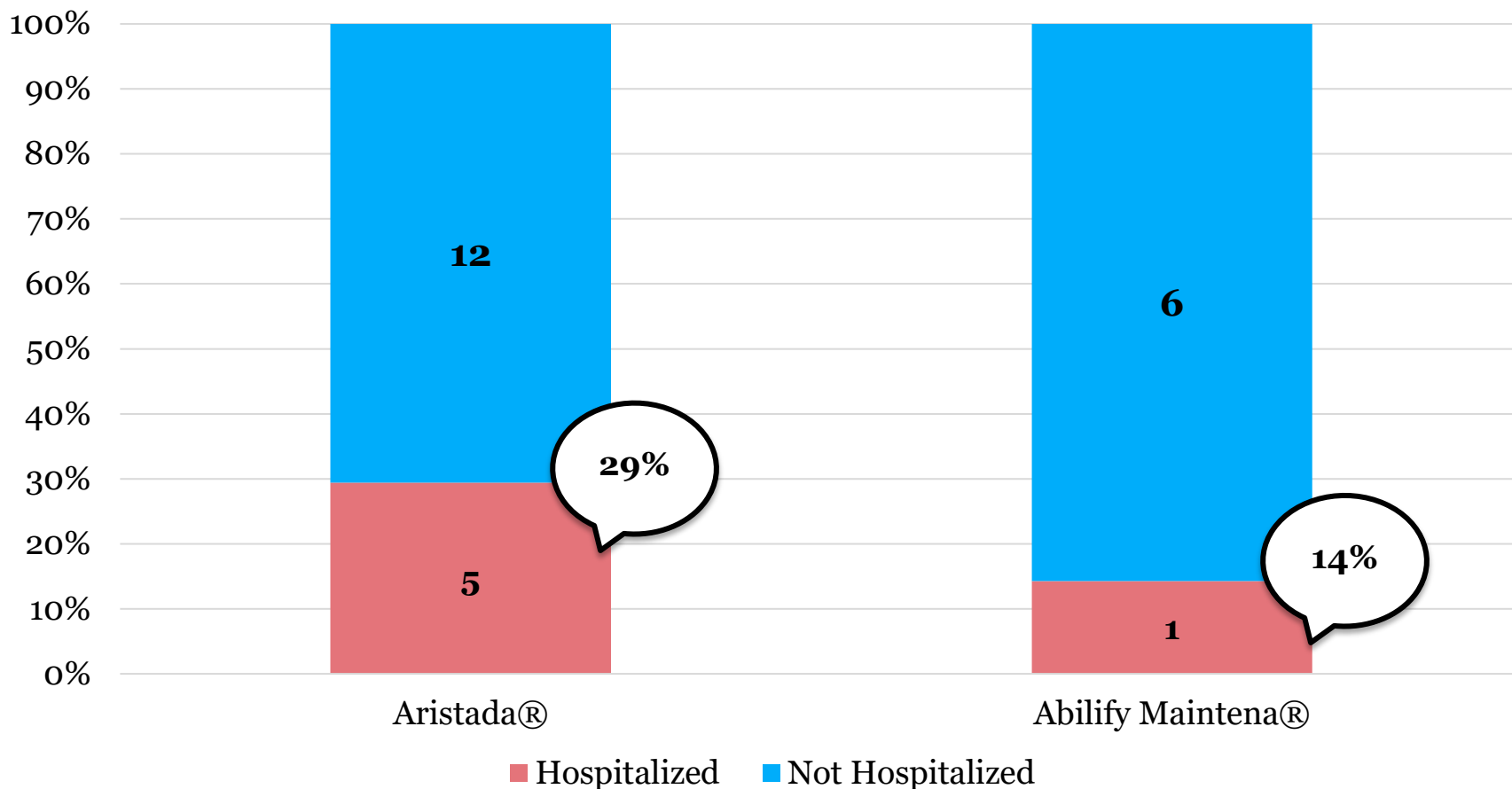
<b>Characteristics</b>	<b>All (N=23)</b>	<b>Aristada (n=17)</b>	<b>Maintena (n=6)</b>
<b>Average age (years)</b>	43.5	44.4	40.8
<b>Male (%)</b>	87	94.1	66.7
<b>Female (%)</b>	13	5.9	33.3
<b>Race (%)</b>			
White	65.2	70.6	50
Black or African American	26.1	23.5	33.3
Asian	4.4	5.9	0
American India or Alaska Native	4.4	0	16.7
<b>Ethnicity no. (%)</b>			
Not Hispanic or Latino	82.6	76.5	100
Hispanic or Latino	17.4	23.5	0
<b>ICD-10 Diagnosis Code (%)</b>			
Bipolar Disorder	52.2	35.3	100
Schizophrenia	43.5	58.8	0
Schizoaffective Disorder	4.4	5.9	0



