**Medicaid - Business Problems with Solutions**

1. **What is the distribution of the number of active patients across different states and plan categories?**

WITH RankedMCOs AS (

SELECT

State,

MCO\_Name,

Number\_of\_active\_patients,

ROW\_NUMBER() OVER(PARTITION BY State ORDER BY Number\_of\_active\_patients DESC) as rn

FROM

managed\_care

WHERE

Number\_of\_active\_patients IS NOT NULL

AND County <> 'AllCountiesinState'

AND MCO\_Name <> 'All'

)

SELECT

State,

MCO\_Name,

Number\_of\_active\_patients

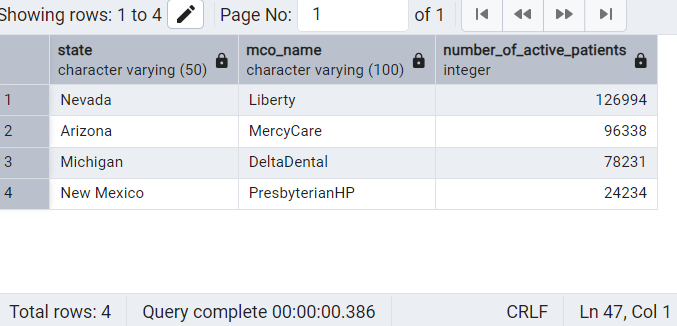
FROM

RankedMCOs

WHERE

rn = 1

ORDER BY Number\_of\_active\_patients DESC;



1. **How does the average number of eligible MCO patients vary by state and county?**

SELECT

State,

County,

AVG(Number\_of\_Eligible\_MCO\_Patients) AS Average\_Eligible\_Patients

FROM

managed\_care

WHERE

Number\_of\_active\_patients IS NOT NULL

AND County <> 'AllCountiesinState'

AND MCO\_Name <> 'All'

GROUP BY

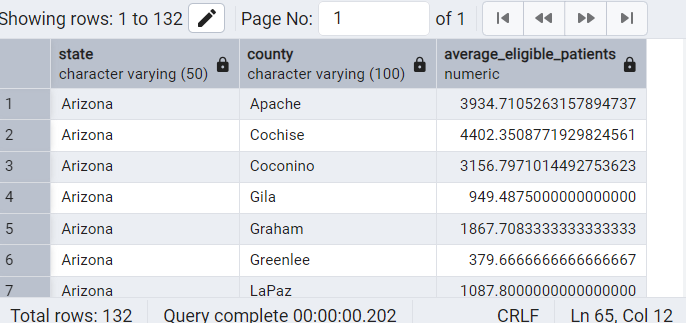
State,

County

ORDER BY

State,

County;



1. **What are the top 10 service categories that consistently have a higher number of active patients across different MCOs?**

SELECT

Service\_Category, MCO\_Name,

AVG(Number\_of\_active\_patients) AS Average\_Active\_Patients

FROM

managed\_care

WHERE

Number\_of\_active\_patients IS NOT NULL

AND MCO\_Name <> 'All'

AND County <> 'AllCountiesinState'

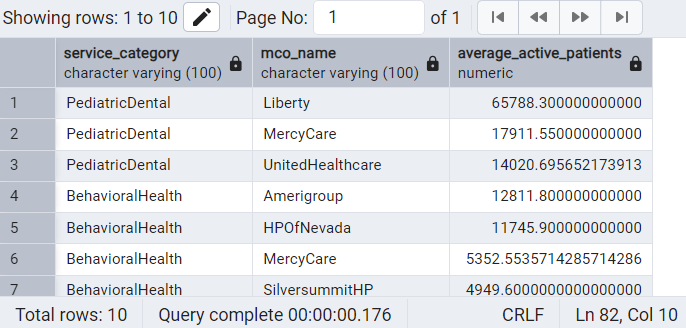
GROUP BY

Service\_Category, MCO\_Name

ORDER BY

Average\_Active\_Patients DESC

LIMIT 10;



1. **What is the trend of the total number of active patients over the different calendar years present in the data?**

SELECT

Calendar\_Year,

SUM(Number\_of\_active\_patients) AS Total\_Active\_Patients

FROM

managed\_care

WHERE

Number\_of\_active\_patients IS NOT NULL

AND MCO\_Name <> 'All'

