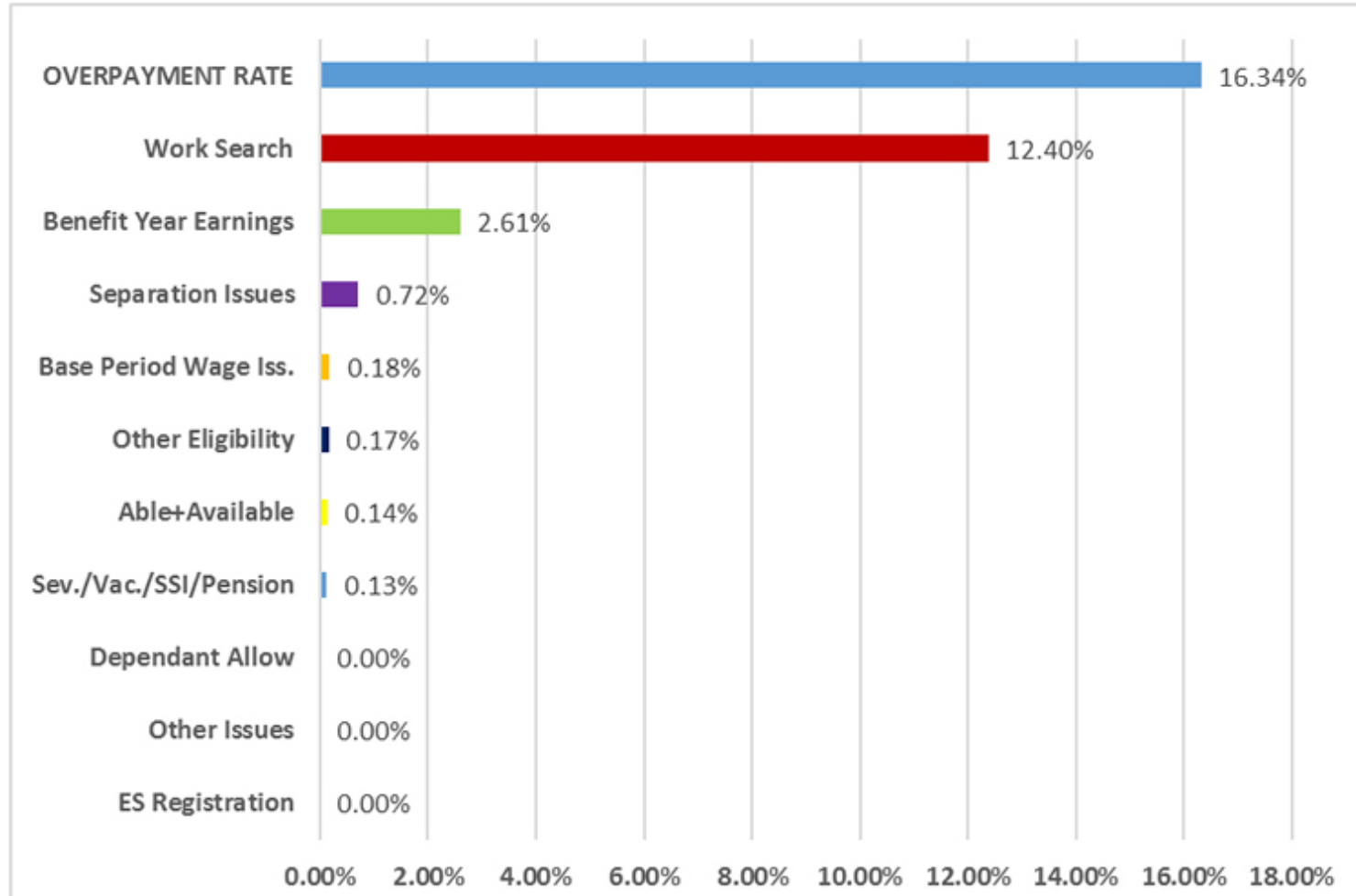
