# Presentation 1:
Time-series Trends

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Average Call Duration by Hour

– **Business relevance**: average call duration provides an indirect measure of the complexity or difficulty of tasks handled by call operators. Comparing outbound and inbound calls helps reveal potential misalignments between internal scheduling and caller behavior.

– **Findings**: there's a gap between the average call duration of inbound and outbound calls after 5pm

Average duration by hour in a day

Direction ● ORIGINATING ● TERMINATING
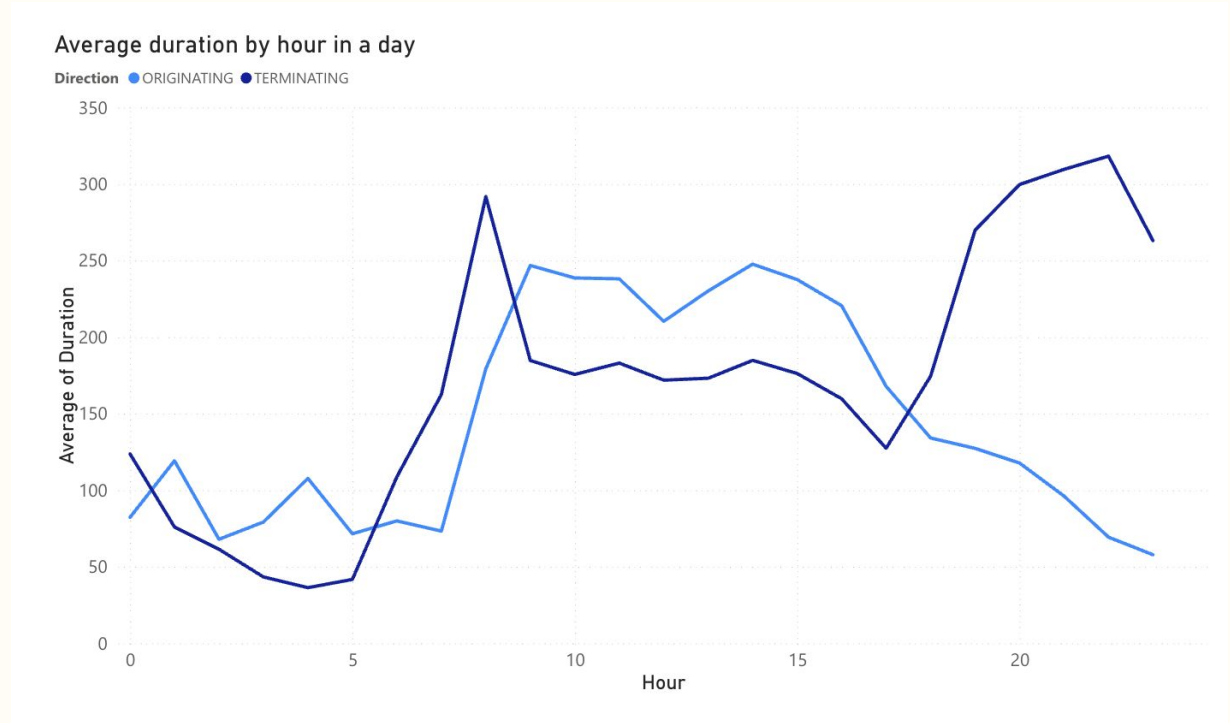
Average Call Duration by Weekday

Findings:
- Average call duration remains stable from Monday to Friday
- However, a huge gap between inbound and outbound calls arises during weekend, with the average duration of outbound calls reducing drastically and that of inbound calls increasing significantly

Recommendation:
- Increase inbound coverage after 5PM everyday and during weekends to handle longer and possibly more complex inbound calls