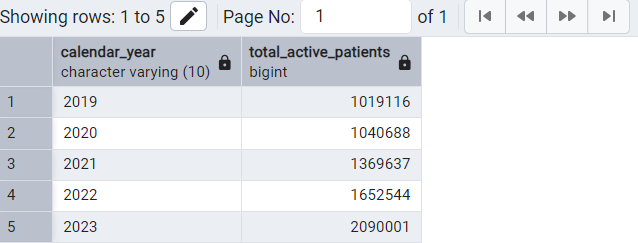
AND County <> 'AllCountiesinState'

GROUP BY

Calendar\_Year

ORDER BY

Calendar\_Year;



1. **How does the number of providers vary across different states and service categories?**

SELECT

State, Service\_Category, AVG(Number\_of\_Providers) AS Average\_Providers

FROM

managed\_care

WHERE

Number\_of\_Providers IS NOT NULL

AND MCO\_Name <> 'All'

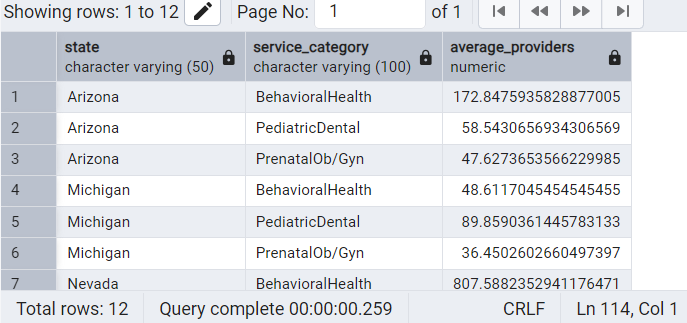
AND County <> 'AllCountiesinState'

GROUP BY

State, Service\_Category

ORDER BY

State, Service\_Category;



1. **Is there a correlation between the number of eligible patients and the number of providers within each county?**

SELECT

County, CORR(Number\_of\_Eligible\_MCO\_Patients, Number\_of\_Providers) AS Correlation

FROM

managed\_care

WHERE

Number\_of\_Eligible\_MCO\_Patients IS NOT NULL

AND Number\_of\_Providers IS NOT NULL

AND MCO\_Name <> 'All'

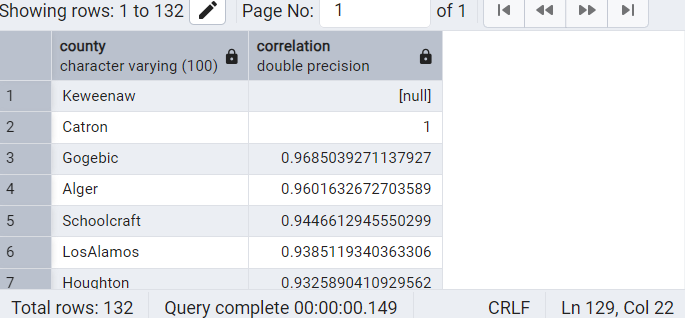
AND County <> 'AllCountiesinState'

GROUP BY

County

ORDER BY

Correlation DESC;



1. **Which are the top 10 MCOs that have the highest average number of active patients per provider?**

SELECT

MCO\_Name,

AVG(

CASE

WHEN POSITION(':' IN Number\_of\_Active\_Patients\_per\_Provider) > 0 THEN

CASE

WHEN CAST(SPLIT\_PART(Number\_of\_Active\_Patients\_per\_Provider, ':', 2) AS NUMERIC) = 0 THEN

NULL -- Handle division by zero

ELSE

CAST(SPLIT\_PART(Number\_of\_Active\_Patients\_per\_Provider, ':', 1) AS NUMERIC) /

CAST(SPLIT\_PART(Number\_of\_Active\_Patients\_per\_Provider, ':', 2) AS NUMERIC)

END

END

) AS Average\_Patients\_Per\_Provider\_Ratio

FROM

managed\_care

WHERE

Number\_of\_Active\_Patients\_per\_Provider IS NOT NULL

AND MCO\_Name <> 'All'

AND County <> 'AllCountiesinState'

