

Data Documentation

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Project Overview

Original Project Title:	Nursing Home Culture Change: Evaluating Change in Practice and Quality Outcomes
Principal Investigator	Susan Miller, PhD
Manuscript Title	The Benefits of Culture Change in Nursing Homes – Obtaining Nationally Representative Evidence
Lead Author	Julie Lima, PhD, MPH
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Data Use Agreement	RSCH-2017-51355

Purpose

The purpose of this document is to provide more detailed information about the data and analyses used for the above manuscript published in the *Journal of the American Medical Directors Association*.

Data Sources

We merged data from several different data sources to complete our analyses. Due to data use agreement restrictions, we are unable to provide the analytic files.

Data Sources	Description	Variables	Link
Shaping Long-Term Care in America Survey	Time 1 survey of panel study conducted under P01AG027296	Time 1 culture change domain items	https://www.icpsr.umich.edu/studyID/ICPSR_37394
Nursing Home Culture Change Survey (NHCCS)	Time 2 survey of panel study	Time 2 culture change domain items	N/A but see survey items at the end of this document.
Master Beneficiary Summary file	Medicare enrollment data	Demographic information	www.resdac.org
Hospice claims	Medicare hospice claims	Exclusion criteria for some outcome measures	www.resdac.org
Minimum Data Set (2.0 and 3.0)	federally mandated nursing home resident assessment data	Outcome measures	www.resdac.org
OSCAR/CASPER	Online Survey Certification and Reporting database/Certification and Survey Provider Advanced Reporting	NH characteristics	Email igies@cms.hhs.gov with questions on how to access
NH Compare	Data on NHs consolidated by the Centers for Medicare and Medicaid Services	Indicator that NH is a continuing care retirement community	https://www.medicare.gov/nursinghomecompare/search.html
LTCfocus	Aggregated NH level data derived from enrollment and MDS files	Aggregate NH resident characteristics	www.ltcfocus.org
Area Health Resource file	County, state, and national data gathered by the Health Resources & Services Administration from	Metropolitan location; census regions	https://data.hrsa.gov/topics/health-workforce/ahrf

All analyses described in this document were conducted using Stata 15.

Calculation of Culture Change Index Scores

Survey Questions & Item Coding

Item	Recodes of Survey Responses
Physical Environment Domain	
What proportion of residents have a private room?	0-4 ^a
<i>Please indicate if each of the following statements applies to your facility:</i>	
The lighting, furniture, and overall environment in residents' living areas are similar to what we would use in our own homes	0-2 ^b
We have kitchen areas that are accessible to residents and families 24/7	0-2
We display residents' personal items, such as family photos, in common living areas outside of their rooms	0-2
We have indoor and/or outdoor play areas for children	0-2
We use open dining where a meal is available for AT LEAST A TWO HOUR period during which residents can choose when to eat	0-2
Staff Empowerment Domain	
<i>In your facility, how often...</i>	
Does staff work together to cover shifts when someone can't come to work?	0-3 ^c
Is staff cross-trained to perform tasks outside of their assigned job duties, such as housekeeping staff trained to provide feeding assistance or nursing assistants trained to provide activities?	0-3
Is staff, other than activity and management staff, involved in planning social events?	0-3
Do nursing assistants take part in quality improvement teams?	0-3
Do nursing assistants know when a resident's care plan has changed?	0-3
Does your nursing home give bonuses, raises, or other rewards to nursing assistants who receive extra training or education?	0-3
Does your nursing home permit nursing assistants to choose which residents they care for?	0-3
Resident centered care domain	
<i>At the present time, is it the practice in your facility that...</i>	
Residents choose the times they prefer to eat?	0-2
Residents choose when they want to get up in the morning?	0-2
Residents participate in choosing the types of activities that are offered to them?	0-2
Residents participate in deciding which nursing assistants are assigned to care for them?	0-2

^a 0= 0%; 1=1 to 4%; 2=5 to 25%; 3=26 to 75%; 4=76 to 100%

^b 0= no; 1= working on it; 2= yes

^c 0=never; 1=sometimes 2=often; 3=always

Instructions for Physical Environment Index (done separately for each time period):

- 1) Determine the number of missing responses across the 6 survey items
- 2) Exclude facility (do not calculate a score for this index) if missing on “What proportion of residents have a private room?”
- 3) For the remaining facilities, if missing 3 or more of the remaining items, exclude (do not calculate a score for this index)
- 4) For the remaining facilities with 0, 1, or 2 missing items, within facility (THIS WILL BE THE SAMPLE N WITHIN SURVEY TIME PERIOD FOR THIS MEASURE)
 - Calculate mean score across non-missing items (do NOT use “What proportion of residents have a private room?” in this calculation)
 - Replace score of missing individual item(s) with the mean of the completed items calculated above
- 5) Sum score of all index items to determine total physical environment score.

Instructions for Staff Empowerment Index (done separately for each time period):

- 1) Determine number of missing responses across the 7 items
- 2) Exclude facility (do not calculate a score for this index) if missing on 3 or more items
- 3) For the remaining facilities with 0, 1, or 2 missing items, within facility (THIS WILL BE THE SAMPLE N WITHIN SURVEY TIME PERIOD FOR THIS MEASURE)
 - Calculate mean score across non-missing items
 - Replace score of missing individual item(s) with the mean of the completed items calculated above
- 4) Sum scores of all index items to determine total staff empowerment index score.

Instructions for Resident Centered Care Index (done separately for each time period):

- 1) Determine number of missing responses across the 4 items
- 2) Exclude facility (do not calculate a score for this index) if missing on 2 or more items. As noted in the manuscript, nearly a quarter of the time 1 sample is missing resident centered care scores due to the way the items were collected at time 1.
- 3) For the remaining facilities with 0 or 1 missing items, within facility (THIS WILL BE THE SAMPLE N WITHIN SURVEY TIME PERIOD FOR THIS MEASURE)
 - Calculate mean score across non-missing items
 - Replace score of missing individual item(s) with the mean of the completed items calculated above
- 4) Sum scores of all index items to determine total resident centered care index score.