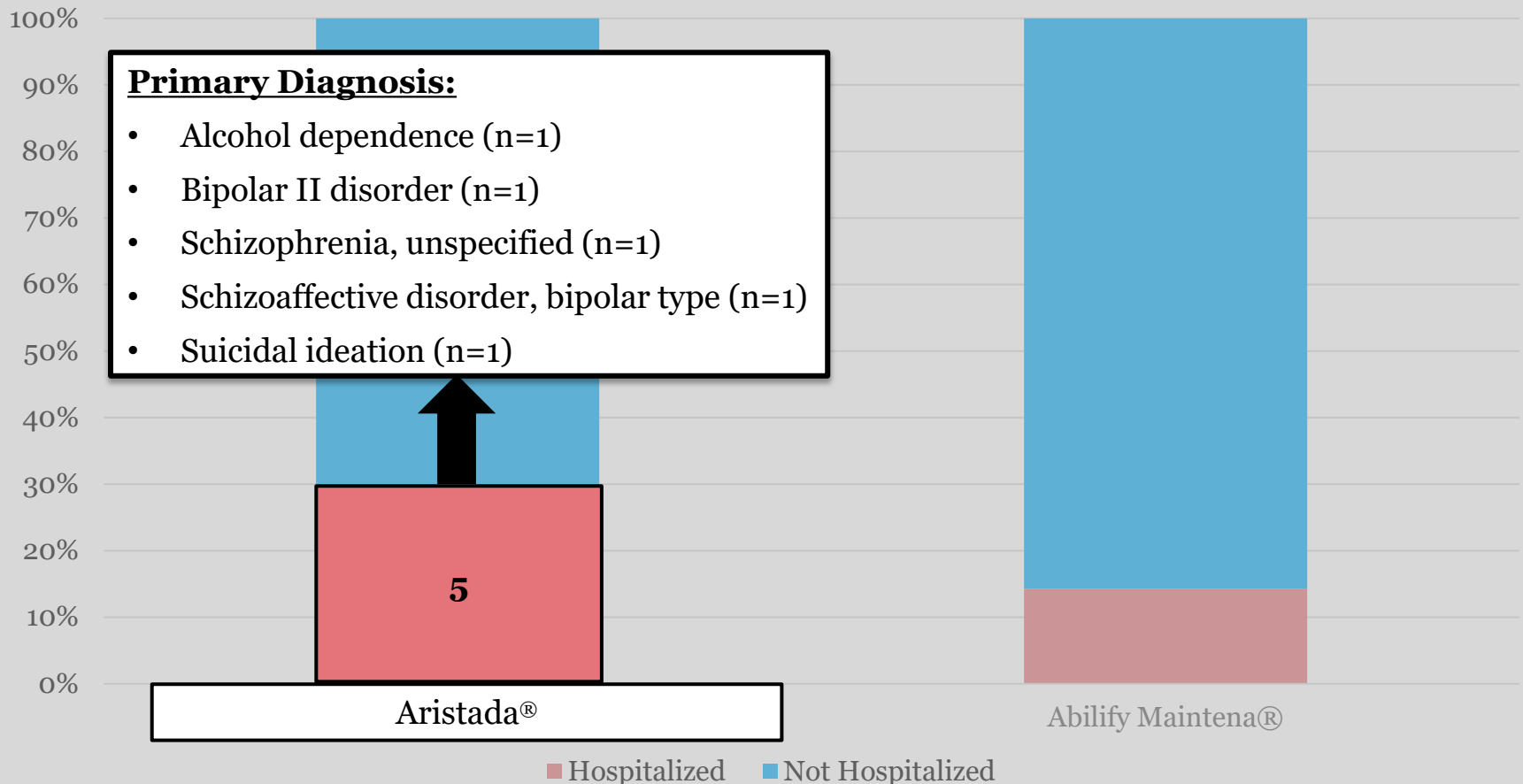
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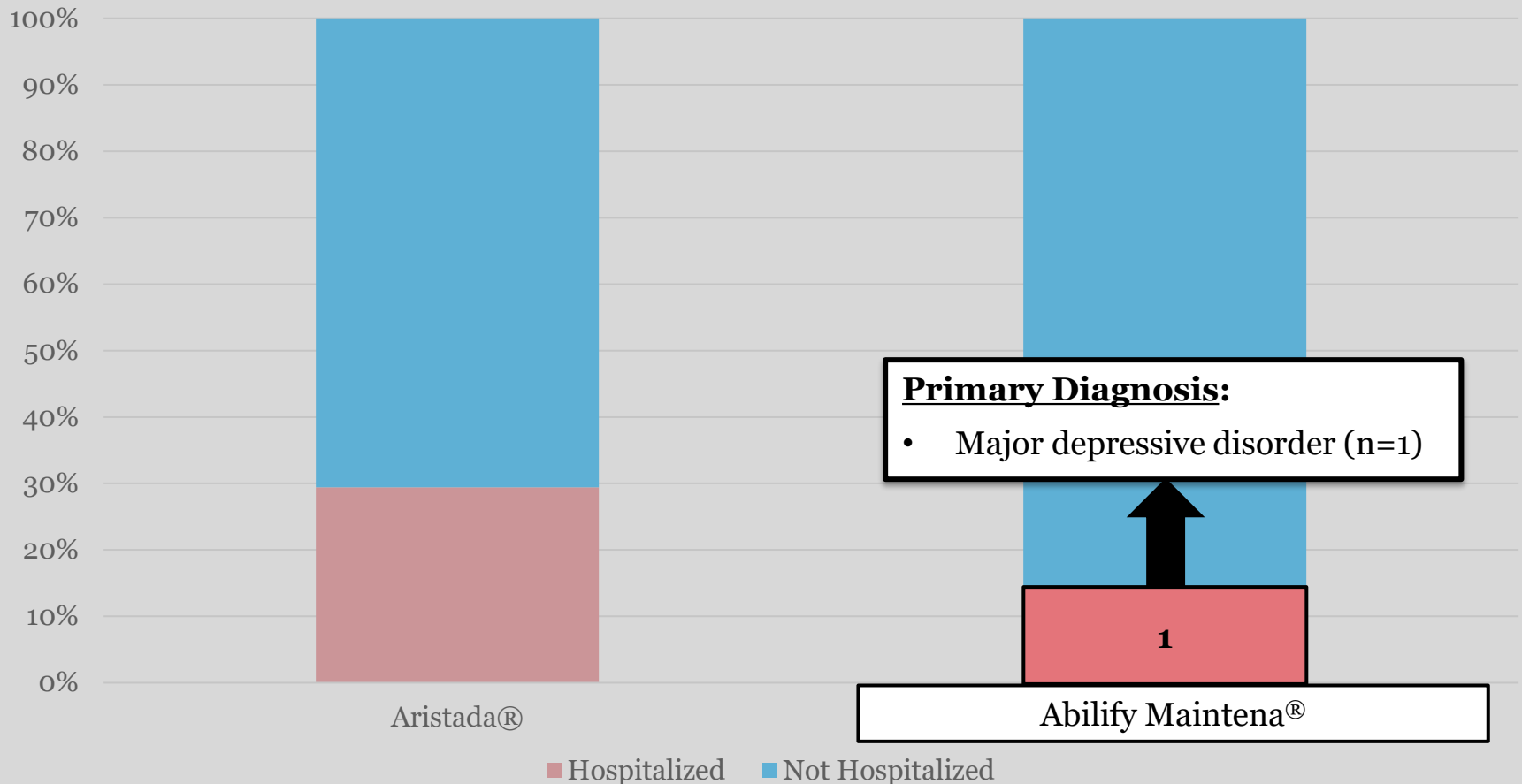
# Hospitalizations 1-year After Initiation ( $p=0.56$ )