GROUP BY

MCO\_Name

HAVING AVG(

CASE

WHEN POSITION(':' IN Number\_of\_Active\_Patients\_per\_Provider) > 0 THEN

CASE

WHEN CAST(SPLIT\_PART(Number\_of\_Active\_Patients\_per\_Provider, ':', 2) AS NUMERIC) = 0 THEN

NULL -- Handle division by zero

ELSE

CAST(SPLIT\_PART(Number\_of\_Active\_Patients\_per\_Provider, ':', 1) AS NUMERIC) /

CAST(SPLIT\_PART(Number\_of\_Active\_Patients\_per\_Provider, ':', 2) AS NUMERIC)

END

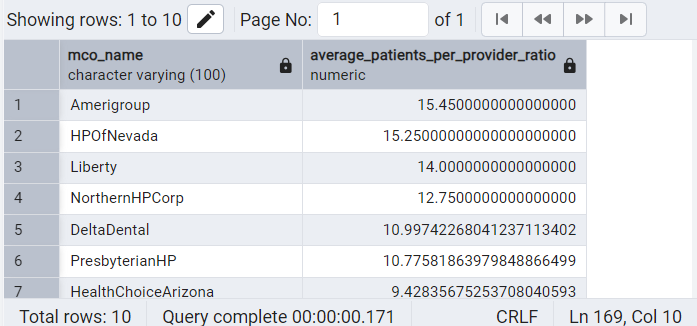
END

) IS NOT NULL

ORDER BY

Average\_Patients\_Per\_Provider\_Ratio DESC

LIMIT 10;



1. **Which are the top 10 MCOs that have the lowest average number of active patients per provider?**

SELECT

MCO\_Name,

AVG(

CASE

WHEN POSITION(':' IN Number\_of\_Active\_Patients\_per\_Provider) > 0 THEN

CASE

WHEN CAST(SPLIT\_PART(Number\_of\_Active\_Patients\_per\_Provider, ':', 2) AS NUMERIC) = 0 THEN

NULL -- Handle division by zero

ELSE

CAST(SPLIT\_PART(Number\_of\_Active\_Patients\_per\_Provider, ':', 1) AS NUMERIC) /

CAST(SPLIT\_PART(Number\_of\_Active\_Patients\_per\_Provider, ':', 2) AS NUMERIC)

END

END

) AS Average\_Patients\_Per\_Provider\_Ratio

FROM

managed\_care

WHERE

Number\_of\_Active\_Patients\_per\_Provider IS NOT NULL

AND MCO\_Name <> 'All'

AND County <> 'AllCountiesinState'

GROUP BY

MCO\_Name

HAVING AVG(

CASE

WHEN POSITION(':' IN Number\_of\_Active\_Patients\_per\_Provider) > 0 THEN

CASE

WHEN CAST(SPLIT\_PART(Number\_of\_Active\_Patients\_per\_Provider, ':', 2) AS NUMERIC) = 0 THEN

NULL -- Handle division by zero

ELSE

CAST(SPLIT\_PART(Number\_of\_Active\_Patients\_per\_Provider, ':', 1) AS NUMERIC) /

CAST(SPLIT\_PART(Number\_of\_Active\_Patients\_per\_Provider, ':', 2) AS NUMERIC)

END

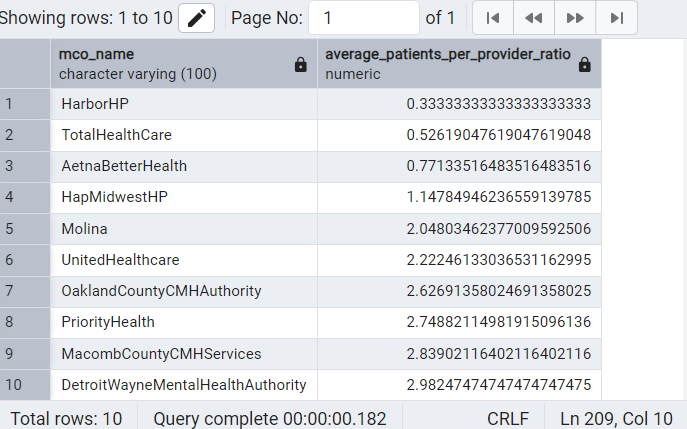
END

) IS NOT NULL

ORDER BY

Average\_Patients\_Per\_Provider\_Ratio ASC

LIMIT 10;



