

Care Transition Efficiency & Placement Outcome Analytics

Detailed guide and project requirements for the Care Transition Efficiency & Placement Outcome Analytics analysis.

Background and Context

The UAC Program operates as a multi-stage care and reunification pipeline, not just a healthcare system. Losing existing customers leads to:

The pipeline consists of:

- Ⓐ • Apprehension & CBP custody
- Ⓑ • Transfer to HHS care
- Ⓒ • Medical screening, sheltering, and case management
- Ⓓ • Discharge and reunification with a vetted sponsor

- Medical screening, sheltering, and case management
- Discharge and reunification with a vetted sponsor

From a policy and humanitarian perspective, speed, continuity, and reliability of this pipeline are as critical as capacity.

 Unified Mentor

 U.S Department of Health and Human Services

Problem Statement

While aggregate counts of children in custody are monitored, process efficiency metrics are largely absent.

Key unanswered questions include:

- How efficiently are children transferred from CBP to HHS?
- Are discharges keeping pace with inflows?
- When and where do care backlogs accumulate?
- Are placement outcomes improving or deteriorating over time?

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Without structured transition analytics, system bottlenecks remain hidden.

Project Objectives

- Measure efficiency of CBP → HHS transitions
- Evaluate discharge and sponsor placement outcomes
- Identify delays and process bottlenecks

Secondary Objectives

- Support faster reunification
- Improve case management workflows
- Inform policy-level process reforms

Dataset Description

COLUMN	DESCRIPTION
Date	Reporting date
Children apprehended and placed in CBP custody	Daily intake volume
Children in CBP custody	Active CBP care load
Children transferred out of CBP custody	Flow into HHS system
Children in HHS Care	Active HHS care load
Children discharged from HHS Care	Successful sponsor placements

Analytical Methodology (Step-by-Step)



Care Pipeline Modeling

- Represent system as a flow pipeline
- Define stages: CBP custody → HHS care → Sponsor placement
- Track daily movements between stages



Transition Efficiency Metrics

Derived process metrics include:

- Transfer Efficiency Ratio
$$\text{Transfers} \div \text{CBP Custody}$$
- Discharge Effectiveness

● **Transition Efficiency Metrics**

Derived process metrics include:

- Transfer Efficiency Ratio
 $\text{Transfers} \div \text{CBP Custody}$
- Discharge Effectiveness
 $\text{Discharges} \div \text{HHS Care}$
- Pipeline Throughput Rate
 $\text{Total exits} \div \text{Total entries}$

● **Backlog & Delay Identification**

- Compare inflow vs successful exits
- Identify sustained imbalance periods
- Detect accumulation of unresolved cases



Temporal & Pattern Analysis

- Weekday vs weekend transition speed
- Month-over-month placement trends
- Identification of prolonged stagnation periods



Outcome Stability Analysis

- Variability in discharge performance
- Consistency of placement outcomes
- Sudden drops in reunification success

Key Performance Indicators (KPIs)

KPI NAME	DESCRIPTION
Transfer Efficiency Ratio	Measures CBP → HHS speed
Discharge Effectiveness Index	Placement success
Pipeline Throughput	Overall system movement
Backlog Accumulation Rate	Delay severity
Outcome Stability Score	Consistency of placements

Streamlit Web Application Requirements

Core Modules

- Care Pipeline Flow Visualization
- Transfer & Discharge Efficiency Panels
- Bottleneck Detection Charts
- Outcome Trend Analysis

User Capabilities

- Date range selection
- Ratio-based metric toggles
- Threshold-based alerts (visual)

Deliverables and Submission

- Research paper (EDA, insights, recommendations)
- Streamlit dashboard (live analytics)
- Executive summary for government stakeholders

Conclusion

This project reframes the UAC dataset from a capacity monitoring lens to a process efficiency and outcome evaluation lens. By analyzing how effectively children move through the care pipeline, it provides actionable insights for improving reunification timelines, reducing delays, and strengthening child welfare outcomes.



Access Dataset