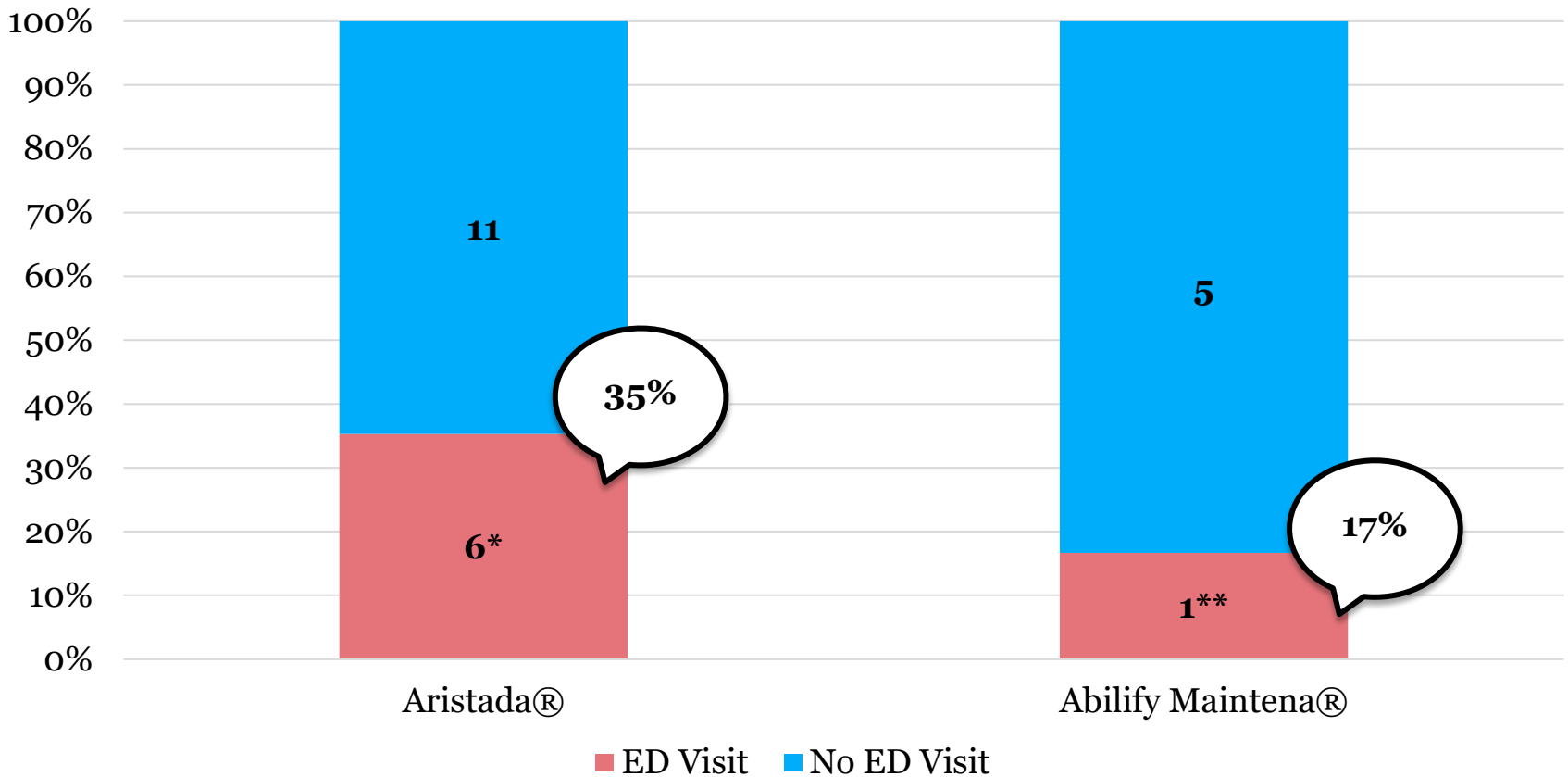
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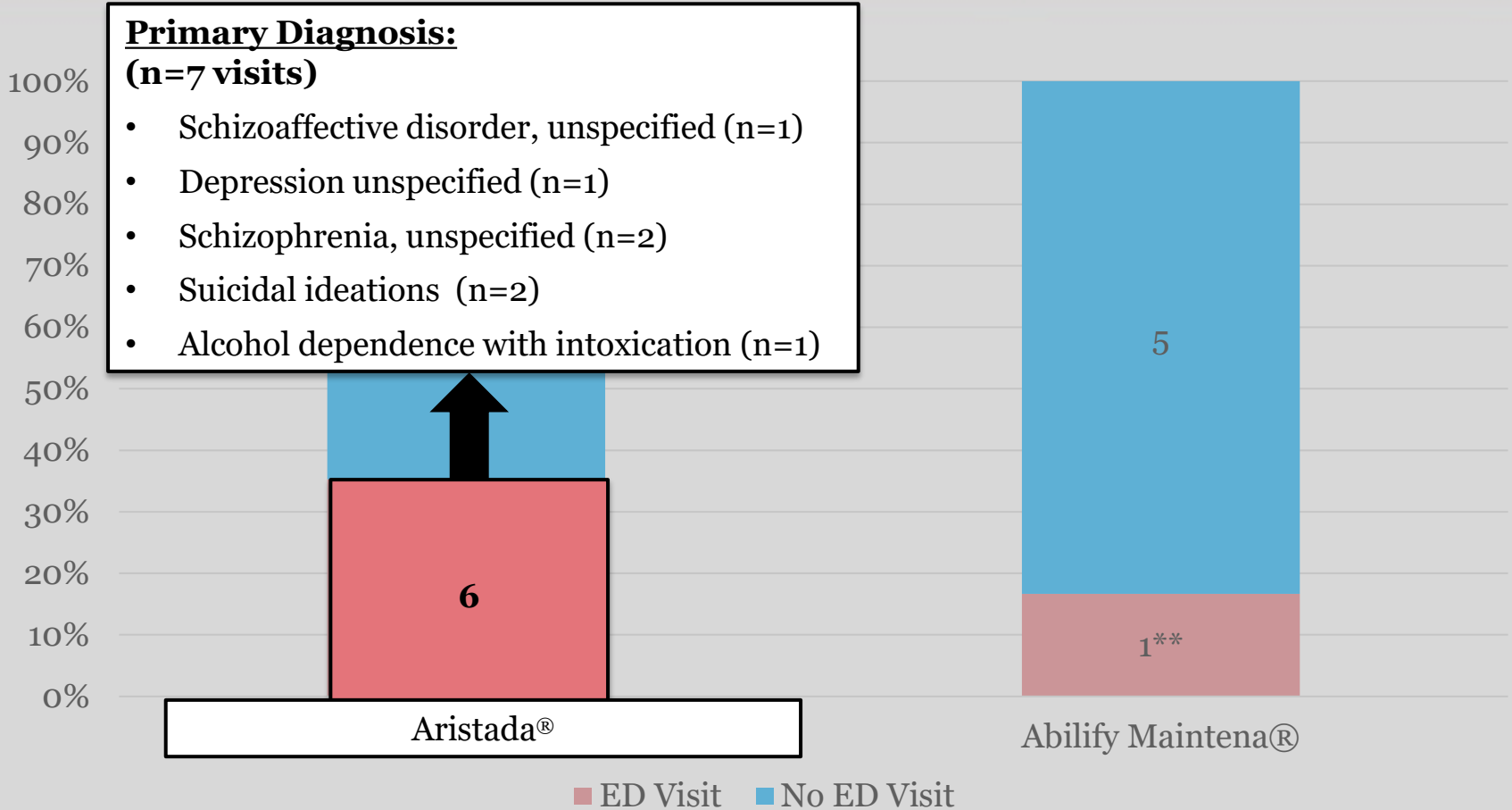