1. **Has the average number of active patients per provider changed significantly over the different calendar years?**

WITH YearlyAvgRatio AS (

SELECT

Calendar\_Year,

AVG(

CASE

WHEN POSITION(':' IN Number\_of\_Active\_Patients\_per\_Provider) > 0 THEN

CASE

WHEN CAST(SPLIT\_PART(Number\_of\_Active\_Patients\_per\_Provider, ':', 2) AS NUMERIC) = 0 THEN

NULL

ELSE

CAST(SPLIT\_PART(Number\_of\_Active\_Patients\_per\_Provider, ':', 1) AS NUMERIC) /

CAST(SPLIT\_PART(Number\_of\_Active\_Patients\_per\_Provider, ':', 2) AS NUMERIC)

END

ELSE

NULL

END

) AS Average\_Patients\_Per\_Provider\_Ratio\_Raw

FROM

managed\_care

WHERE

Number\_of\_Active\_Patients\_per\_Provider IS NOT NULL

AND MCO\_Name <> 'All'

AND County <> 'AllCountiesinState'

GROUP BY

Calendar\_Year

)

SELECT

Calendar\_Year,

ROUND(Average\_Patients\_Per\_Provider\_Ratio\_Raw, 2) AS Average\_Patients\_Per\_Provider

FROM

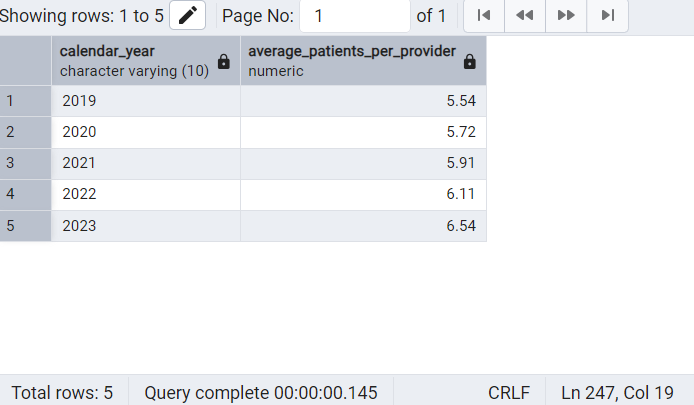
YearlyAvgRatio

WHERE

Average\_Patients\_Per\_Provider\_Ratio\_Raw IS NOT NULL

ORDER BY

Calendar\_Year;



1. **What is the average number of services per active patient for each service category?**

SELECT

Service\_Category,

ROUND(AVG(Number\_of\_Services\_per\_Active\_Patient),2) AS Average\_Services\_Per\_Active\_Patient

FROM

managed\_care

WHERE

Number\_of\_Services\_per\_Active\_Patient IS NOT NULL

AND MCO\_Name <> 'All'

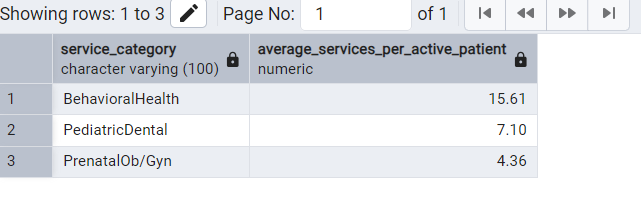
AND County <> 'AllCountiesinState'

GROUP BY

Service\_Category

ORDER BY

Service\_Category;



1. **Are there significant differences in the average number of services per active patient across different states or plan categories?**

-- Average services per active patient by State

SELECT

State,

ROUND(AVG(Number\_of\_Services\_per\_Active\_Patient),2) AS Average\_Services

FROM

managed\_care

WHERE

Number\_of\_Services\_per\_Active\_Patient IS NOT NULL

AND MCO\_Name <> 'All'

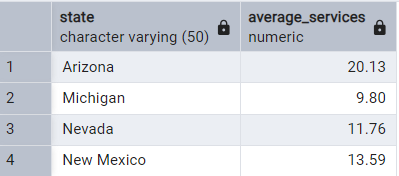
AND County <> 'AllCountiesinState'

GROUP BY

State

ORDER BY

State;