Average duration by hour in a day

Direction ● ORIGINATING ● TERMINATING
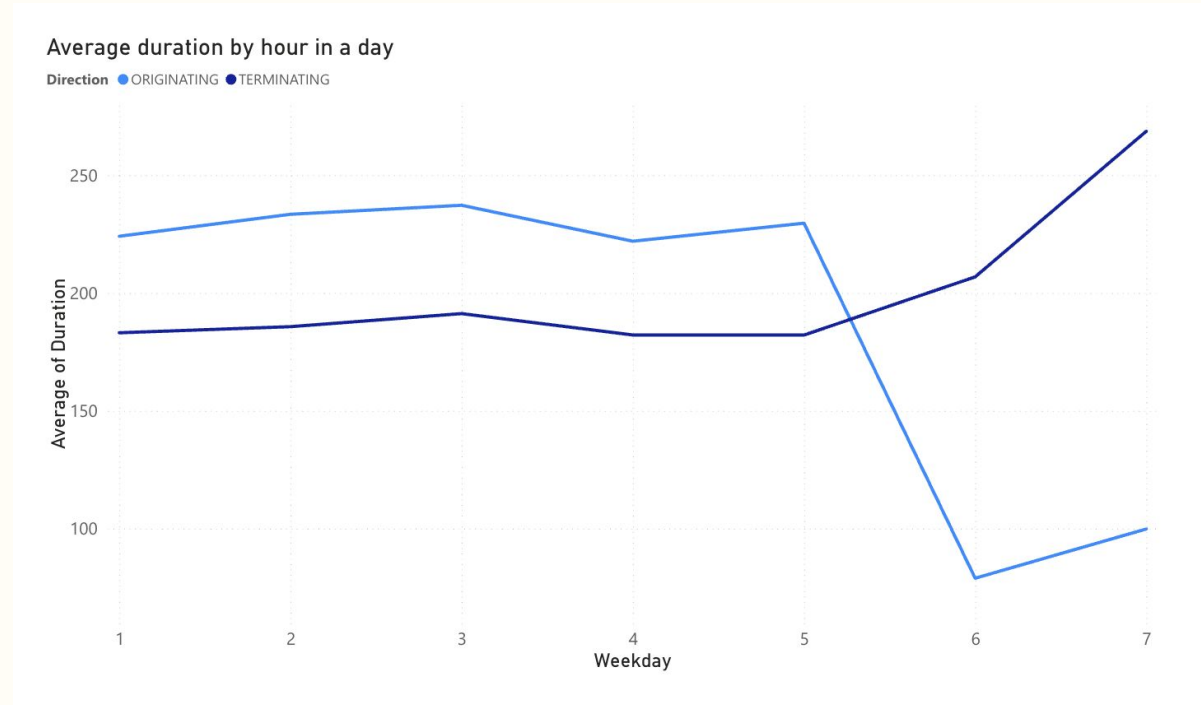
Next steps

- Identify key issues or topics driving longer evening and weekend calls
  - Integrate the CAR dataset to analyze whether longer calls are associated with specific phone menus, call types or client types

- Examine caller wait times during periods with higher average call durations
  - Analyze ring duration to assess potential understaffing during peak hours

- Evaluate whether call timing (e.g., evening vs. daytime) influences case outcomes

- Assess if evening and weekend call patterns are seasonal or constantly recurring