Calculation of Increase in Culture Change Index Scores over Time

Physical Environment Index:

- 1) Generate an improvement variable (improve_ph_yn)
- 2) Set the improvement variable to missing if the physical environment index score is missing at either time point
- 3) For remaining facilities, subtract the Time 1 index score from the Time 2 index score
 - a. Set the improvement variable =1 if the difference is ≥ 3
 - b. Set the improvement variable =0 if the differences is <3
 - c. Set the improvement variable = missing if the Time 1 index score ≥ 12 (indicates no room for improvement)

Staff Empowerment Index:

- 1) Generate an improvement variable (improve_st_yn)
- 2) Set the improvement variable to missing if the staff empowerment index score is missing at either time point
- 3) For remaining facilities, subtract the Time 1 index score from the Time 2 index score
 - a. Set the improvement variable =1 if the difference is ≥ 3
 - b. Set the improvement variable =0 if the differences is <3
 - c. Set the improvement variable = missing if the Time 1 index score ≥ 19 (indicates no room for improvement)

Resident Centered Care Index:

- 1) Generate an improvement variable (improve_res_yn)
- 2) Set the improvement variable to missing if the resident centered care index score is missing at either time point
- 3) For remaining facilities, subtract the Time 1 index score from the Time 2 index score
 - a. Set the improvement variable =1 if the difference is ≥ 2
 - b. Set the improvement variable =0 if the differences is <2
 - c. Set the improvement variable = missing if the Time 1 index score ≥ 7 (indicates no room for improvement)

Methods and Analyses

Step 1: Generate inverse probability weights (IPWs) to be used in main analyses

Purpose: to create stabilized inverse probability weights (IPWs) to use in the main analyses to adjust for endogeneity between an increase in culture change implementation and NH characteristics that are also related to quality outcomes. This was done since there was no random assignment into treatment and control groups as this was an observational study.

The propensity score analysis was done at the NH level using time 1 covariates. It was done separately for each culture change domain and within each domain, by whether the NH scored at/above or below the median in the culture change domain at baseline. NH characteristics from OSCAR, LTCfocus, and NH Compare, and geographic information from the Area Resource were linked to the survey data. All LTCfocus variables were derived using MDS 2.0 for consistency.

A number of propensity score models were examined to find the best fit. See Supplementary Table 2 accompanying the manuscript for covariate details. Final models used:

```
*Resident Centered Care
logit improve_res_yn profit totbeds multifac ccrc_t1 rnhrrppd lpnhrppd cnahrppd ///
    avgrugcmi pctlowcps pctadl21g pctadl24g pctlblack paymcare paymcaid ///
    hospben anyunit anymdex herfcty metro03 cens2 cens3 cens4 cens5 cens6 cens7 cens8 cens9 if
    res_ltmed==0
    predict pscr2res_aam if e(sample)
tab improve_res_yn if res_ltmed==0
/*
improve_res |
  _yn |          Freq.      Percent      Cum.
-----+-----
          0 |          356          78.94          78.94
          1 |           95          21.06          100.00
-----+-----
        Total |          451          100.00
*/
gen sw_res2_aam = cond(improve_res_yn, .2106/pscr2res_aam, .7894/(1-pscr2res_aam))

logit improve_res_yn profit totbeds multifac ccrc_t1 rnhrrppd lpnhrppd cnahrppd ///
    avgrugcmi pctlowcps pctadl21g pctadl24g pctlblack paymcare paymcaid ///
    hospben anyunit anymdex herfcty metro03 cens2 cens3 cens4 cens5 cens6 cens7 cens8 cens9 if
```

```

res_ltmed==1
    predict pscr2res_ltm if e(sample)
    tab improve_res_yn if res_ltmed==1
/*
improve_res |
   _yn |      Freq.      Percent      Cum.
-----+-----
         0 |         123         30.90         30.90
         1 |         275         69.10        100.00
-----+-----
    Total |         398        100.00

*/
gen sw_res2_ltm = cond(improve_res_yn, .6910/pscr2res_ltm, .3090/(1-pscr2res_ltm))

*Staff Empowerment
logit  improve_st_yn profit totbeds multifac ccrc_t1 rnhrrppd lpnhrppd cnahrppd ///
avgrugcmi pctlowcps pctadl21g pctadl24g pctblack paymcare paymcaid ///
hospben anyunit anymdex herfcty metro03 cens2 cens3 cens4 cens5 cens6 cens7 cens8 cens9 if
st_ltmed==0
    predict pscr2st_aam if e(sample)
    tab improve_st_yn if st_ltmed==0
/*
improve_st_ |
   _yn |      Freq.      Percent      Cum.
-----+-----
         0 |         719         84.59         84.59
         1 |         131         15.41        100.00
-----+-----
    Total |         850        100.00

*/
gen sw_st2_aam = cond(improve_st_yn, .1541/pscr2st_aam, .8459/(1-pscr2st_aam))

logit  improve_st_yn profit totbeds multifac ccrc_t1 rnhrrppd lpnhrppd cnahrppd ///
avgrugcmi pctlowcps pctadl21g pctadl24g pctblack paymcare paymcaid ///
hospben anyunit anymdex herfcty metro03 cens2 cens3 cens4 cens5 cens6 cens7 cens8 cens9 if
st_ltmed==1
predict pscr2st_ltm if e(sample)

tab improve_st_yn if st_ltmed==1
/*improve_st_ |
   _yn |      Freq.      Percent      Cum.
-----+-----
         0 |         271         46.25         46.25
         1 |         315         53.75        100.00
-----+-----
    Total |         586        100.00

*/
gen sw_st2_ltm = cond(improve_st_yn, .5375/pscr2st_ltm, .4625/(1-pscr2st_ltm))

*Person centered care
logit  improve_ph_yn profit totbeds multifac ccrc_t1 rnhrrppd lpnhrppd cnahrppd ///
avgrugcmi pctlowcps pctadl21g pctadl24g pctblack paymcare paymcaid ///
hospben anyunit anymdex herfcty metro03 cens2 cens3 cens4 cens5 cens6 cens7 cens8 cens9 if
ph_ltmed==0
predict pscr2ph_aam if e(sample)
tab improve_ph_yn if ph_ltmed==0
/*
improve_ph_ |
   _yn |      Freq.      Percent      Cum.
-----+-----

```

-----+-----			
0	641	88.41	88.41
1	84	11.59	100.00
-----+-----			
Total	725	100.00	

*/

```
gen sw_ph2_aam = cond(improve_ph_yn, .1159/pscr2ph_aam, .8841/(1-pscr2ph_aam))
```

```
logit improve_ph_yn profit totbeds multifac ccrc_t1 rnhrrpd lphrrpd cnahrppd ///
avgrugcmi pctlowcps pctadl21g pctadl24g pctblack paymcare paymcaid ///
hospben anyunit anymdex herfcty metro03 cens2 cens3 cens4 cens5 cens6 cens7 cens8 cens9 ///
c6pctblack c7pctblack c9pctblack c6pctadl24g c7pctadl24g c9pctadl24g profit_multi if
ph_ltmed==1
```

```
predict pscr2ph_ltmr2 if e(sample)
```

```
tab improve_ph_yn if ph_ltmed==1
```

```
/*
```

improve_ph_				
yn		Freq.	Percent	Cum.
-----+-----				
0		464	67.54	67.54
1		223	32.46	100.00
-----+-----				
Total		687	100.00	

*/

```
gen sw_ph2_ltmr2= cond(improve_ph_yn, .3246/pscr2ph_ltmr2, .6754/(1-pscr2ph_ltmr2))
```