-- Average services per active patient by Plan Category

SELECT

Plan\_Category,

ROUND(AVG(Number\_of\_Services\_per\_Active\_Patient),2) AS Average\_Services

FROM

managed\_care

WHERE

Number\_of\_Services\_per\_Active\_Patient IS NOT NULL

AND MCO\_Name <> 'All'

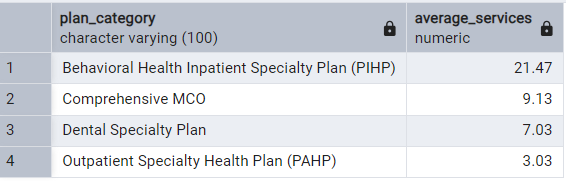
AND County <> 'AllCountiesinState'

GROUP BY

Plan\_Category

ORDER BY

Plan\_Category;



-- Average services per active patient by State and Plan Category

SELECT

State,

Plan\_Category,

ROUND(AVG(Number\_of\_Services\_per\_Active\_Patient),2) AS Average\_Services

FROM

managed\_care

WHERE

Number\_of\_Services\_per\_Active\_Patient IS NOT NULL

AND MCO\_Name <> 'All'

AND County <> 'AllCountiesinState'

GROUP BY

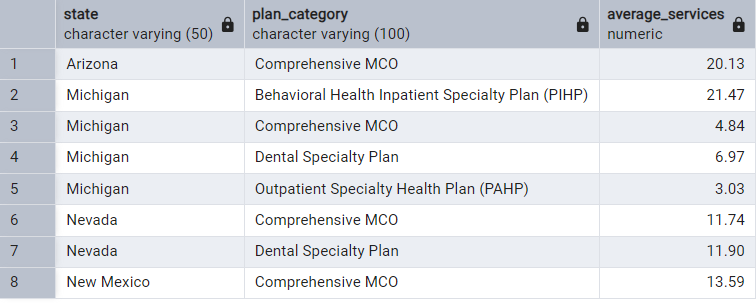
State,

Plan\_Category

ORDER BY

State,

Plan\_Category;



1. **How does the "Percent\_Of\_Eligible\_Patients\_Receiving\_Services" vary across different MCOs and service categories?**

SELECT

MCO\_Name,

Service\_Category,

ROUND(AVG(CAST(REPLACE(Percent\_Of\_Eligible\_Patients\_Receiving\_Services, '%', '') AS DECIMAL(10, 4))),2) AS average\_eligible\_percent\_receiving\_services

FROM

managed\_care

WHERE

Percent\_Of\_Eligible\_Patients\_Receiving\_Services IS NOT NULL

AND MCO\_Name <> 'All'

AND County <> 'AllCountiesinState'

GROUP BY

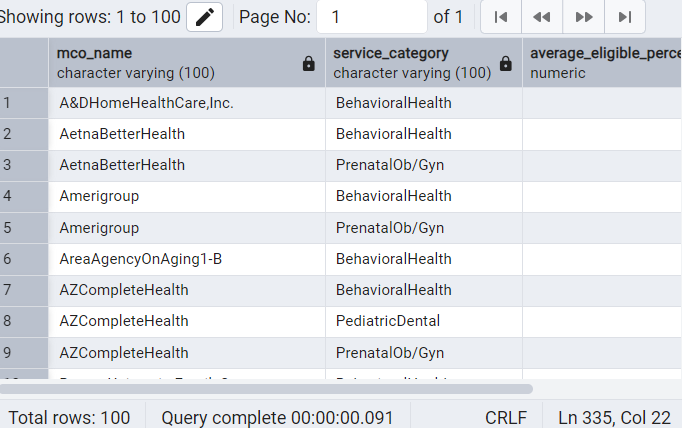
MCO\_Name,

Service\_Category

ORDER BY

MCO\_Name,

Service\_Category;



1. **Is there a relationship between the number of providers and the "Percent\_Of\_Eligible\_Patients\_Receiving\_Services" within a given area?**

SELECT

State,

County,

CORR(Number\_of\_Providers,

ROUND(CAST(REPLACE(Percent\_Of\_Eligible\_Patients\_Receiving\_Services, '%', '') AS DECIMAL(10, 4)),2)