Frequency of Calls by Issue Type

Count of Contact Session ID by Hours_ and EP Name

EP Name ● Legal Benefits Menu Telephony EP ● Legal Employment Menu Telephon... ● Legal Family Menu Telephony EP ● Legal HIV Menu Telepho... ● Legal Housing Menu T... ● Legal Immigration ...
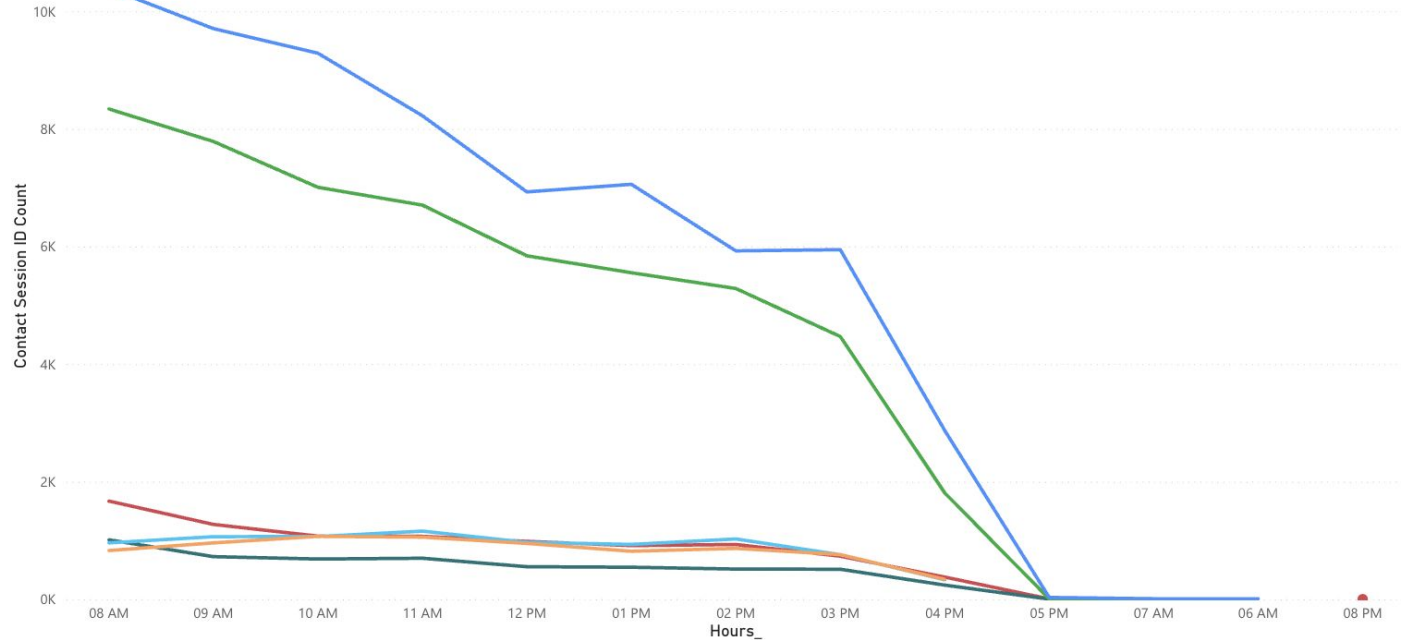
Findings:
- Legal housing menu and legal family menu have the highest call frequencies
- Highest number of calls immediately at the start of the day (8am–10am)

Business Relevance:
- Housing and family offices must be fully staffed in the mornings, flexible for rest of day

Next Steps

- **Recommendations**:
- Consider consolidating staff from lower-volume services during peak morning hours to support high-volume legal housing/family lines
- Allow for flexible, shift-based staffing after peak morning hours rather than constant coverage to save costs

- **Other metrics**:
- Call Quality/Outcome by Issue Type – identify whether there are underperforming call lines and why
- Missed call count due to overflow during peak hours

Call Volume by Intake Line Over Time

Call Volume by Intake Line Over Time
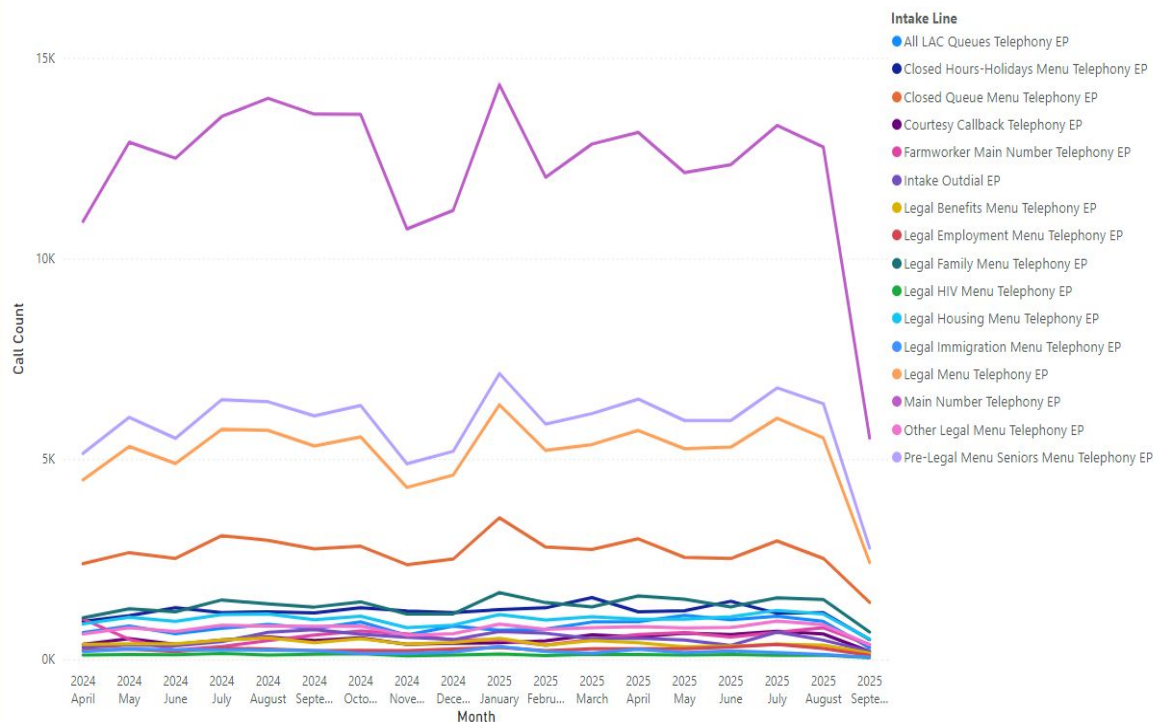
Business Relevance:
The first graph shows how call volumes has varied over time across all intake lines. I grouped the data by month and intake line, then plotted the unique calls (using 'Contact Session ID') for each intake line over each month. This graph helps Legal Aid identify high and low-traffic intake lines, allowing for better resource allocation.