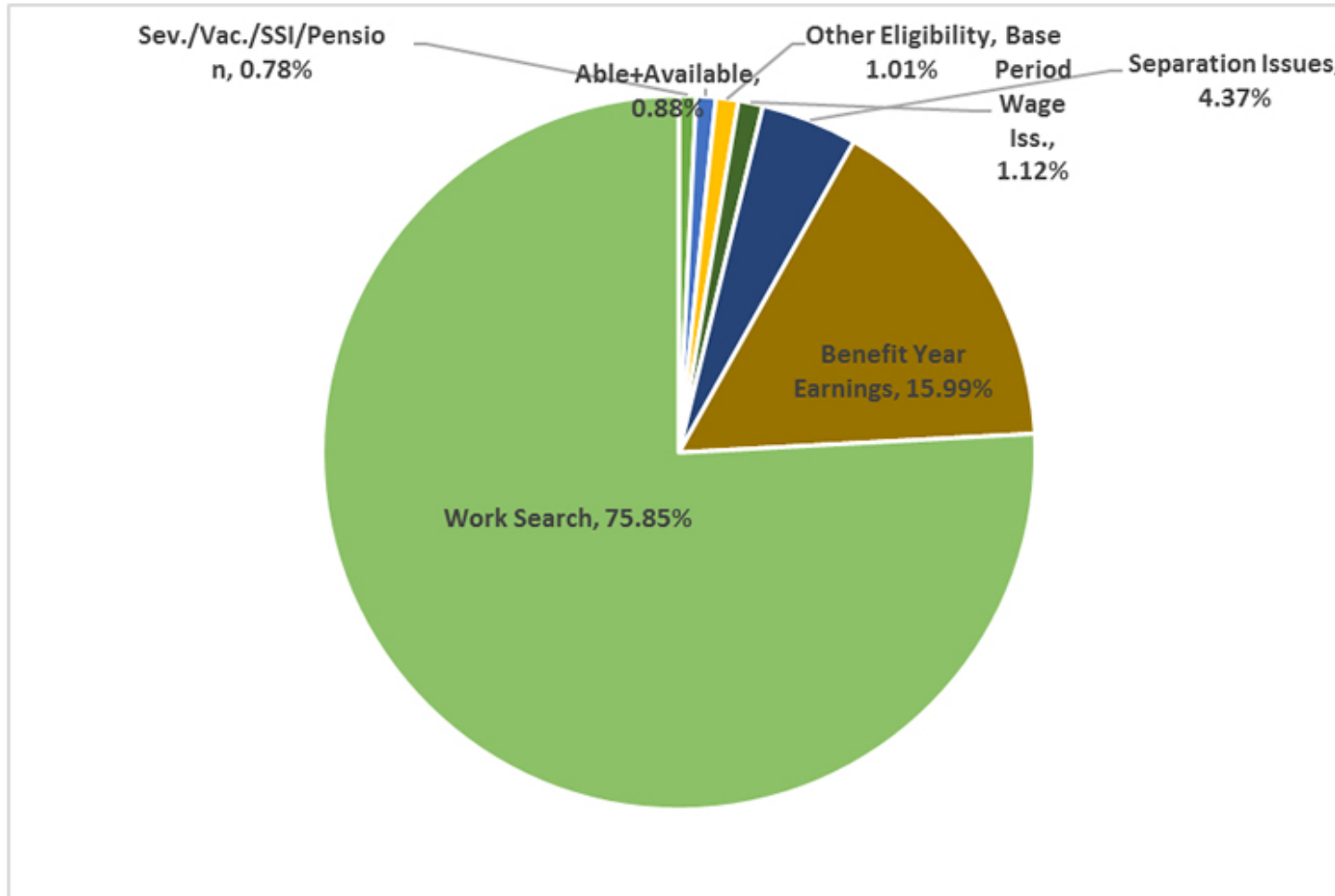