# Patients With An Emergency Department Visit 1-year After Initiation (p=0.81)



\* 1 patient had 2 ED visits  
\*\* 1 patient had 3 ED visits

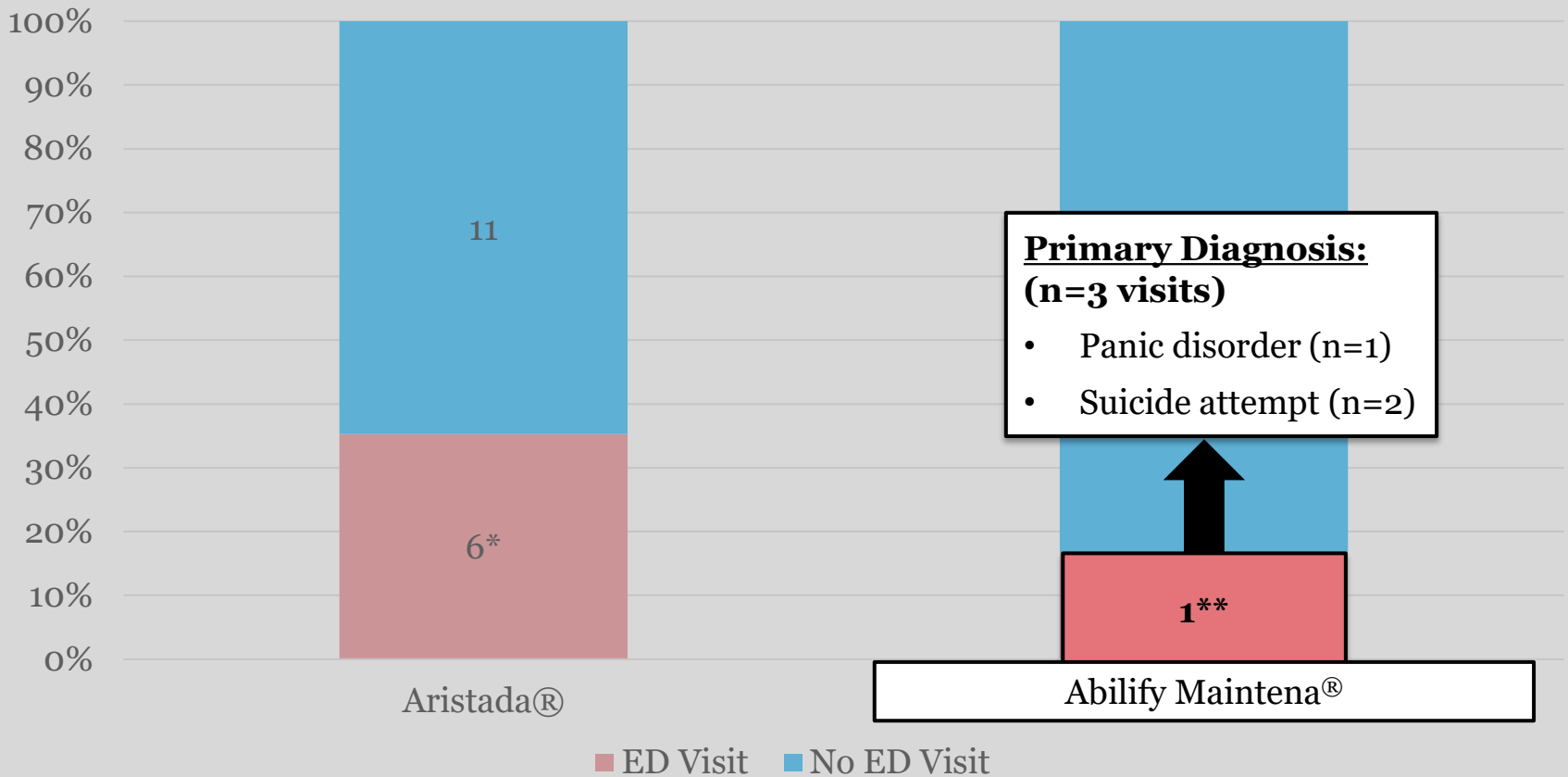
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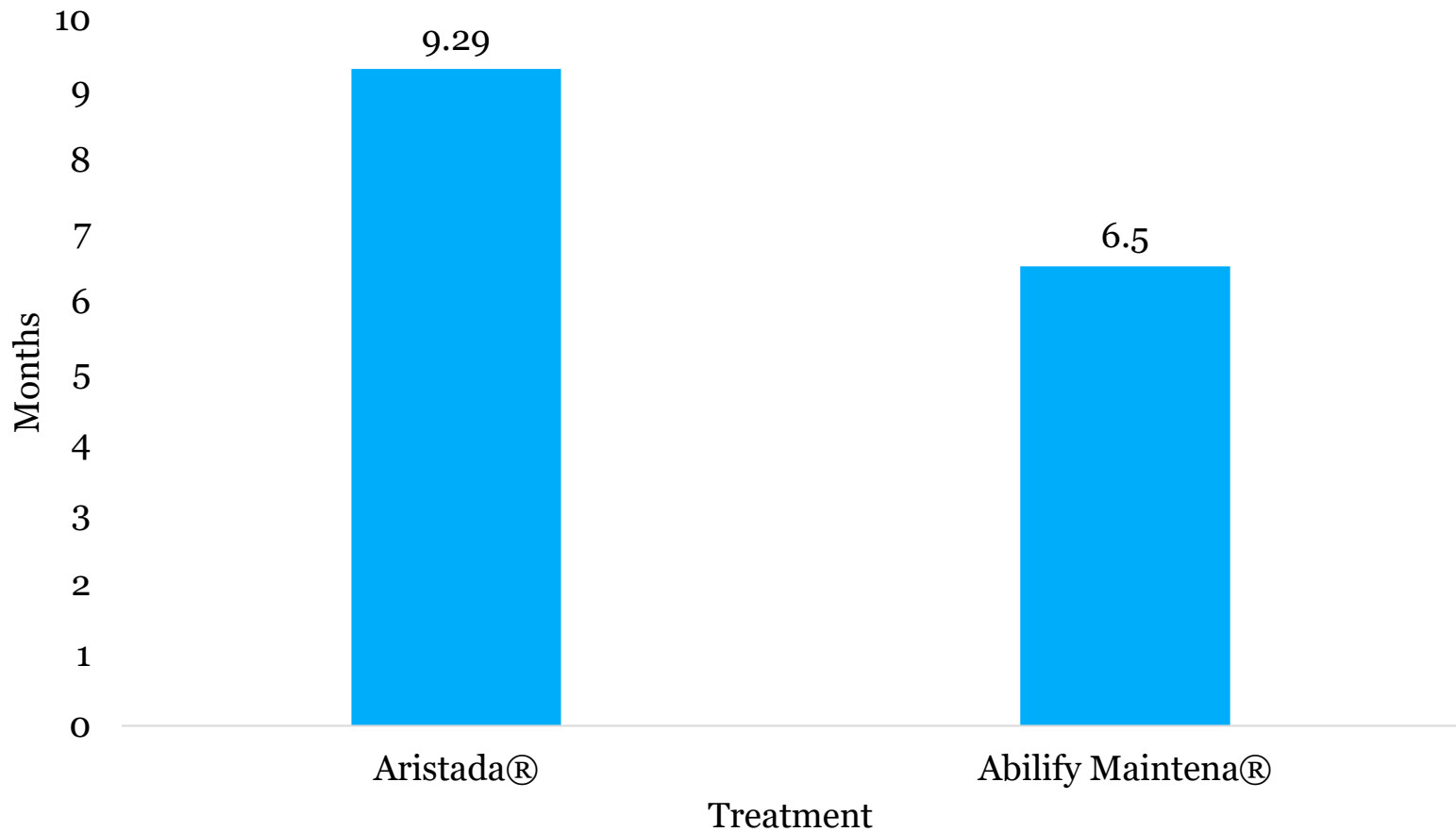
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# Patients With An Emergency Department Visit 1-year After Initiation (p=0.81)



