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# Sample Design Considerations for the Occupational Requirements Survey

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# Overview

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- Introduction to National Compensation Survey (NCS)
- Summary of NCS Sample Design
- Introduction to the Occupational Requirements Survey (ORS)
- Sample Design Options for ORS
- Conclusion and Next Steps

# Introduction to NCS

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- Designed to produce:
  - ▶ Change of cost to the employer for wages and benefits
    - Employment Cost Index (ECI)
  - ▶ Level estimates of employer-cost of wages and benefits
    - Employer Costs for Employee Compensation (ECEC)
  - ▶ Incidence and provisions of employee benefits
    - Health, retirement, leave, ect.

# Summary of NCS Sample Design

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- National survey of establishments; private and state/local government
- Stratified sample design
  - ▶ Explicit stratification done by 5 aggregate industries and 24 geographic areas
  - ▶ Implicit stratification of 24 detailed industries
    - All detailed industries have a sampling target percentage
    - NCS over-samples education, hospitals, nursing homes, aerospace due to response rates and variances

# Summary of NCS Sample Design

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- Two stage sample design with PPS sampling at each stage
  - ▶ Establishments sampled within predetermined areas and industries
  - ▶ Jobs sampled within establishments
- About 10,000 private industry establishments sampled over 3 rotating panels, initiated by personal contact and updated quarterly for the next 3 years

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# Introduction to ORS

## Disability Programs



# Introduction to ORS

The Occupational Requirements Survey (ORS) - a **test** survey providing job related-data including:

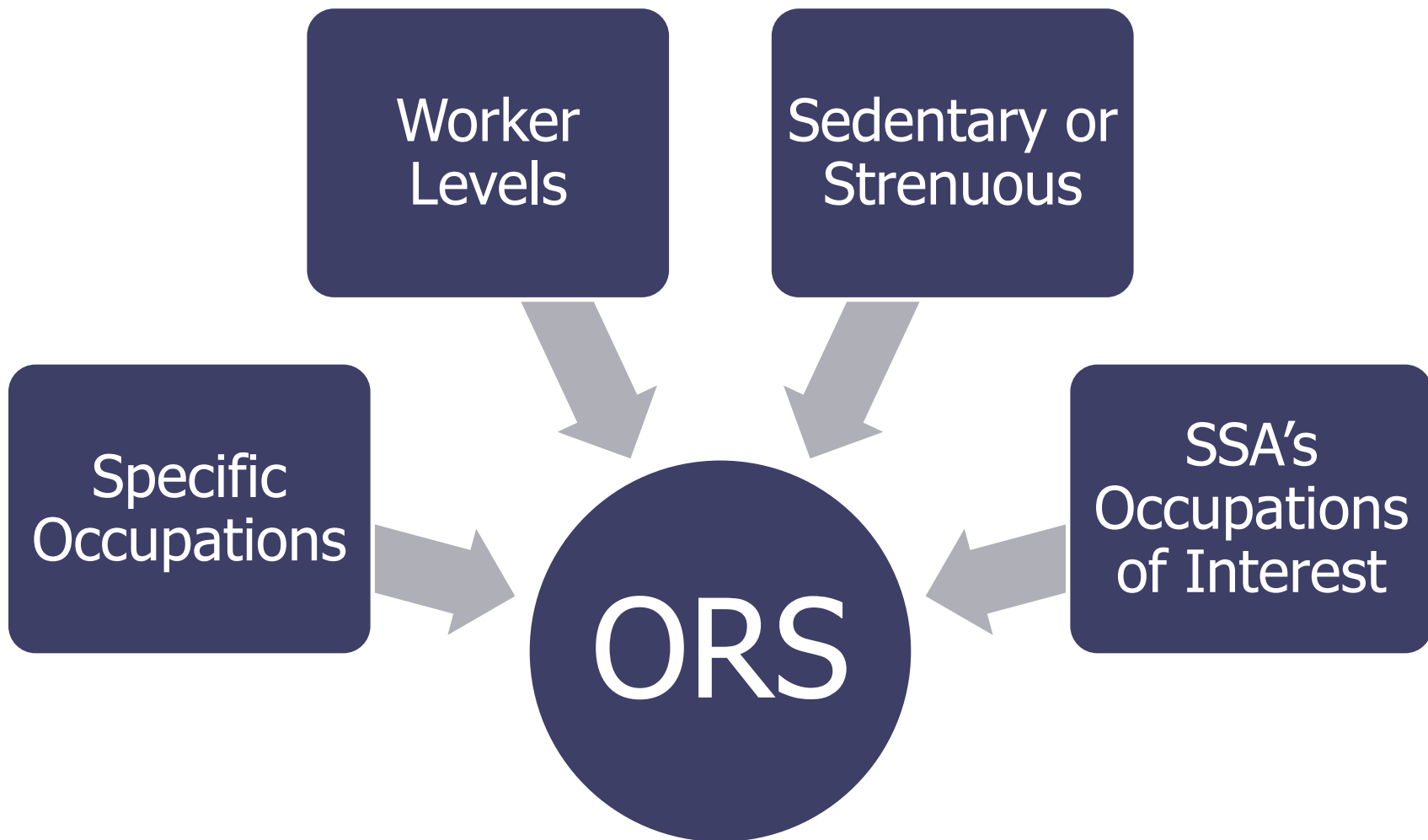
- Physical Demands
- Environmental Conditions
- Specific Vocational Preparation