Code for supplemental tables 3-8 showing balance of the sample using the stabilized weights (sw_*) generated above:

```
*rcc at/above - sw_res2_aam
```

```
**balance before weighting
```

```
*1 vs 0
```

```
covbal improve_res_yn profit totbeds multifac ccrc_t1 rnhrrpd lphrrpd cnahrppd ///
avgrugcmi pctlowcps pctadl21g pctadl24g pctblack paymcare paymcaid ///
hospben anyunit anymdex herfcty metro03 cens1 cens2 cens3 cens4 cens5 cens6 cens7 cens8
cens9 if res_ltmed==0
```

```
**balance after weighting
```

```
*1 vs 0
```

```
covbal improve_res_yn profit totbeds multifac ccrc_t1 rnhrrpd lphrrpd cnahrppd ///
avgrugcmi pctlowcps pctadl21g pctadl24g pctblack paymcare paymcaid ///
hospben anyunit anymdex herfcty metro03 cens1 cens2 cens3 cens4 cens5 cens6 cens7 cens8
cens9 , wt(sw_res2_aam)
```

```
*rcc below median - sw_res2_ltm
```

```
*balance before weighting
```

```
covbal improve_res_yn profit totbeds multifac ccrc_t1 rnhrrpd lphrrpd cnahrppd ///
avgrugcmi pctlowcps pctadl21g pctadl24g pctblack paymcare paymcaid ///
hospben anyunit anymdex herfcty metro03 cens1 cens2 cens3 cens4 cens5 cens6 cens7 cens8
cens9 if res_ltmed==1
```

```
**balance after weighting
```

```
*1 vs 0
```

```
covbal improve_res_yn profit totbeds multifac ccrc_t1 rnhrrpd lphrrpd cnahrppd ///
avgrugcmi pctlowcps pctadl21g pctadl24g pctblack paymcare paymcaid ///
hospben anyunit anymdex herfcty metro03 cens1 cens2 cens3 cens4 cens5 cens6 cens7 cens8
cens9 , wt(sw_res2_ltm)
```

```

*st emp aam - sw_st2_aam
*balance before weighting
covbal improve_st_yn profit totbeds multifac ccrc_t1 rnhrrppd lpnhrppd cnahrppd ///
  avgrugcmi pctlowcps pctadl21g pctadl24g pctblack paymcare paymcaid ///
  hospben anyunit anymdex herfcty metro03 cens1 cens2 cens3 cens4 cens5 cens6 cens7 cens8
cens9 if st_ltmed==0

**balance after weighting
*1 vs 0
covbal improve_st_yn profit totbeds multifac ccrc_t1 rnhrrppd lpnhrppd cnahrppd ///
  avgrugcmi pctlowcps pctadl21g pctadl24g pctblack paymcare paymcaid ///
  hospben anyunit anymdex herfcty metro03 cens1 cens2 cens3 cens4 cens5 cens6 cens7 cens8
cens9 , wt(sw_st2_aam)

*st emp bm - sw_st2_ltm
*balance before weighting
covbal improve_st_yn profit totbeds multifac ccrc_t1 rnhrrppd lpnhrppd cnahrppd ///
  avgrugcmi pctlowcps pctadl21g pctadl24g pctblack paymcare paymcaid ///
  hospben anyunit anymdex herfcty metro03 cens1 cens2 cens3 cens4 cens5 cens6 cens7 cens8
cens9 if st_ltmed==1

**balance after weighting
*1 vs 0
covbal improve_st_yn profit totbeds multifac ccrc_t1 rnhrrppd lpnhrppd cnahrppd ///
  avgrugcmi pctlowcps pctadl21g pctadl24g pctblack paymcare paymcaid ///
  hospben anyunit anymdex herfcty metro03 cens1 cens2 cens3 cens4 cens5 cens6 cens7 cens8
cens9 , wt(sw_st2_ltm)

*ph aam - sw_ph2_aam
*balance before weighting
covbal improve_ph_yn profit totbeds multifac ccrc_t1 rnhrrppd lpnhrppd cnahrppd ///
  avgrugcmi pctlowcps pctadl21g pctadl24g pctblack paymcare paymcaid ///
  hospben anyunit anymdex herfcty metro03 cens1 cens2 cens3 cens4 cens5 cens6 cens7 cens8
cens9 if ph_aamed==1

**balance after weighting
*1 vs 0
covbal improve_ph_yn profit totbeds multifac ccrc_t1 rnhrrppd lpnhrppd cnahrppd ///
  avgrugcmi pctlowcps pctadl21g pctadl24g pctblack paymcare paymcaid ///
  hospben anyunit anymdex herfcty metro03 cens1 cens2 cens3 cens4 cens5 cens6 cens7 cens8
cens9 if ph_aamed==1, wt(sw_ph2_aam)

*ph bm - sw_ph2_ltmr2
*balance before weighting
covbal improve_ph_yn profit totbeds multifac ccrc_t1 rnhrrppd lpnhrppd cnahrppd ///
  avgrugcmi pctlowcps pctadl21g pctadl24g pctblack paymcare paymcaid ///
  hospben anyunit anymdex herfcty metro03 cens1 cens2 cens3 cens4 cens5 cens6 cens7 cens8
cens9 ///
  c6pctblack c7pctblack c9pctblack c6pctadl24g c7pctadl24g c9pctadl24g profit_multi if
ph_ltmed==1

**balance after weighting
covbal improve_ph_yn profit totbeds multifac ccrc_t1 rnhrrppd lpnhrppd cnahrppd ///
  avgrugcmi pctlowcps pctadl21g pctadl24g pctblack paymcare paymcaid ///
  hospben anyunit anymdex herfcty metro03 cens1 cens2 cens3 cens4 cens5 cens6 cens7 cens8
cens9 ///
  c6pctblack c7pctblack c9pctblack c6pctadl24g c7pctadl24g c9pctadl24g profit_multi,
wt(sw_ph2_ltmr2)

```

Step 2: Create Difference-in-Differences variables

*Treatment variables (yes/no) – the 3 culture change improvement variables described above : `improve_ph_yn`, `improve_st_yn`, `improve_res_yn`

```
*time variable (time2=1)
  gen post=0
  replace post=1 if time=="TIME2"
```

```
*DID variable (Treatment x time)
  gen DID_ph=post*improve_ph_yn
  gen DID_st=post*improve_st_yn
  gen DID_res=post*improve_res_yn
```

Step 3: Create resident level outcome measures

We used person-level data from the Minimum Data Set from the Centers for Medicare and Medicaid Services to define our outcome measures. Using the index dates described in the manuscript for Time 1 and Time 2, we defined long-stay residents as individuals who resided in a study NH for at least 100 days prior to the index date with no more than a 10-day gap outside of the NH (e.g., due to a hospitalization). During our time 1 and time 2 study periods, there were 188,606 long-stay residents, 13,735 of whom were present at both time periods.

We then created subsamples for each of the outcome models. Outcomes and their sample exclusion criteria are described in Supplementary Table 1 accompanying the manuscript.