This bar chart depicts the state's estimated overpayment and root cause rates as a percent of total UI benefits paid for the three-year period from July 1, 2015 through June 30, 2018:



## UI Improper Payment Root Causes as a Percent of Overpayments

This pie chart depicts the state's estimated overpayment root causes as a percent of total overpayments for the three-year period from July 1, 2015 through June 30, 2018:



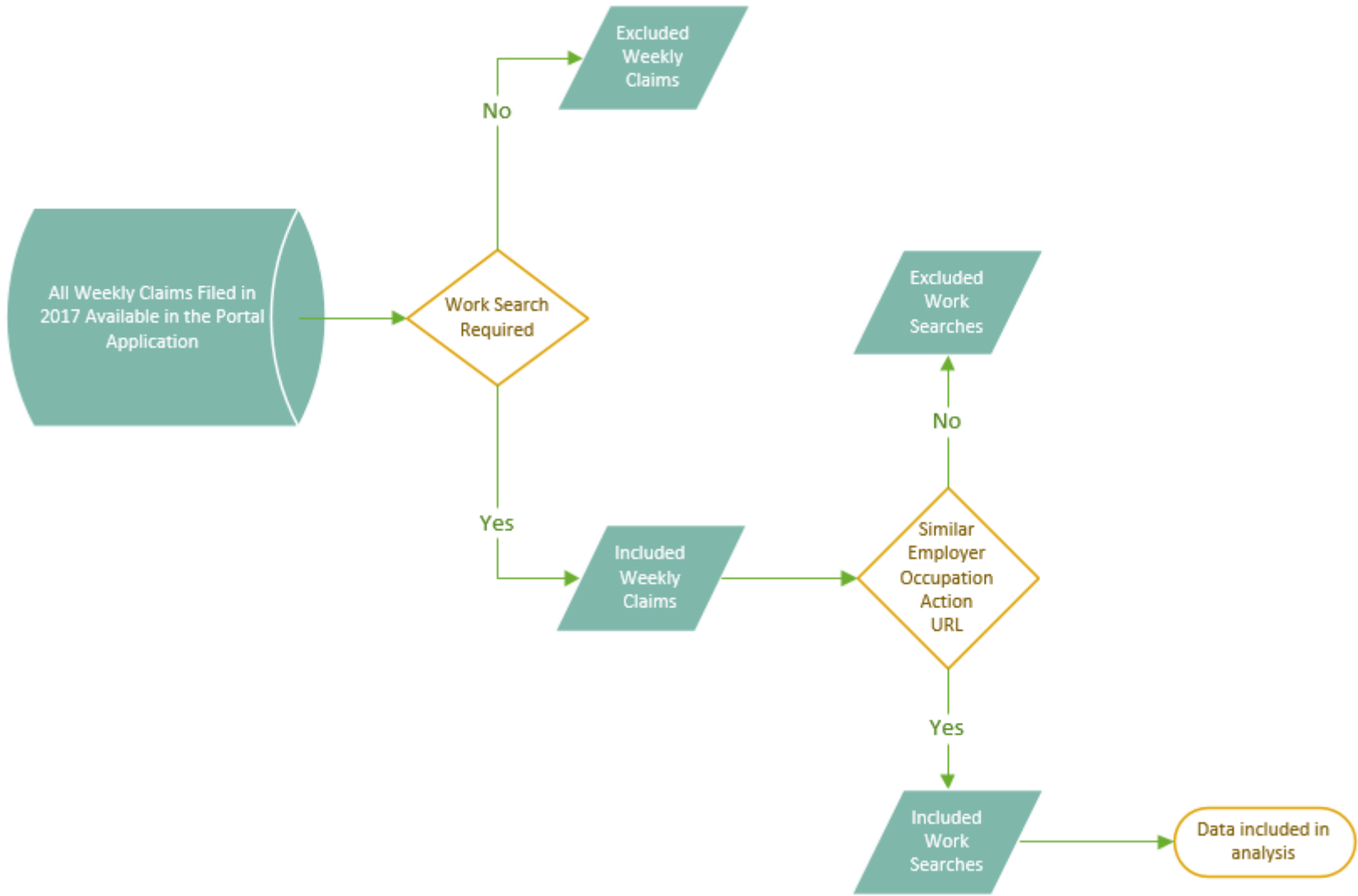
# Work Search Analytics Objectives

Build a statistical model that scores the riskiness of a weekly claim as having a problematic work search

Through that process we are testing and identifying red-flag attributes are related to problematic work searches.