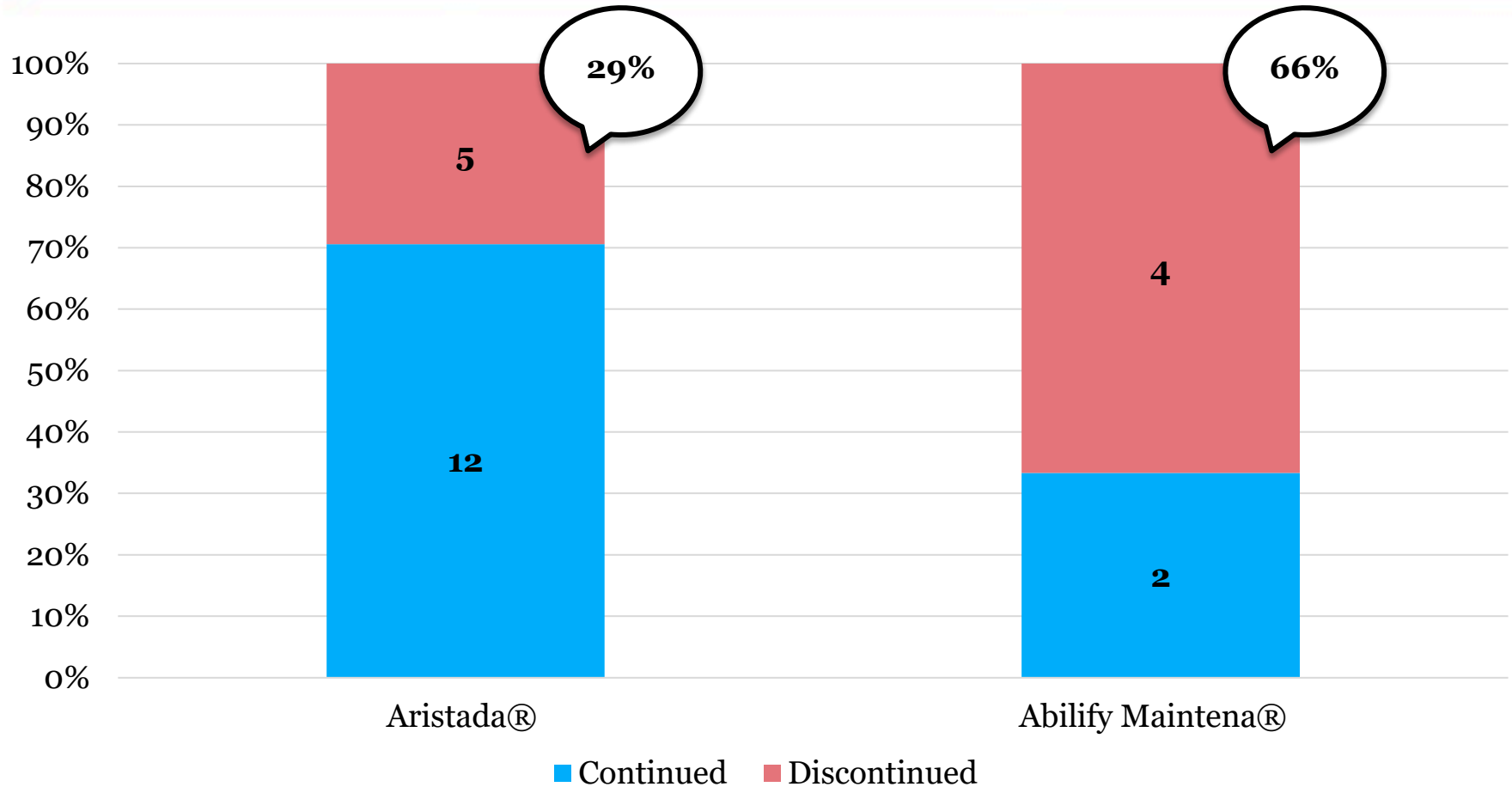
\* 1 patient had 2 ED visits  
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# Mean Time Maintained on Therapy (p=0.16)





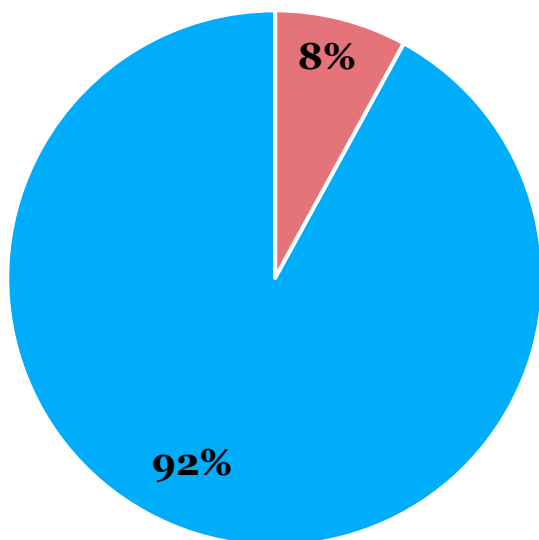
# Number of Patients Where Therapy Was Discontinued (p=0.12)