Step 4: Create final analytic files with NH and resident level data

We merged NH level and geographic data derived from the panel survey, OSCAR/CASPER, LTCfocus and the Area Resource by NH provider ID or state/county as applicable. This resulted in a NH level file with 2 observations per NH: Time 1 and Time 2. We then merged this NH level file to the person level file using NH provider and time period. The datasets are structured in the following way:

Facility A	Time 1	Person 1
Facility A	Time 1	Person 2
Facility A	Time 2	Person 3
Facility A	Time 2	Person 4
...		

As just mentioned, each DID analysis relies on a different denominator according to the outcome being examined. For each analysis, we tallied the number of long-stay NH residents within each NH that met the inclusion criteria for a particular outcome. NHs (and accompanying residents) were dropped from a given analysis if there were fewer than 10 residents at either timepoint that met inclusion criteria.

Step 5: Run models

We examined 6 outcomes across 3 domains, and each domain was stratified by its median baseline score. This resulted in 36 DID models. We did not include survey weights in the models because we are not trying to make this representative of the nation because the person-level outcomes that we are looking at are based on specific and sometimes narrow sub-samples within the NHs themselves and we do not want to try to suggest that these sub-samples taken from our sampled

NHs are representative of a national population once we apply a facility level sampling weight. Instead, models are clustered on NH and use the stabilized IPW.

Code and output that generated results for Tables 1 and 2 are provided below.

```
use "P:\nhcch\jcl\data\person_lev_analytic_file_jan2021.dta", clear
*step 1 - KEEP UTI COHORT
drop if prev_uti_den!=1

*step 2 - keep people with no missing variables

misstable summarize profit totbeds multifac paymcare paymcaid hospben anyunit herfcty
terminal anyhospice_prior180
drop if profit>=.
drop if totbeds>=.
drop if multifac>=.
drop if paymcare>=.
drop if paymcaid>=.
drop if hospben>=.
drop if anyunit>=.
*drop if herfcty>=.
drop if terminal>=.
drop if anyhospice_prior180>=.

*step 3 - only keep facilities that have at least 10 longstayers in the UTI
cohort
drop lstaypersons minfac fac_lev
sort accpt_id time
by accpt_id time: gen lstaypersons=_N

by accpt_id: egen minfac=min(lstaypersons)
list accpt_id time lstaypersons minfac time in 1/100
by accpt_id: gen fac_lev=1 if _n==1

tab minfac if fac_lev==1
*need to drop facilities with fewer than 10 longstayers in either year from the analyses

drop if minfac<10

*step 4 - keep facilities that have an entry at both timepoints
by accpt_id time: gen fac_time=1 if _n==1
by accpt_id: egen num_time=total(fac_time)
/*
tab fac_time
tab num_time
tab time if num_time==1
tab accpt_id if num_time==1
tab accpt_id time if num_time==1, miss
*/
drop if num_time==1
*/

*resident centered care at/above median
tab prev_uti_num improve_res_yn if res_ltmed==0 & sw_res2_aam!=. & post==0, col
tab prev_uti_num improve_res_yn if res_ltmed==0 & sw_res2_aam!=. & post==1, col

*resident centered care - below median
tab prev_uti_num improve_res_yn if res_ltmed==1 & sw_res2_ltm!=. & post==0, col
```

```

    tab prev_uti_num improve_res_yn if res_ltmed==1 & sw_res2_ltm!=. & post==1, col

*staff empowerment - at/above median
    tab prev_uti_num improve_st_yn if st_ltmed==0 & sw_st2_aam!=. & post==0, col
    tab prev_uti_num improve_st_yn if st_ltmed==0 & sw_st2_aam!=. & post==1, col

*staff empowerment - below median
    tab prev_uti_num improve_st_yn if st_ltmed==1 & sw_st2_ltm!=. & post==0, col
    tab prev_uti_num improve_st_yn if st_ltmed==1 & sw_st2_ltm!=. & post==1, col

*physical environment - at/above median
    tab prev_uti_num improve_ph_yn if ph_ltmed==0 & sw_ph2_aam!=. & post==0, col
    tab prev_uti_num improve_ph_yn if ph_ltmed==0 & sw_ph2_aam!=. & post==1, col

*physical environment - below median
    tab prev_uti_num improve_ph_yn if ph_ltmed==1 & sw_ph2_ltmr2!=. & post==0, col
    tab prev_uti_num improve_ph_yn if ph_ltmed==1 & sw_ph2_ltmr2!=. & post==1, col

*UTI models

    *resident centered care - at/above median
    logit prev_uti_num improve_res_yn post DID_res profit totbeds multifac ///
    paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if res_ltmed==0 [pw=sw_res2_aam], or cluster (nhid)

*resident centered care - below median
    logit prev_uti_num improve_res_yn post DID_res profit totbeds multifac ///
    paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if res_ltmed==1 [pw=sw_res2_ltm], or cluster (nhid)

*staff empowerment - at/above median
    logit prev_uti_num improve_st_yn post DID_st profit totbeds multifac ///
    paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if st_ltmed==0 [pw=sw_st2_aam], or cluster (nhid)

*staff empowerment - below median
    logit prev_uti_num improve_st_yn post DID_st profit totbeds multifac ///
    paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if st_ltmed==1 [pw=sw_st2_ltm], or cluster (nhid)

*physical environment - at/above median
    logit prev_uti_num improve_ph_yn post DID_ph profit totbeds multifac ///
    paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if ph_ltmed==0 [pw=sw_ph2_aam], or cluster (nhid)

*physical environment - below median
    logit prev_uti_num improve_ph_yn post DID_ph profit totbeds multifac ///
    paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if ph_ltmed==1 [pw=sw_ph2_ltmr2], or cluster (nhid)

*second models - restraints

    use "P:\nhcch\jcl\data\person_lev_analytic_file_jan2021.dta", clear

    *daily physical restraints
    *prev_physrest_num, _den
    tab prev_physrest_num time if prev_physrest_den==1, miss col

```

```

        *step 1 - only keep facilities that have at least 10 longstayers in the
restraint cohort
        drop if prev_physrest_den!=1
        *step 2 - keep people with no missing variables
drop if profit>=.
drop if totbeds>=.
drop if multifac>=.
drop if paymcare>=.
drop if paymcaid>=.
drop if hospben>=.
drop if anyunit>=.
    *drop if herfcty>=.
drop if terminal>=.
drop if anyhospice_prior180>=.

        *step 3 - only keep facilities that have at least 10 longstayers in the UTI
cohort
        drop lstaypersons minfac fac_lev
sort accpt_id time
by accpt_id time: gen lstaypersons=_N

by accpt_id: egen minfac=min(lstaypersons)
list accpt_id time lstaypersons minfac time in 1/100
by accpt_id: gen fac_lev=1 if _n==1

tab minfac if fac_lev==1
*need to drop facilities with fewer than 10 longstayers in either year from the analyses

        drop if minfac<10

        *step 4 - keep facilities that have an entry at both timepoints
        by accpt_id time: gen fac_time=1 if _n==1
        by accpt_id: egen num_time=total(fac_time)
        /*
        tab fac_time

tab num_time
tab time if num_time==1
tab accpt_id if num_time==1
tab accpt_id time if num_time==1, miss
*/
        drop if num_time==1

        log using "P:\nhcch\jcl\output\table1_new_01192021.smcl", append

        *resident centered care - at/above median
tab prev_physrest_num improve_res_yn if res_ltmed==0 & sw_res2_aam!=. & post==0, col
tab prev_physrest_num improve_res_yn if res_ltmed==0 & sw_res2_aam!=. & post==1 ,
col

        *resident centered care - below median
tab prev_physrest_num improve_res_yn if res_ltmed==1 & sw_res2_ltm!=. & post==0, col
tab prev_physrest_num improve_res_yn if res_ltmed==1 & sw_res2_ltm!=. & post==1, col

        *staff empowerment - at/above median
tab prev_physrest_num improve_st_yn if st_ltmed==0 & sw_st2_aam!=. & post==0, col
tab prev_physrest_num improve_st_yn if st_ltmed==0 & sw_st2_aam!=. &
post==1, col

        *staff empowerment - below median