Findings:
All of the intake lines except Main Number, Pre-legal Seniors Menu, Legal Menu, and Closed Queue has remained under 1,700 calls per month since April 2024. There was a significant increase in calls during the New Year. There's also been a steep decline in calls in September.

Peak Call Hours for Main Number

Peak Call Hours for Main Number
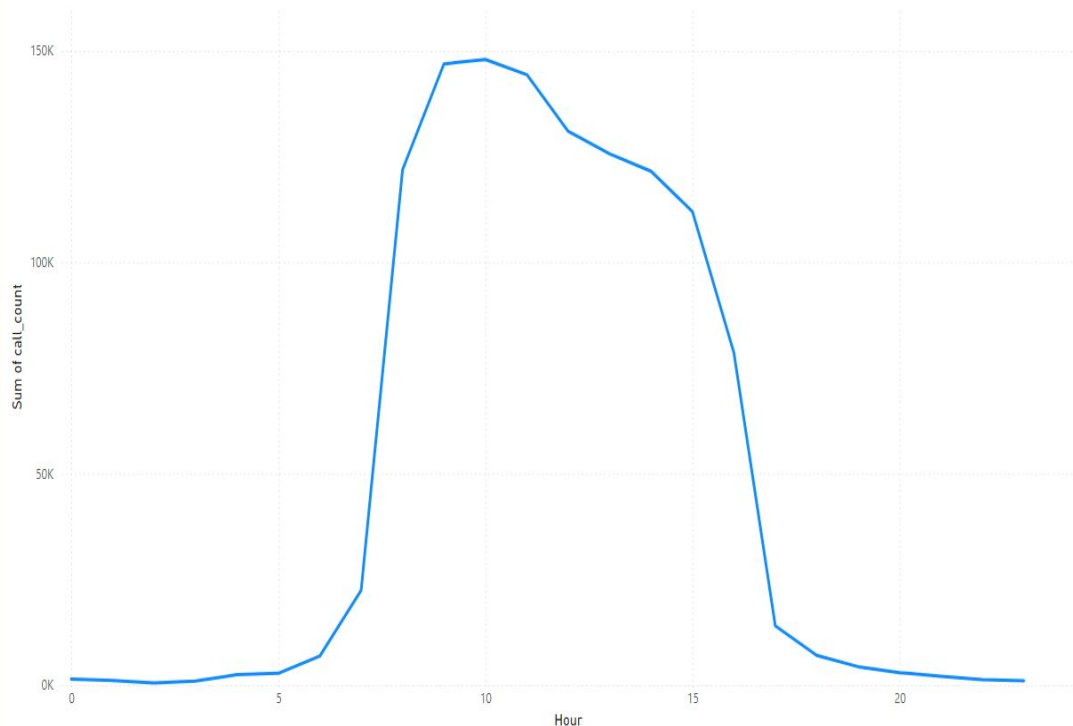
Business Relevance:
The second graph focuses on the peak call hours for the "Main Number Telephony EP" intake line. I filtered the dataset for this particular intake line and grouped the data by hour, counting the unique calls (again using 'Contact Session ID'). This graph shows the specific peak call hours for their busiest intake lines so that Legal Aid can prioritize staffing during high–demand periods