) AS Correlation\_Providers\_vs\_ServicePercent

FROM

managed\_care

WHERE

Number\_of\_Providers IS NOT NULL

AND Percent\_Of\_Eligible\_Patients\_Receiving\_Services IS NOT NULL

AND MCO\_Name <> 'All'

AND County <> 'AllCountiesinState'

GROUP BY

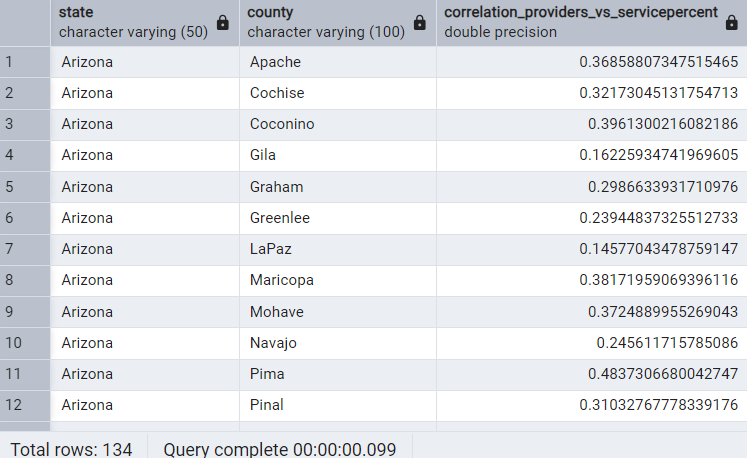
State,

County

ORDER BY

State,

County;



1. **Which MCOs consistently have a high "Percent\_Of\_Eligible\_Patients\_Receiving\_Services" across different service categories and years?**

WITH MCOAvgPercent AS (

SELECT

MCO\_Name,

AVG(

(CAST(REPLACE(Percent\_Of\_Eligible\_Patients\_Receiving\_Services, '%', '') AS DECIMAL(10, 4)))/ 100.0

) AS Avg\_Percent\_Across\_Services\_Years,

COUNT(DISTINCT EXTRACT(YEAR FROM TO\_DATE(Calendar\_Year, 'YYYY'))) AS Number\_Of\_Years,

COUNT(DISTINCT Service\_Category) AS Number\_Of\_Service\_Categories

FROM

managed\_care

WHERE

Percent\_Of\_Eligible\_Patients\_Receiving\_Services IS NOT NULL

AND MCO\_Name <> 'All'

AND County <> 'AllCountiesinState'

GROUP BY

MCO\_Name

HAVING

COUNT(DISTINCT EXTRACT(YEAR FROM TO\_DATE(Calendar\_Year, 'YYYY'))) > 1

AND COUNT(DISTINCT Service\_Category) > 1

)

SELECT

MCO\_Name,

Avg\_Percent\_Across\_Services\_Years

FROM

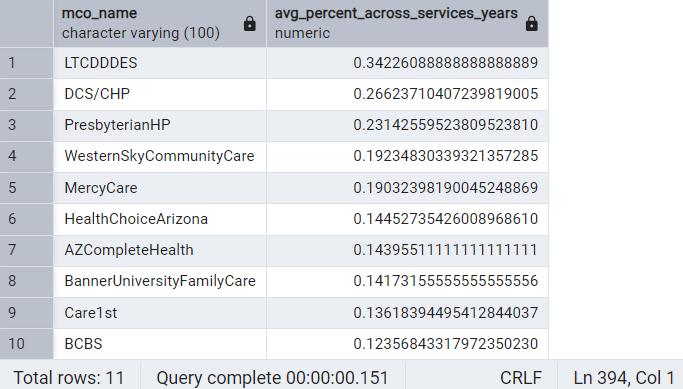
MCOAvgPercent

WHERE

Avg\_Percent\_Across\_Services\_Years >= (SELECT AVG(Avg\_Percent\_Across\_Services\_Years) FROM MCOAvgPercent) -- Adjust threshold as needed

ORDER BY

Avg\_Percent\_Across\_Services\_Years DESC;



1. **What is the trend of the total number of active patients within each state over the available calendar years?**