```

```

    tab prev_physrest_num improve_st_yn if st_ltmed==1 & sw_st2_ltm!=. & post==0, col
    tab prev_physrest_num improve_st_yn if st_ltmed==1 & sw_st2_ltm!=. & post==1, col

*physical environment - at/above median
    tab prev_physrest_num improve_ph_yn if ph_ltmed==0 & sw_ph2_aam!=. & post==0, col
    tab prev_physrest_num improve_ph_yn if ph_ltmed==0 & sw_ph2_aam!=. & post==1, col

*physical environment - below median
    tab prev_physrest_num improve_ph_yn if ph_ltmed==1 & sw_ph2_ltmr2!=. & post==0, col
    tab prev_physrest_num improve_ph_yn if ph_ltmed==1 & sw_ph2_ltmr2!=. & post==1,
col

*Physical restraint models
    logit prev_physrest_num improve_res_yn post DID_res profit totbeds multifac ///
    paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if res_ltmed==0 [pw=sw_res2_aam], or cluster (nhid)

*resident centered care - below median
    logit prev_physrest_num improve_res_yn post DID_res profit totbeds multifac ///
    paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if res_ltmed==1 [pw=sw_res2_ltm], or cluster (nhid)

*staff empowerment - at/above median
    logit prev_physrest_num improve_st_yn post DID_st profit totbeds multifac ///
    paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if st_ltmed==0 [pw=sw_st2_aam], or cluster (nhid)

*staff empowerment - below median
    logit prev_physrest_num improve_st_yn post DID_st profit totbeds multifac ///
    paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if st_ltmed==1 [pw=sw_st2_ltm], or cluster (nhid)

*physical environment - at/above median
    logit prev_physrest_num improve_ph_yn post DID_ph profit totbeds multifac ///
    paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if ph_ltmed==0 [pw=sw_ph2_aam], or cluster (nhid)

*physical environment - below median
    logit prev_physrest_num improve_ph_yn post DID_ph profit totbeds multifac ///
    paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if ph_ltmed==1 [pw=sw_ph2_ltmr2], or cluster (nhid )

*third models - antipsychotics

    use "P:\nhcch\jcl\data\person_lev_analytic_file_jan2021.dta", clear

*antipsychotics
    tab prev_antipsych_num time if prev_antipsych_den==1, miss col

    *step 1 - only keep facilities that have at least 10 longstayers in the
restraint cohort
    drop if prev_antipsych_den!=1
    *step 2 - keep people with no missing variables
drop if profit>=.
drop if totbeds>=.
drop if multifac>=.
drop if paymcare>=.
drop if paymcaid>=.
drop if hospben>=.

```

```

drop if anyunit>=.
drop if terminal>=.
drop if anyhospice_prior180>=.

*step 3 - only keep facilities that have at least 10 longstayers in the UTI
cohort
    drop lstaypersons minfac fac_lev
sort accpt_id time
by accpt_id time: gen lstaypersons=_N

by accpt_id: egen minfac=min(lstaypersons)
list accpt_id time lstaypersons minfac time in 1/100
by accpt_id: gen fac_lev=1 if _n==1

tab minfac if fac_lev==1
*need to drop facilities with fewer than 10 longstayers in either year from the analyses

    drop if minfac<10

*step 4 - keep facilities that have an entry at both timepoints
by accpt_id time: gen fac_time=1 if _n==1
by accpt_id: egen num_time=total(fac_time)
/*
    tab fac_time
tab num_time
tab time if num_time==1
tab accpt_id if num_time==1
tab accpt_id time if num_time==1, miss
*/
    drop if num_time==1

*resident centered care - at/above median
    tab prev_antipsych_num improve_res_yn if res_ltmed==0 & sw_res2_aam!=. & post==0,
col
    tab prev_antipsych_num improve_res_yn if res_ltmed==0 & sw_res2_aam!=. & post==1,
col
*resident centered care - below median
    tab prev_antipsych_num improve_res_yn if res_ltmed==1 & sw_res2_ltm!=. & post==0,
col
    tab prev_antipsych_num improve_res_yn if res_ltmed==1 & sw_res2_ltm!=. & post==1,
col

*staff empowerment - at/above median
    tab prev_antipsych_num improve_st_yn if st_ltmed==0 & sw_st2_aam!=. & post==0,
col
    tab prev_antipsych_num improve_st_yn if st_ltmed==0 & sw_st2_aam!=. & post==1,
col

*staff empowerment - below median
    tab prev_antipsych_num improve_st_yn if st_ltmed==1 & sw_st2_ltm!=. & post==0, col
    tab prev_antipsych_num improve_st_yn if st_ltmed==1 & sw_st2_ltm!=. & post==1, col

*physical environment - at/above median
    tab prev_antipsych_num improve_ph_yn if ph_ltmed==0 & sw_ph2_aam!=. & post==0, col
    tab prev_antipsych_num improve_ph_yn if ph_ltmed==0 & sw_ph2_aam!=. & post==1, col

*physical environment - below median
    tab prev_antipsych_num improve_ph_yn if ph_ltmed==1 & sw_ph2_ltmr2!=. & post==0, col
    tab prev_antipsych_num improve_ph_yn if ph_ltmed==1 & sw_ph2_ltmr2!=. & post==1, col