# Number of Documented Missed Doses ( $p=0.36$ )

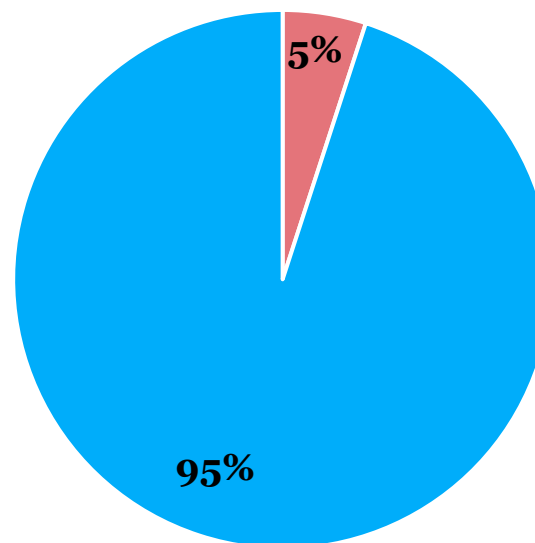
## Aristada<sup>®</sup>

■ Missed Doses   ■ Months Continued



## Abilify Maintena<sup>®</sup>

■ Missed Doses   ■ Months Continued



# Summary

## ***Primary:***

- There is no statistical difference in hospitalization rates due to psychiatric symptoms within one year following initiation of Aristada<sup>®</sup> or Abilify Maintena<sup>®</sup>

## ***Secondary:***

- There is no statistical difference in number of ED visits for psychiatric symptoms within one year following initiation of either formulation
- Mean time maintained on either formulation was 7.9 months
- 39% of patients discontinued either formulation
- 7.6% of doses were missed in either formulation

# Strengths and Limitations



## Strengths

- Real-world study
- Centralized documentation
- Easily replicable



## Limitations

- Number of patients
- Lack of uniform note template or clinic
- Unable to assess outside hospital visits

# Conclusion

- Limited evidence to support superiority of either Aristada® or Abilify Maintena® over the other in reducing risk of psychiatric related hospitalizations and ED visits
- Future Applications:
  - A larger study is needed to assess statistical significance
  - Compare alternative LAIs on hospitalization rates to assist in improving treatment regimens

## Assessment Question

Long-acting atypical antipsychotics are known to reduce hospitalizations in patients with psychiatric disorders compared to oral antipsychotics

True

or

False

## Assessment Question

Long-acting atypical antipsychotics are known to reduce hospitalizations in patients with psychiatric disorders compared to oral antipsychotics

**True**

or

False

# Acknowledgments

- Elizabeth A. Cook, PharmD, AE-C, BCACP, CDE
- Denver Shipman, PharmD, BCPP



# Comparison of Unique Hospitalization Rates Between Initiating Long-acting Injectable Aripiprazole and Aripiprazole Lauroxil for Psychiatric Conditions

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# Missed Dose Criteria: Aristada®

Last Aristada dose	Considered missed dose if time since last dose occurred
441 mg	>6 weeks
662 mg	>8 weeks
882 mg	>8 weeks
1064 mg	>10 weeks

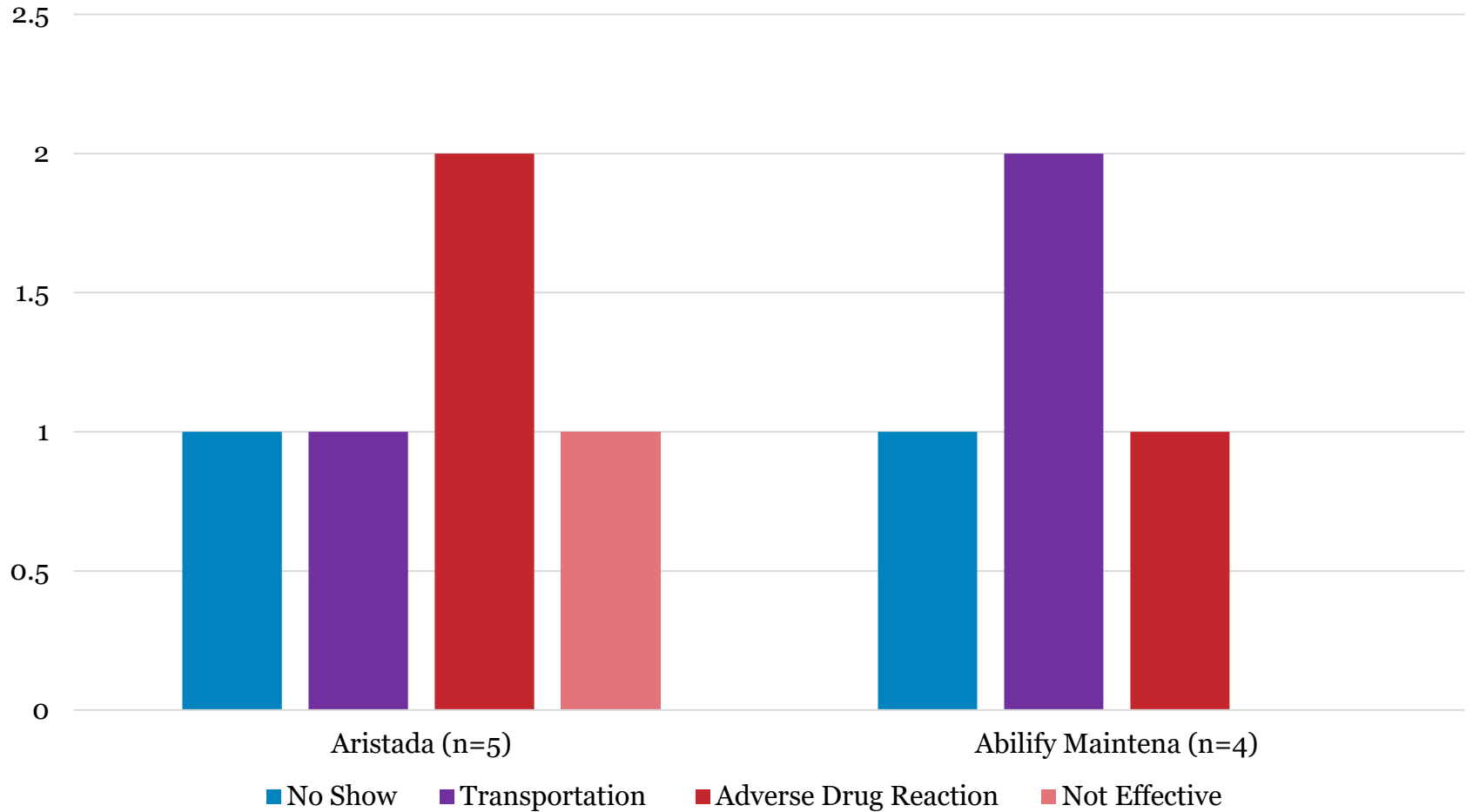
# Missed Dose Criteria: Abilify Maintena<sup>®</sup>

