

# Characterization of Lp(a) Measurement In a Large U.S. Health Care Dataset

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## Introduction

Elevated Lipoprotein(a) [Lp(a)] is an independent risk factor for atherosclerotic cardiovascular disease (ASCVD) estimated to be present in 20% of the general population according to an NLA 2019 Scientific Statement, "Use of Lipoprotein(a) in clinical practice: A biomarker whose time has come." Nonetheless, this genetic lipoprotein is rarely assessed.

**Purpose:** Lp(a) screening volume was ascertained to better understand which providers are ordering Lp(a) tests, and characteristics of the individuals for whom tests are ordered. This novel analysis leverages the Family Heart Database™ of more than 300 million people in the US screened or treated for ASCVD.

## Methods

The dataset included >112 million individuals with laboratory data and diagnostic, procedure and prescription claims from 2012-2019 derived from the Family Heart Database. Individuals in the dataset with at least one Lp(a) measurement and sufficient health care data were identified. Probable familial hypercholesterolemia (FH) status was determined using the Family Heart Foundation's validated machine learning model, FIND FH®.

## Lp(a) was rarely measured:

- **0.3% (n=335,726) of individuals in the Family Heart Dataset had at least one Lp(a) measurement**

	Family Heart Dataset	With Lp(a) Assessment
n	112,826,464	335,726
% of Total in Dataset	100%	0.3%
Age (mean±SD)	54.5±39.5	59.9±39.7
Female	39.4%	52.5%
Race/Ethnicity		
Black	6.4%	7.8%
Hispanic	4.8%	7.1%
White	28.8%	53.6%
Other/Unknown	60.0%	31.5%
Risk Factors:		
Hypertension	32.4%	53.7%
Hyperlipidemia	29.5%	50.6%
Diabetes	15.0%	24.6%
Cardiovascular History:		
ASCVD only	12.2%	29.1%
Prob. FH with ASCVD	0.2%	1.2%
Prob. FH without ASCVD	0.3%	1.7%
Diag. FH with ASCVD	0.1%	0.4%
Diag. FH without ASCVD	0.1%	0.6%
No ASCVD or FH	87.2%	70.8%

Table 1. Demographics and relevant medical history of all individuals in the dataset compared to those with Lp(a) measurement.

## Results

**A small number of health care providers were responsible for ordering the Lp(a) lab tests for 50% of individuals with a measurement:**

- **n=629 of 810,119 (<0.1%) providers**

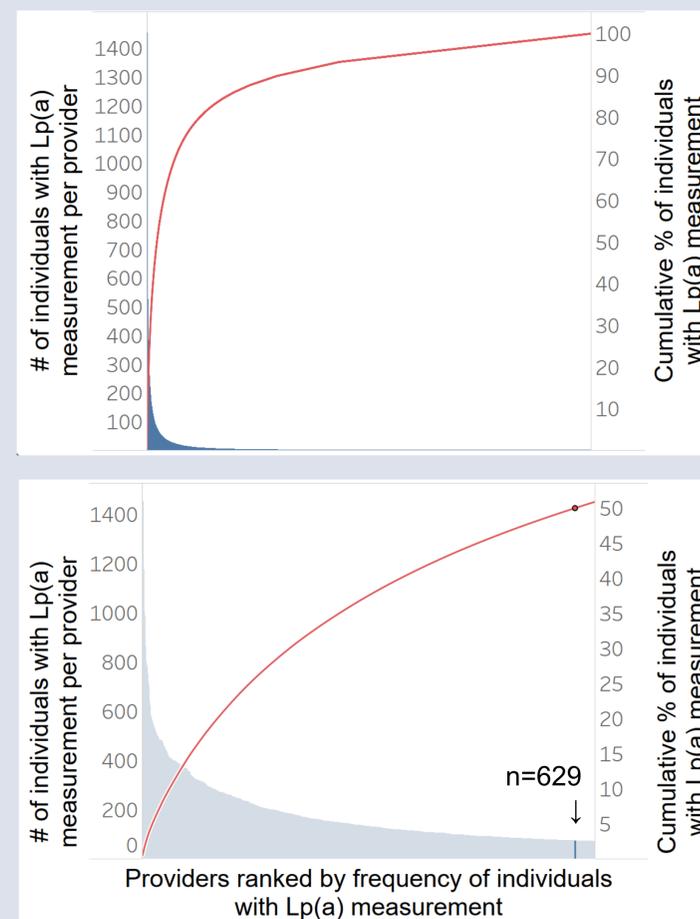


Figure 1. All (n=810,119; above) and top ordering (n=629; below) health care providers in the dataset ranked by frequency of individuals with Lp(a) measurement.

## Results

Specialty\* of the top ordering (n=629) health care providers:

- Internal medicine (26%)
- Family medicine (23%)
- Internal medicine/CVD (14%)
- Physician assistants & advanced practice nursing providers/nurse practitioner/family (5%)

\*Within this classification system, lipidology was not represented as a separate specialty.

## Discussion

**Measurement of Lp(a) was rare within a large US health care dataset.**

**Ordering Lp(a) was concentrated within a small number of all health care providers.**

**Individuals who had Lp(a) measured were older and had more risk factors, ASCVD and/or FH**

**Additional research is needed to characterize the barriers and facilitators of Lp(a) measurement for health care providers and individuals.**