-- Trend in the number of active patients by State and Year

SELECT

EXTRACT(YEAR FROM TO\_DATE(Calendar\_Year, 'YYYY')) AS Year,

State,

SUM(Number\_of\_active\_patients) AS Total\_Active\_Patients

FROM

managed\_care

WHERE

Number\_of\_active\_patients IS NOT NULL

AND MCO\_Name <> 'All'

AND County <> 'AllCountiesinState'

GROUP BY

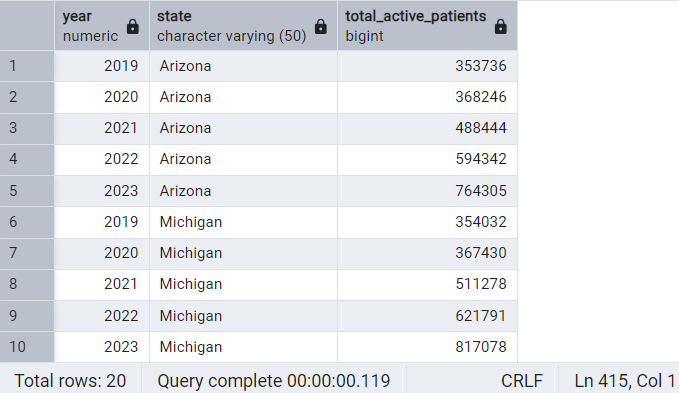
EXTRACT(YEAR FROM TO\_DATE(Calendar\_Year, 'YYYY')),

State

ORDER BY

State,

Year;



1. **What is the trend of the total number of active patients within each county over the available calendar years?**

-- Trend in the number of active patients by County and Year

SELECT

EXTRACT(YEAR FROM TO\_DATE(Calendar\_Year, 'YYYY')) AS Year,

County,

SUM(Number\_of\_active\_patients) AS Total\_Active\_Patients

FROM

managed\_care

WHERE

Number\_of\_active\_patients IS NOT NULL

AND MCO\_Name <> 'All'

AND County <> 'AllCountiesinState'

GROUP BY

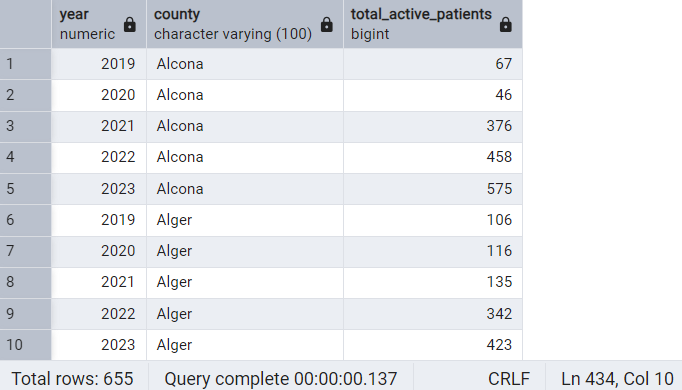
EXTRACT(YEAR FROM TO\_DATE(Calendar\_Year, 'YYYY')),

County

ORDER BY

County,

Year;



1. **What is the trend of the average number of providers within each state over the available calendar years?**

-- Trend in the number of providers by State and Year

SELECT

EXTRACT(YEAR FROM TO\_DATE(Calendar\_Year, 'YYYY')) AS Year,

State,

ROUND( AVG(Number\_of\_Providers),2) AS Average\_Providers

FROM

managed\_care

WHERE

Number\_of\_Providers IS NOT NULL

AND MCO\_Name <> 'All'

AND County <> 'AllCountiesinState'

GROUP BY

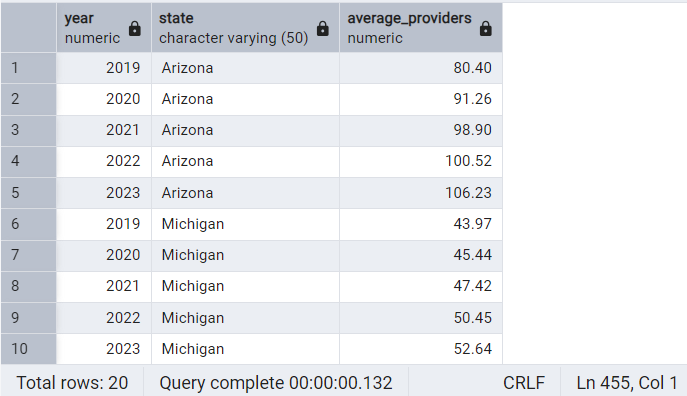
EXTRACT(YEAR FROM TO\_DATE(Calendar\_Year, 'YYYY')),