<b>Number of missed Abilify Maintena<sup>®</sup> dose</b>	<b>Considered missed dose if time since last dose occurred</b>
<b>2<sup>nd</sup> or 3<sup>rd</sup> dose missed</b>	>5 weeks from last dose
<b>4<sup>th</sup> or subsequent dose missed</b>	>6 weeks from last dose

# Aristada<sup>®</sup>

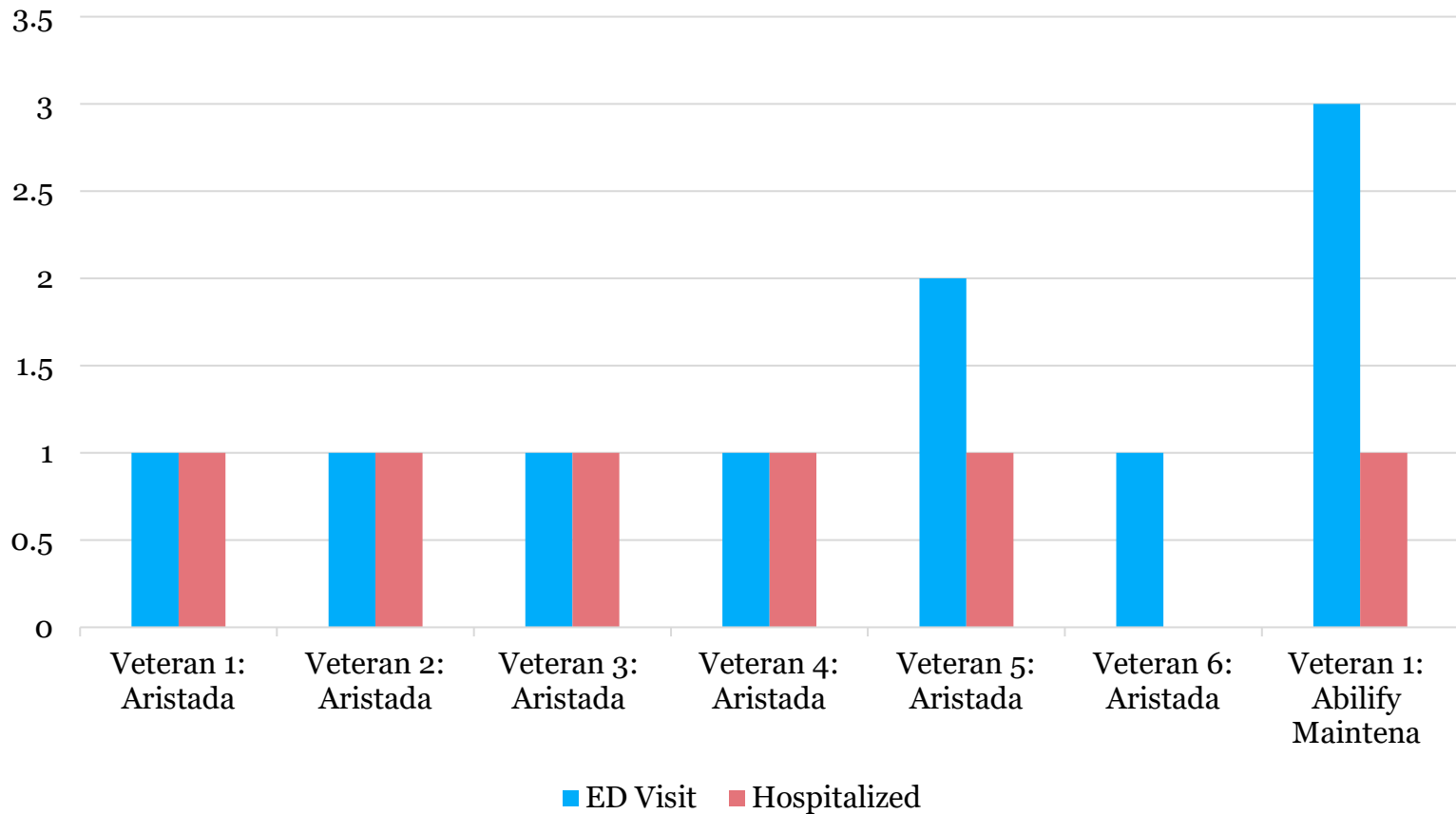
- Dosages: 441mg, 662mg, 882mg, 1064mg
  - Initio: 675mg

Oral	Initial IM
10 mg/day	400 mg/month
15 mg/day	662 mg/month
	882 mg/every 6 weeks
	1064 mg/every 2 months
≥ 20 mg/day	882 mg/month