- One piece of this effort is to use pattern matching to identify if claimants enter the same or similar employer occupation combinations across weeks of work searches





# Work Search Required Criteria

## ERP CODE

### SECOND DIGIT DESCRIPTION

0	WORK SEARCH REQUIRED
1	WORK SEARCH REQUIRED - REQUIRED BY SS 108.141 OR ILHR 127.06
2	WORK SEARCH WAIVED - RECALL
3	WORK SEARCH WAIVED - NEW EMPLOYMENT
4	WORK SEARCH WAIVED - UNION MEMBER
5	WORK SEARCH WAIVED - APPROVED TRAINING
6	WORK SEARCH REQUIRED - SPECIAL PROGRAM
7	WORK SEARCH WAIVED - PARTIAL WAGES
8	WORK SEARCH WAIVED - NOT CLAIMING
9	WORK SEARCH UNKNOWN

- The portal application records claimant ERPs as of the weekly certification.
- Each of the 894,868 claimants had an ERP with a second digit of either 0 or 1

# Similar Employer-Occupation Criteria

## WORK SEARCH

ACTIVITY CODE	WORK SEARCH ACTIVITY	WORK SEARCH TYPE FILTER
1	Supplied résumé	Included in string matching analysis
2	Filled out application	Included in string matching analysis
3	Took civil service exam	Not included in the string matching analysis
4	Completed work registration	Not included in the string matching analysis
5	Non-mandatory DWD Re-employment	Not included in the string matching analysis
6	Attended non-DWD Re-employment	Not included in the string matching analysis
7	Registered placement facility	Included in string matching analysis
8	Posted résumé employment website	Included in string matching analysis
9	Registered with a headhunter	Not included in the string matching analysis
10	Met with a career counselor	Not included in the string matching analysis
11	Other	Included in string matching analysis
12	Interview	Included in string matching analysis
13	Attended job fair or career expo	Not included in the string matching analysis
14	Mandatory DWD Re-employment	Not included in the string matching analysis

- Each work search within portal has a corresponding activity code
- String analysis includes activity, website (if entered), employer (if entered), and occupation
- 83% of 2017 Work Search Required Weekly Claims

(739,789 claims) /  
(894,868 claims)



- A claimant week was audited if there is the presence of an RA hold on that week
- 35,009 claimant weeks were audited in 2017
- 6,778 claimant weeks were denied due to improper work search
- 28,231 claimant weeks had adequate work searches

## WORK SEARCH DENIAL

FAMILY CODE	RESOLUTION CODE
AA	140
AA	150
AA	170
QE	550
WS	100
WS	110



# Finding Near or Exactly Duplicated Work Searches



2 Types of Duplicates

Within Week

Between Week

SSN	YEAR WEEK OF CLAIM	EMPLOYER	OCCUPATION	Work Search Activity	Combined String
555555555	201704			JCW System Generated	
555555555	201704	Southern Company	Operations Manager	Supplied résumé	Southern CompanyOperations Manager
555555555	201704	Touchstone energy	Powerplant operator	Supplied résumé	Touchstone energyPowerplant operator
555555555	201704	Suthern Company	Operations Manager	Supplied résumé	Suthern CompanyOperations Manager



	Southern CompanyOperations Manager	Touchstone energyPowerplant operator	Suthern CompanyOperations Manager
Southern CompanyOperations Manager	0	26	1
Touchstone energyPowerplant operator	26	0	27
Suthern CompanyOperations Manager	1	27	0



SSN	YEAR WEEK OF CLAIM	EDIT DISTANCES	DUPLICATE WEEK FLAG
555555555	201704	[26, 1, 27]	1

**RULE**  
 DUPLICATE WEEK FLAG = 1  
 IF EDIT DISTANCES  
 CONTAINS 0, 1, 2,3,4,5,6





- Work searches in key weekly claim compared to previous 4 weeks
- Estimate matrix of string edit distances between work searches + additional claim data
- String edit distances of 6 or less are considered duplicate work searches

SSN	YEAR WEEK OF CLAIM
123456789	201704
123456789	201705
123456789	201706
123456789	201707
123456789	201708
123456789	201710

201808 Week Flag Includes:  
Work search in 201708 compared across year weeks 201704, 201705, 201706, 201707

201710 Week Flag Includes:  
Work search in 201710 compared across year weeks 201706, 201707, 201708



# 2017

- 9.47% of weekly claims sent for audit contained duplicates
- **35,009 audits → \$3,074,724 detected overpayments**

# Pilot

- 48.19% of weekly claims sent for audit contained duplicates
- **Estimated detected overpayments assuming 2017 workload and audit targeting**