Findings:
The highest call volume occurs between 9AM and 12 PM, with a significant increase starting at 7 AM and peaking around 10 AM. Most calls are between 7AM and 5PM.

Next Steps

Recommendations:

- Legal Aid should consider consolidating the number of intake lines or redirecting them to what is most frequently used since 4 intake lines received the majority of calls.
- Ensuring the queue is open between the peaks hours of 9 AM to 12 PM.

Further Investigation:
- Plotting the peak hours for the top 4 intake lines by day of the week to see if it varies day to day.
- Investigating the causes behind sharp increases or decreases, such as if there are seasonal causes
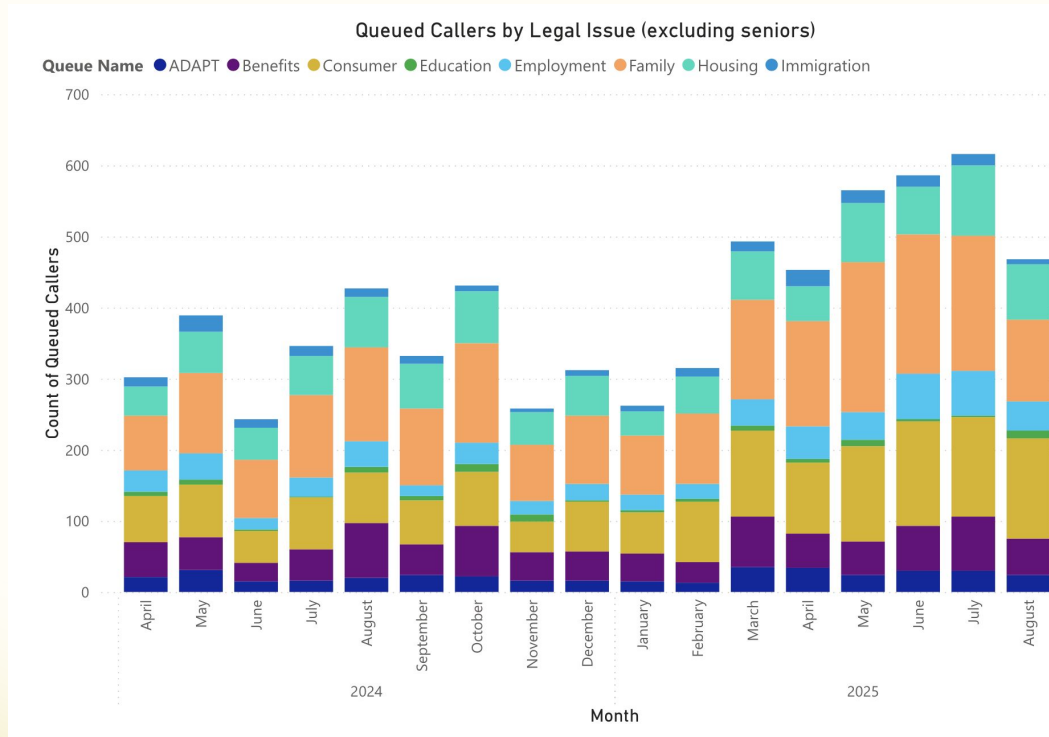
Queue Analysis

Presentation #1 Goals:

1. What is the distribution of legal Issues for clients waiting in queues?

2. How are client needs evolving?

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Queued Callers by Legal Issues (excluding seniors)

Queued Callers by Legal Issue (excluding seniors)

Queue Name ● ADAPT ● Benefits ● Consumer ● Education ● Employment ● Family ● Housing ● Immigration

Key Findings:
- Uptick in queue volume beginning in March 2025–present
  - Does this reflect increased demand or increased capacity?