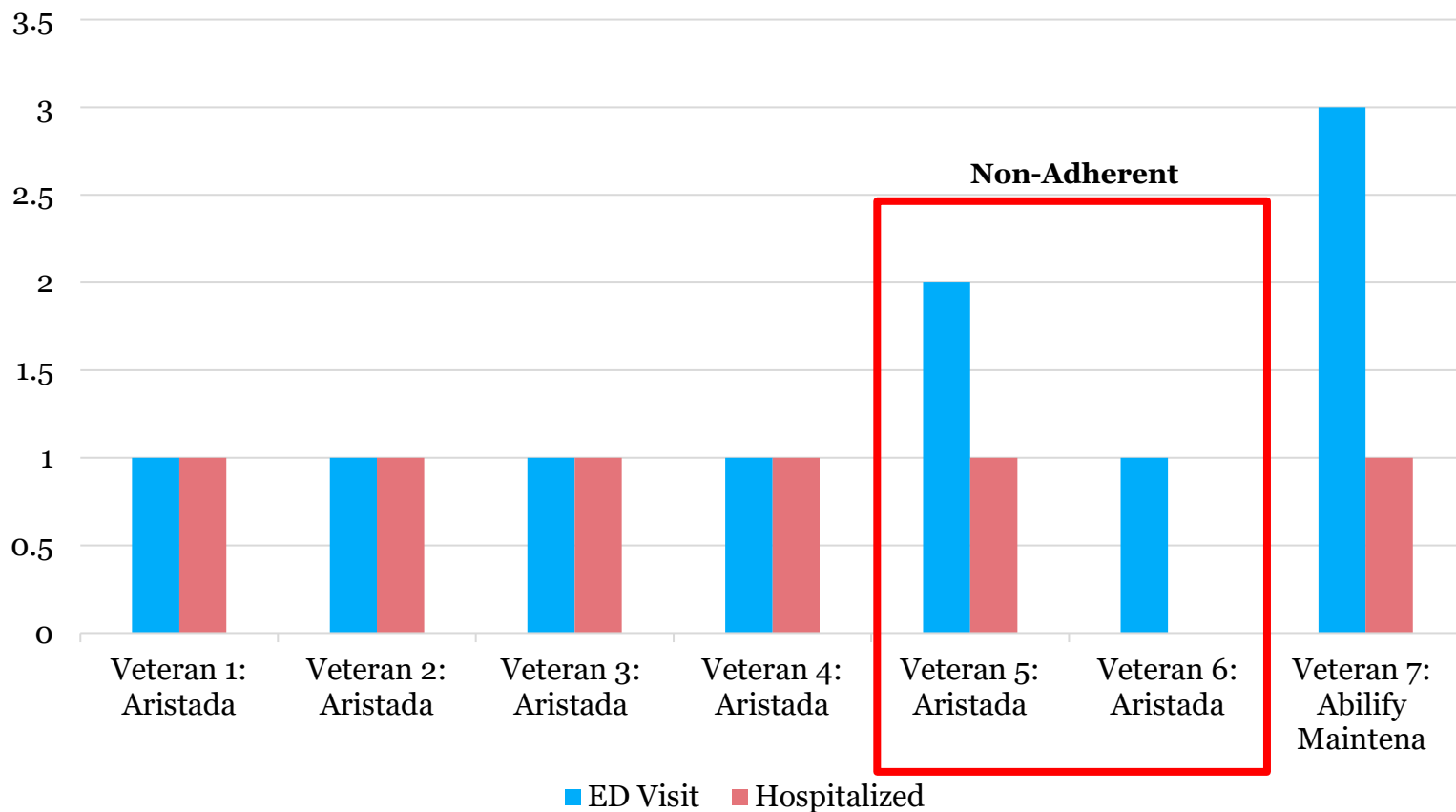


## Reasons for Discontinuation

# Identification of Non-Adherent Patients



# Assessing Adherence in Hospitalizations and ED Visits



# Price Comparison: Average Wholesale Price

## **Aristada®**

- 441mg/1.6mL: \$1,158.49 (per mL)
- 662mg/2.4mL: \$1,159.38 (per mL)
- 882mg/3.2mL: \$1,158.49 (per mL)
- 1064mg/3.9mL: \$1,146.71 (per mL)
  
- Initio:
  - 675mg/2.4ml: \$1,182.14 (per mL)

## **Abilify Maintena®**

- 300mg: \$2,537.86 (per each)
- 400mg: \$3,383.81 (per each)

Aripiprazole (oral and long-acting injectable [Abilify Maintena]): Drug information. UpToDate; 2024. Accessed May 2,2024  
<https://www.uptodate.com/>

Aripiprazole lauroxil (long-acting injectable [Aristada]): Drug information. UpToDate;2024. Accessed May 2,2024  
<https://www.uptodate.com/>



# Alternative Long-acting Injectable Antipsychotics VA Formulary

## Atypical:

- Risperidone:
  - Risperdal Consta®
- Paliperidone:
  - Invega Hafyera™
  - Invega Sustenna®
  - Invega Trinza®
- Aripiprazole
  - Abilify Asimtufii®

## Typical

- Haloperidol decanoate
- Fluphenazine decanoate

# Aristada<sup>®</sup> Criteria for Use

**Exclusion Criteria** If the answer to ANY item below is met, then the patient should NOT receive a long acting injectable antipsychotic (LAIA).

- The patient has never taken the long-acting injectable antipsychotic ordered in any formulation (e.g., oral)
- The patient has a hypersensitivity to the antipsychotic ordered
- Aripiprazole (Aristada Initio only): the patient is a known CYP2D6 poor metabolizers, or is receiving a benzodiazepine, antihypertensive drugs, strong CYP3A4 inducers, a strong CYP3A4 or a strong CYP2D6 inhibitor

**Inclusion Criteria: The patient must meet ALL of the following**

- Diagnosis of schizophrenia or schizoaffective disorder, or bipolar disorder
- The prescriber is a VA Mental Health Provider
- The patient has taken and tolerated the antipsychotic ordered prior to receiving it as a LAI for an adequate length of time
- The patient will be transitioned from oral medication to the long-acting injectable per guidelines/manufacturer recommendations

**Inclusion Criteria: The patient must meet ONE of the following**

- The patient has relapsed or been hospitalized for the intended indication or complications of the intended indication because of nonadherence when treated with oral antipsychotics
- The patient's care environment is such that a LAI is a more reliable route of administration, e.g., homeless, lack of medication supervision, or the medication cannot be stored safely

# Abilify Maintena<sup>®</sup> Criteria for Use

**Exclusion Criteria** If the answer to ANY item below is met, then the patient should NOT receive a long acting injectable antipsychotic (LAI).

- The patient has never taken the long-acting injectable antipsychotic ordered in any formulation (e.g., oral),
- The patient has a hypersensitivity to the antipsychotic ordered
- Aripiprazole (Abilify Maintena): the patient is taking a CYP3A4 inducer

**Inclusion Criteria: The patient must meet ALL of the following**

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# Abilify Asimtufii <sup>®</sup>

- Aripiprazole monohydrate: active drug
- FDA approved
  - Schizophrenia
  - Bipolar I disorder
- Dosage
  - 720, 960mg **every 2 months**
- Initiation
  - 14-day oral aripiprazole overlap (10-20mg) or another oral antipsychotic
- Steady-state reached after 4<sup>th</sup> dose

# References

1. Substance Abuse and Mental Health Services Administration. 2021 NSDUH Annual National Report | CBHSQ Data. [www.samhsa.gov](http://www.samhsa.gov). Published January 4, 2023. <https://www.samhsa.gov/data/report/2021-nsduh-annual-national-report>
2. Correll CU, Citrome L, Haddad PM, et al. The Use of Long-Acting Injectable Antipsychotics in Schizophrenia: Evaluating the Evidence. *J Clin Psychiatry*. 2016;77(suppl 3):1-24. doi:10.4088/JCP.15032su1
3. Abilify Maintena. Package Insert. Otsuka American Pharmaceutical, Inc. 2014.
4. Aristada. Package Insert. Alkermes. 2018.