```

```

*Antipsychotics models
    *resident centered care - at/above median
        logit prev_antipsych_num improve_res_yn post DID_res profit totbeds multifac ///
paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if res_ltmed==0 [pw=sw_res2_aam], or cluster (nhid)

    *resident centered care - below median
        logit prev_antipsych_num improve_res_yn post DID_res profit totbeds multifac ///
paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if res_ltmed==1 [pw=sw_res2_ltm], or cluster (nhid)

*staff empowerment - at/above median
    logit prev_antipsych_num improve_st_yn post DID_st profit totbeds multifac ///
paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if st_ltmed==0 [pw=sw_st2_aam], or cluster (nhid)

*staff empowerment - below median
    logit prev_antipsych_num improve_st_yn post DID_st profit totbeds multifac ///
paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if st_ltmed==1 [pw=sw_st2_ltm], or cluster (nhid)

*physical environment - at/above median
    logit prev_antipsych_num improve_ph_yn post DID_ph profit totbeds multifac ///
paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if ph_ltmed==0 [pw=sw_ph2_aam], or cluster (nhid)

*physical environment - below median
    logit prev_antipsych_num improve_ph_yn post DID_ph profit totbeds multifac ///
paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
    if ph_ltmed==1 [pw=sw_ph2_ltmr2], or cluster (nhid )

*fourth models - locomotion worsened

    use "P:\nhcch\jcl\data\person_lev_analytic_file_jan2021.dta", clear

    *locomotion worsened
    tab incd_loc_worse_num time if incd_loc_worse_den==1, miss col

    *step 1 - only keep facilities that have at least 10 longstayers in the
restraint cohort
    drop if incd_loc_worse_den!=1
    *step 2 - keep people with no missing variables
drop if profit>=.
drop if totbeds>=.
drop if multifac>=.
drop if paymcare>=.
drop if paymcaid>=.
drop if hospben>=.
drop if anyunit>=.
drop if terminal>=.
drop if anyhospice_prior180>=.

/*Risk factors from prior MDS assessment

-Help with eating

```

- Full dependence with eating
- Help with toileting
- Full dependence with toileting
- Help with transfers
- Full dependence with transfers
- Help with walking
- Full dependence with walking
- Severe cognitive impairment
- Age
- Gender
- Change in vision
- Change in oxygen use

Raj had created variables

```

prior_eat_need prior_eat_dep prior_toilet_need prior_toilet_dep prior_transfer_n
prior_transfer_dep ///
prior_walk_need prior_walk_dep prior_cog_sev ageanchor_tdt male change_vision
change_oxygen
*/
drop if prior_eat_need>=.
drop if prior_eat_dep>=.
drop if prior_toilet_need>=.
drop if prior_toilet_dep>=.
drop if prior_transfer_n>=.
drop if prior_transfer_dep>=.
drop if prior_waco_in >=.
drop if prior_waco_needsome>=.
drop if prior_waco_needmore>=.
drop if prior_cog_sev>=.
drop if ageatanchor>=.
drop if male>=.
drop if change_vision>=.
drop if change_oxygen>=.

```

*step 3 - only keep facilities that have at least 10 longstayers in the cohort

```

drop lstaypersons minfac fac_lev
sort accpt_id time
by accpt_id time: gen lstaypersons=_N

```

```

by accpt_id: egen minfac=min(lstaypersons)
list accpt_id time lstaypersons minfac time in 1/100
by accpt_id: gen fac_lev=1 if _n==1

```

```

tab minfac if fac_lev==1

```

*need to drop facilities with fewer than 10 longstayers in either year from the analyses

```

drop if minfac<10

```

*step 4 - keep facilities that have an entry at both timepoints

```

by accpt_id time: gen fac_time=1 if _n==1
by accpt_id: egen num_time=total(fac_time)
/*
tab fac_time

```

```

tab num_time
tab time if num_time==1
tab accpt_id if num_time==1
tab accpt_id time if num_time==1, miss
*/

```

```

drop if num_time==1

```

```

    *resident centered care - at/above median
    tab incd_loc_worse_num improve_res_yn if res_ltmed==0 & sw_res2_aam!=. & post==0,
col
    tab incd_loc_worse_num improve_res_yn if res_ltmed==0 & sw_res2_aam!=. & post==1, col

    *resident centered care - below median
    tab incd_loc_worse_num improve_res_yn if res_ltmed==1 & sw_res2_ltm!=. & post==0,
col
    tab incd_loc_worse_num improve_res_yn if res_ltmed==1 & sw_res2_ltm!=. & post==1,
col

    *staff empowerment - at/above median
    tab incd_loc_worse_num improve_st_yn if st_ltmed==0 & sw_st2_aam!=. & post==0, col
    tab incd_loc_worse_num improve_st_yn if st_ltmed==0 & sw_st2_aam!=. & post==1, col

    *staff empowerment - below median
    tab incd_loc_worse_num improve_st_yn if st_ltmed==1 & sw_st2_ltm!=. & post==0, col
    tab incd_loc_worse_num improve_st_yn if st_ltmed==1 & sw_st2_ltm!=. & post==1, col

    *physical environment - at/above median
    tab incd_loc_worse_num improve_ph_yn if ph_ltmed==0 & sw_ph2_aam!=. & post==0, col
    tab incd_loc_worse_num improve_ph_yn if ph_ltmed==0 & sw_ph2_aam!=. & post==1, col

    *physical environment - below median
    tab incd_loc_worse_num improve_ph_yn if ph_ltmed==1 & sw_ph2_ltmr2!=. & post==0, col
    tab incd_loc_worse_num improve_ph_yn if ph_ltmed==1 & sw_ph2_ltmr2!=. & post==1, col

*locomotion worsened models

    *resident centered care - at/above median
    logit incd_loc_worse_num improve_res_yn post DID_res profit totbeds multifac ///
    paymcare paymcaid hospben anyunit ///
    prior_eat_need prior_eat_dep prior_toilet_need prior_toilet_dep prior_transfer_n
prior_transfer_dep ///
    prior_waco_in prior_waco_needsome prior_waco_needmore prior_cog_sev ageatanchor
male change_vision change_oxygen ///
    if res_ltmed==0 [pw=sw_res2_aam], or cluster (nhid)

    *resident centered care - below median
    logit incd_loc_worse_num improve_res_yn post DID_res profit totbeds multifac ///
    paymcare paymcaid hospben anyunit ///
    prior_eat_need prior_eat_dep prior_toilet_need prior_toilet_dep prior_transfer_n
prior_transfer_dep ///
    prior_waco_in prior_waco_needsome prior_waco_needmore prior_cog_sev ageatanchor
male change_vision change_oxygen ///
    if res_ltmed==1 [pw=sw_res2_ltm], or cluster (nhid)

    *staff empowerment - at/above median
    logit incd_loc_worse_num improve_st_yn post DID_st profit totbeds multifac ///
    paymcare paymcaid hospben anyunit ///
    prior_eat_need prior_eat_dep prior_toilet_need prior_toilet_dep prior_transfer_n
prior_transfer_dep ///
    prior_waco_in prior_waco_needsome prior_waco_needmore prior_cog_sev ageatanchor
male change_vision change_oxygen ///
    if st_ltmed==0 [pw=sw_st2_aam], or cluster (nhid)

    *staff empowerment - below median
    logit incd_loc_worse_num improve_st_yn post DID_st profit totbeds multifac ///
    paymcare paymcaid hospben anyunit ///