# ORS Interests

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# SSA's Occupations of Interest

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- According to SSA, less than 240 occupations represent about 70% of previously held jobs seen in disability claims
- Most of these occupations are already being collected in NCS!

# Comparison of NCS and ORS

	NCS	ORS
Focus	Cost of Labor	Characteristics of work
Scope	All industries and occupations	All industries and occupations
Data provider	HR department, managers	HR department, managers
Sample Size	11,400	~ 30,000
Geographic Detail	National Census Divisions and 15 largest met areas	National
Occupational Detail	Major groups	Detailed Occupations
Estimates	Index, Level, Percentiles	Percent of workers with an ORS characteristic

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# Sample Design Options for ORS

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- Approach used in developing the sample design
  - ▶ Identify manageable set of viable designs
  - ▶ Model and test designs by running simulations
  - ▶ Refine, eliminate, supplement designs as necessary
  - ▶ Select best design based on statistical criteria

# Sample Design Options for ORS

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1. Integrated design:
  - ▶ NCS as sub-sample of ORS
  - ▶ Other coordination of samples
2. Independent design:
  - ▶ Sample NCS and ORS separately

# Integrated Sample Design

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## ■ Pros:

- ▶ Efficient use of resources (\$, staff, systems)

## ■ Cons:

- ▶ Increased individual respondent burden
- ▶ May need to compromise goals of one/both survey/s
  - Strata definitions
  - Methods for sampling occupations
  - Sample distribution among industries

# Integrated Sample Design

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- Run 150 simulated samples
- Evaluate by:
  - ▶ Average sample count
  - ▶ Average employment (compare to frame)
    - By detailed industry (NCS target distribution)
    - By area



# Integrated Sample Design Results

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- Sampling ORS with NCS industry targets:
  - ▶ Maintains current NCS sample by industry
  - ▶ NCS industry distribution likely not ideal for ORS
    - Large amounts of sample allocated to hospitals and schools – not needed for ORS

# Integrated Sample Design Results

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- Sampling ORS with sample size allocated proportional to employment:
  - ▶ Fine for ORS
  - ▶ Challenging to implement for NCS
    - Small sub-frame
    - Industry distribution differs between frame and intended sample
    - Could not meet all NCS detailed industry targets

# Independent Sample Design

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## ■ Pros:

- ▶ Could customize each survey to meet goals
- ▶ Less individual respondent burden for most NCS respondents

## ■ Cons:

- ▶ More resources needed (\$, staff)
- ▶ Increased effort to coordinate collection of establishments appearing in NCS and ORS

# Independent Sample Design

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- Run 150 simulated samples
- Evaluation
  - ▶ ORS average sample counts, employment
  - ▶ Investigate the number of establishments that appear in both NCS and ORS

# Independent Sample Design Results

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## ■ Observations

- ▶ Both ORS and NCS have favorable sample results
- ▶ About 6% of NCS would overlap with ORS

# Further Sample Design Evaluation

- Evaluate the feasibility of the selected design(s) and make final determination
  - ▶ Feasibility Tests – small scale tests focused on specific issues
    - Efficiency test
    - NCS/ORS Joint collection test
    - Central office collection test
  - ▶ Pre-production Test
    - National test
    - Evaluate burden, cost and response rates
    - Compute test estimates and variances

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# Conclusion

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- Many considerations to juggle:
  - ▶ Cost
  - ▶ Burden, both for individual respondents and overall
  - ▶ Response rates
  - ▶ Accuracy of estimates
  - ▶ Effect on the ECI



# Next Steps

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- Research continues
  - ▶ Decide on an integrated design
  - ▶ Find an Independent sample design for ORS
  - ▶ Sampling state and local government

# Next Steps

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- A sample design is due by late April 2014 for a pre-production test
  - ▶ NCS as a sub-sample of ORS
  - ▶ NCS and ORS as separate, independent samples
- ORS moves into production in 2015

# Contact Information

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