State

ORDER BY

State,

Year;



1. **What is the trend of the average number of providers within each county over the available calendar years?**

-- Trend in the number of providers by County and Year

SELECT

EXTRACT(YEAR FROM TO\_DATE(Calendar\_Year, 'YYYY')) AS Year,

County,

ROUND(AVG(Number\_of\_Providers),2) AS Average\_Providers

FROM

managed\_care

WHERE

Number\_of\_Providers IS NOT NULL

AND MCO\_Name <> 'All'

AND County <> 'AllCountiesinState'

GROUP BY

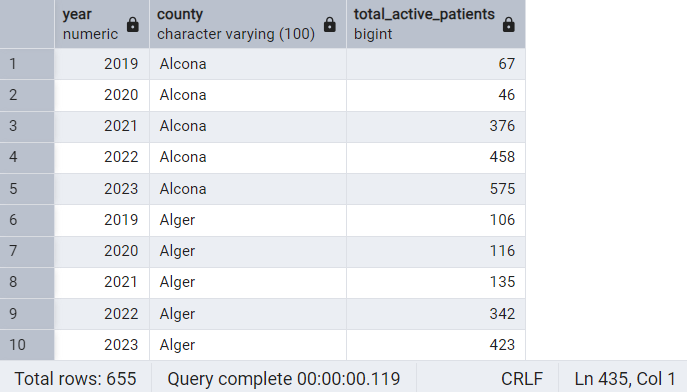
EXTRACT(YEAR FROM TO\_DATE(Calendar\_Year, 'YYYY')),

County

ORDER BY

County,

Year;



1. **What is the trend of the average number of services per active patient within each state over the available calendar years?**

-- Trend in service utilization (average services per active patient) by State and Year

SELECT

EXTRACT(YEAR FROM TO\_DATE(Calendar\_Year, 'YYYY')) AS Year,

State,

ROUND(AVG(Number\_of\_Services\_per\_Active\_Patient),2) AS Average\_Services\_Per\_Patient

FROM

managed\_care

WHERE

Number\_of\_Services\_per\_Active\_Patient IS NOT NULL

AND MCO\_Name <> 'All'

AND County <> 'AllCountiesinState'

GROUP BY

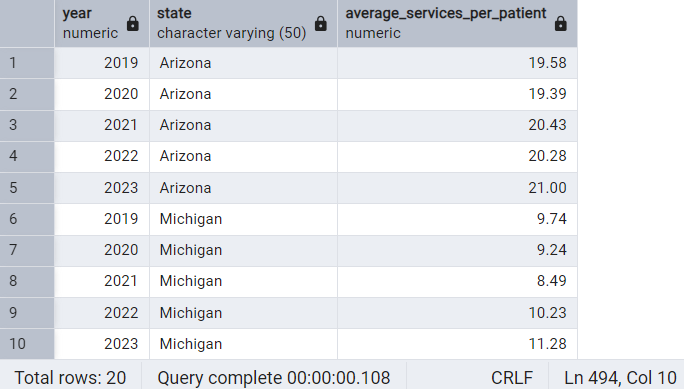
EXTRACT(YEAR FROM TO\_DATE(Calendar\_Year, 'YYYY')),

State

ORDER BY

State,

Year;



1. **What is the trend of the average number of services per active patient within each county over the available calendar years?**

-- Trend in service utilization (average services per active patient) by County and Year

SELECT

EXTRACT(YEAR FROM TO\_DATE(Calendar\_Year, 'YYYY')) AS Year,

County,

ROUND(AVG(Number\_of\_Services\_per\_Active\_Patient),2) AS Average\_Services\_Per\_Patient

FROM

managed\_care

WHERE

Number\_of\_Services\_per\_Active\_Patient IS NOT NULL

AND MCO\_Name <> 'All'

AND County <> 'AllCountiesinState'

GROUP BY

EXTRACT(YEAR FROM TO\_DATE(Calendar\_Year, 'YYYY')),

County

ORDER BY

County,

Year;