```

```

        prior_eat_need prior_eat_dep prior_toilet_need prior_toilet_dep prior_transfer_n
prior_transfer_dep ///
        prior_waco_in prior_waco_needsome prior_waco_needmore prior_cog_sev ageatanchor
male change_vision change_oxygen ///
        if st_ltmed==1 [pw=sw_st2_ltm], or cluster (nhid)

*physical environment - at/above median
        logit incd_loc_worse_num improve_ph_yn post DID_ph profit totbeds multifac ///
paymcare paymcaid hospben anyunit ///
        prior_eat_need prior_eat_dep prior_toilet_need prior_toilet_dep prior_transfer_n
prior_transfer_dep ///
        prior_waco_in prior_waco_needsome prior_waco_needmore prior_cog_sev ageatanchor
male change_vision change_oxygen ///
        if ph_ltmed==0 [pw=sw_ph2_aam], or cluster (nhid)

*physical environment - below median
        logit incd_loc_worse_num improve_ph_yn post DID_ph profit totbeds multifac ///
paymcare paymcaid hospben anyunit ///
        prior_eat_need prior_eat_dep prior_toilet_need prior_toilet_dep prior_transfer_n
prior_transfer_dep ///
        prior_waco_in prior_waco_needsome prior_waco_needmore prior_cog_sev ageatanchor
male change_vision change_oxygen ///
        if ph_ltmed==1 [pw=sw_ph2_ltmr2], or cluster (nhid )

*fifth models - ADL loss

        use "P:\nhcch\jcl\data\person_lev_analytic_file_jan2021.dta", clear

        tab incd_adl_loss_num time if incd_adl_loss_den==1, miss col

        *step 1 - only keep facilities that have at least 10 longstayers in the
restraint cohort
        drop if incd_adl_loss_den!=1
        *step 2 - keep people with no missing variables
drop if profit>=.
drop if totbeds>=.
drop if multifac>=.
drop if paymcare>=.
drop if paymcaid>=.
drop if hospben>=.
drop if anyunit>=.
drop if terminal>=.
drop if anyhospice_prior180>=.

        *step 3 - only keep facilities that have at least 10 longstayers in the UTI
cohort
        drop lstaypersons minfac fac_lev
sort accpt_id time
by accpt_id time: gen lstaypersons=_N

by accpt_id: egen minfac=min(lstaypersons)
list accpt_id time lstaypersons minfac time in 1/100
by accpt_id: gen fac_lev=1 if _n==1

tab minfac if fac_lev==1
*need to drop facilities with fewer than 10 longstayers in either year from the analyses

```

```

        drop if minfac<10

        *step 4 - keep facilities that have an entry at both timepoints
        by accpt_id time: gen fac_time=1 if _n==1
        by accpt_id: egen num_time=total(fac_time)
        /*
        tab fac_time
tab num_time
tab time if num_time==1
tab accpt_id if num_time==1
tab accpt_id time if num_time==1, miss
*/
        drop if num_time==1

        *resident centered care - at/above median
tab incd_adl_loss_num improve_res_yn if res_ltmed==0 & sw_res2_aam!=. & post==0, col
tab incd_adl_loss_num improve_res_yn if res_ltmed==0 & sw_res2_aam!=. & post==1, col

        *resident centered care - below median
tab incd_adl_loss_num improve_res_yn if res_ltmed==1 & sw_res2_ltm!=. & post==0, col
tab incd_adl_loss_num improve_res_yn if res_ltmed==1 & sw_res2_ltm!=. & post==1, col

        *staff empowerment - at/above median
tab incd_adl_loss_num improve_st_yn if st_ltmed==0 & sw_st2_aam!=. & post==0, col
tab incd_adl_loss_num improve_st_yn if st_ltmed==0 & sw_st2_aam!=. & post==1, col

        *staff empowerment - below median
tab incd_adl_loss_num improve_st_yn if st_ltmed==1 & sw_st2_ltm!=. & post==0, col
tab incd_adl_loss_num improve_st_yn if st_ltmed==1 & sw_st2_ltm!=. & post==1, col

        *physical environment - at/above median
tab incd_adl_loss_num improve_ph_yn if ph_ltmed==0 & sw_ph2_aam!=. & post==0, col
tab incd_adl_loss_num improve_ph_yn if ph_ltmed==0 & sw_ph2_aam!=. & post==1, col

        *physical environment - below median
tab incd_adl_loss_num improve_ph_yn if ph_ltmed==1 & sw_ph2_ltmr2!=. & post==0, col
tab incd_adl_loss_num improve_ph_yn if ph_ltmed==1 & sw_ph2_ltmr2!=. & post==1, col

        *ADL loss models

        *resident centered care - at/above median
        logit incd_adl_loss_num improve_res_yn post DID_res profit totbeds multifac ///
paymcare paymcaid hospben anyunit ///
        if res_ltmed==0 [pw=sw_res2_aam], or cluster (nhid)

        *resident centered care - below median
        logit incd_adl_loss_num improve_res_yn post DID_res profit totbeds multifac ///
paymcare paymcaid hospben anyunit ///
        if res_ltmed==1 [pw=sw_res2_ltm], or cluster (nhid)

        *staff empowerment - at/above median
        logit incd_adl_loss_num improve_st_yn post DID_st profit totbeds multifac ///
paymcare paymcaid hospben anyunit ///
        if st_ltmed==0 [pw=sw_st2_aam], or cluster (nhid)

        *staff empowerment - below median
        logit incd_adl_loss_num improve_st_yn post DID_st profit totbeds multifac ///
paymcare paymcaid hospben anyunit ///

```

```

if st_ltmed==1 [pw=sw_st2_ltm], or cluster (nhid)

*physical environment - at/above median
    logit   incd_adl_loss_num   improve_ph_yn post DID_ph profit totbeds multifac ///
paymcare paymcaid hospben anyunit ///
if ph_ltmed==0 [pw=sw_ph2_aam], or cluster (nhid)

*physical environment - below median
    logit   incd_adl_loss_num   improve_ph_yn post DID_ph profit totbeds multifac ///
paymcare paymcaid hospben anyunit ///
if ph_ltmed==1 [pw=sw_ph2_ltmr2], or cluster (nhid )

*sixth models - pressure ulcers

    use "P:\nhcch\jcl\data\person_lev_analytic_file_jan2021.dta", clear

    * pressure ulcers
    tab prev_pu_num3 time if incd_adl_loss_den==1, miss col

    *step 1 - only keep facilities that have at least 10 longstayers in the
restraint cohort
    drop if prev_pu_den!=1
    *step 2 - keep people with no missing variables

drop if profit>=.
drop if totbeds>=.
drop if multifac>=.
drop if paymcare>=.
drop if paymcaid>=.
drop if hospben>=.
drop if anyunit>=.
drop if terminal>=.
drop if anyhospice_prior180>=.

    *step 3 - only keep facilities that have at least 10 longstayers in the UTI
cohort
    drop lstaypersons minfac fac_lev
sort accpt_id time
by accpt_id time: gen lstaypersons=_N

by accpt_id: egen minfac=min(lstaypersons)
list accpt_id time lstaypersons minfac time in 1/100
by accpt_id: gen fac_lev=1 if _n==1

tab minfac if fac_lev==1
*need to drop facilities with fewer than 10 longstayers in either year from the analyses

    drop if minfac<10

    *step 4 - keep facilities that have an entry at both timepoints
    by accpt_id time: gen fac_time=1 if _n==1
    by accpt_id: egen num_time=total(fac_time)
    /*
    tab fac_time

tab num_time
tab time if num_time==1
tab accpt_id if num_time==1
tab accpt_id time if num_time==1, miss