- Uptick in overall volume driven by specific legal issue types
  - E.g. Consumer, Family

Distinct Caller Volume in Select Queues

Counts of Callers in Select Queues (excluding seniors)

Queue Name ● Consumer ● Employment ● Family ● Housing
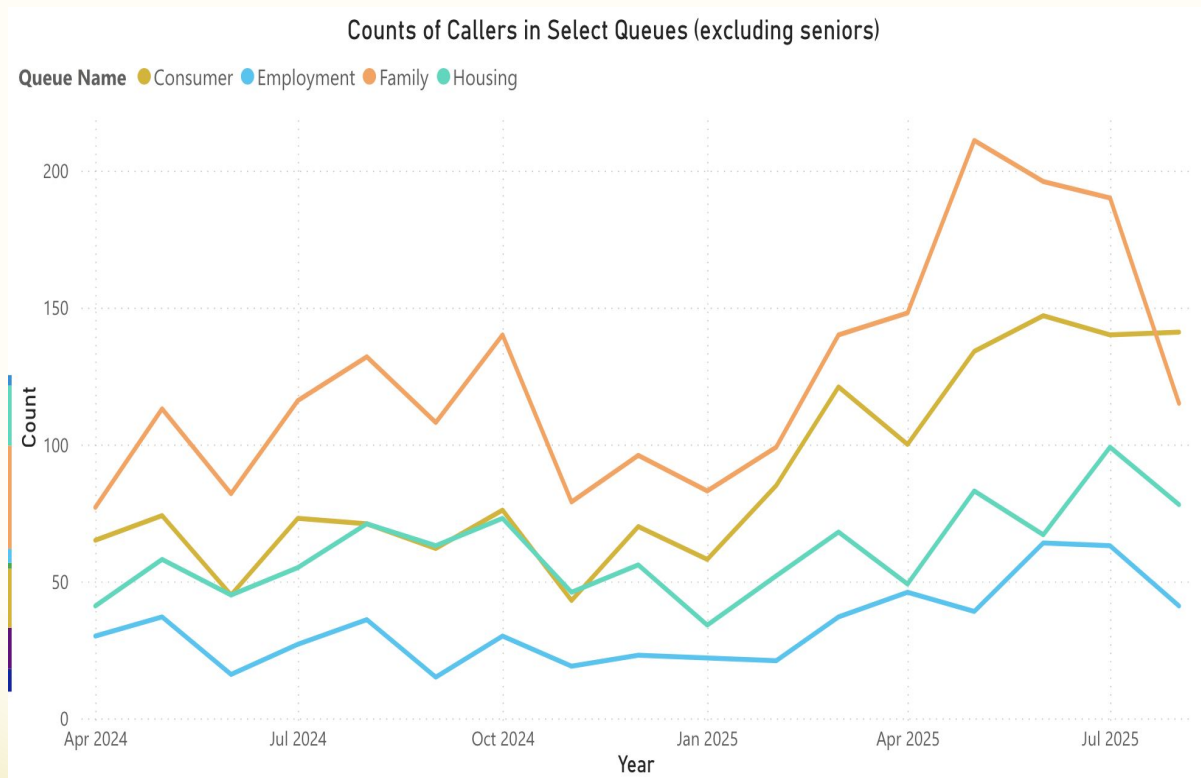
Key Findings:
- Significant increase in volume of calls queued for Family and Consumer
  - Due to policy changes or cyclical fluctuations?

Next Steps

- Analysis of closed queue volume throughout the day
  - Cynthia mentioned about potentially reopening queue later in the day, see if this makes more sense
- Queue wait time analysis
  - Fluctuations throughout the day/week to advise callers on optimal call times
- Callback analysis
  - Fluctuations in callback times and success rates over the day/week

Potential Metrics

- **Abandonment Rates**
  Calls with "Answered = False" / total inbound calls
  Quantifies missed opportunities for service and helps justify resource increases or chatbot automation.

- **Repeat Caller Ratio**
  Number of calling numbers with more than 1 call / Total calls
  Helps identify if users are not getting help during their first calls

Questions for Cynthia

- How does the clinic triage seniors compared to non–seniors?

- Does increased queue volume reflect increased demand or increased capacity?

- Data dating further back?