```

```

*/
    drop if num_time==1

*resident centered care - at/above median
tab prev_pu_num3 improve_res_yn if res_ltmed==0 & sw_res2_aam!=. & post==0, col
tab prev_pu_num3 improve_res_yn if res_ltmed==0 & sw_res2_aam!=. & post==1, col

*resident centered care - below median
tab prev_pu_num3 improve_res_yn if res_ltmed==1 & sw_res2_ltm!=. & post==0, col
tab prev_pu_num3 improve_res_yn if res_ltmed==1 & sw_res2_ltm!=. & post==1, col

*staff empowerment - at/above median
tab prev_pu_num3 improve_st_yn if st_ltmed==0 & sw_st2_aam!=. & post==0, col
tab prev_pu_num3 improve_st_yn if st_ltmed==0 & sw_st2_aam!=. & post==1, col

*staff empowerment - below median
tab prev_pu_num3 improve_st_yn if st_ltmed==1 & sw_st2_ltm!=. & post==0, col
tab prev_pu_num3 improve_st_yn if st_ltmed==1 & sw_st2_ltm!=. & post==1, col

*physical environment - at/above median
tab prev_pu_num3 improve_ph_yn if ph_ltmed==0 & sw_ph2_aam!=. & post==0, col
tab prev_pu_num3 improve_ph_yn if ph_ltmed==0 & sw_ph2_aam!=. & post==1, col

*physical environment - below median
tab prev_pu_num3 improve_ph_yn if ph_ltmed==1 & sw_ph2_ltmr2!=. & post==0, col
tab prev_pu_num3 improve_ph_yn if ph_ltmed==1 & sw_ph2_ltmr2!=. & post==1, col

*Pressure ulcer models

*resident centered care - at/above median
logit prev_pu_num3 improve_res_yn post DID_res profit totbeds multifac ///
paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
if res_ltmed==0 [pw=sw_res2_aam], or cluster (nhid)

*resident centered care - below median
logit prev_pu_num3 improve_res_yn post DID_res profit totbeds multifac ///
paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
if res_ltmed==1 [pw=sw_res2_ltm], or cluster (nhid)

*staff empowerment - at/above median
logit prev_pu_num3 improve_st_yn post DID_st profit totbeds multifac ///
paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
if st_ltmed==0 [pw=sw_st2_aam], or cluster (nhid)

*staff empowerment - below median
logit prev_pu_num3 improve_st_yn post DID_st profit totbeds multifac ///
paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
if st_ltmed==1 [pw=sw_st2_ltm], or cluster (nhid)

*physical environment - at/above median
logit prev_pu_num3 improve_ph_yn post DID_ph profit totbeds multifac ///
paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
if ph_ltmed==0 [pw=sw_ph2_aam], or cluster (nhid)

*physical environment - below median
logit prev_pu_num3 improve_ph_yn post DID_ph profit totbeds multifac ///
paymcare paymcaid hospben anyunit terminal anyhospice_prior180 ///
if ph_ltmed==1 [pw=sw_ph2_ltmr2], or cluster (nhid )

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2016-2017 Nursing Home Culture Change Survey: Data Dictionary*

*For the 2009/2010 survey, see the <https://www.icpsr.umich.edu/> study ID (ICPSR 37394)

GENERAL NOTES:

- ? [SP] = **Single punch question** - only one response allowed; variable name matches question number.
 - ? [MP] = **Multi punch question** - more than one response allowed; variable created for each response option.
 - a. Naming convention used is '*question number_response option code*' (Example: Q28_1)
 - b. +/- used in SAS formats. 1 = + (selected), 0 = - (not selected).
 - ? **Grid questions (MP Down, SP Across):**
 - a. Variable created for each row in the grid
 - b. Naming convention used is '*question number_letter of the row*' (Example: Q2_a, Q2_b)
 - ? **Numeric box questions**
 - a. Naming convention used is: '*question number_box number*' (Example: Q38_1, Q38_2).
 - ? **Other/specify text fields** - separate variables with '*other*' at the end of the variable name (Example: Q21_6_other).
 - ? **The following data entry codes for the mail version of the survey were used for all questions unless otherwise specified: **CONFUSING ANSWER (77), DON'T KNOW/NOT SURE (98) AND MISSING (99).****
 - ? **Missing answers for the Web version of the survey will appear in the data as '.' – No code is assigned.**
 - ? **Skip logic** – noted before each question (Example: [ASK IF Q4=1 (YES)]) – **questions skipped because of logic in mail survey and web survey will also appear as '.'**
-
-

BACKGROUND VARIABLES:

Strata – sampling strata

Mode_N – survey

mode 0 = Web

1 = Mail

Surveystatus – Status of the survey based on questions answered.

1 = complete

2 = partially complete (*answered Q1 but did not answer Q15, Q19 and Q20*)

Shortsurvey – flag for cases that completed the abbreviated version of the survey over the phone
1 = Short survey

adminweight – Sampling Weight

[ASK ALL] [SP]

Q1. Is your facility part of a Continuing Care Retirement Community?

1 ☐ Yes

2 ☐ No

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK ALL] [GRID; SP ACROSS/MP DOWN]

Q2. Please indicate if your organization has each of the following. Please select "Will implement within 2 years" if plans have been approved or money is obligated.

Does your organization have...	Yes	No	Will implement within 2 years	DON'T KNOW/NOT SURE [MAIL ONLY]	MISSING [MAIL ONLY]	CONFUSING ANSWER [MAIL ONLY]
a. A specific unit where subacute or rehab care is provided	1	2	3	98	99	77
b. Long-term care beds	1	2	3	98	99	77
c. Independent living residences	1	2	3	98	99	77
d. Assisted living residences	1	2	3	98	99	77
e. A dementia care unit for long-stay residents	1	2	3	98	99	77
f. A dementia care unit for assisted living residents	1	2	3	98	99	77
g. Its own palliative care consulting program staffed by nurse and physician palliative care specialists	1	2	3	98	99	77
h. An arrangement with an external provider for non-hospice palliative care consulting	1	2	3	98	99	77

[ASK ALL] [SP]

Q3. What percent of your residents has a private room?

- 1 ☐ 0%
- 2 ☐ 1 to 4%
- 3 ☐ 5 to 25%
- 4 ☐ 26 to 75%
- 5 ☐ 76 to 100%

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK ALL] [SP]

Q4. Do any of your rooms have a bathroom (that is, a toilet and sink) that is shared by 3 or more residents?

- 1 ☐ Yes
- 2 ☐ No

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK IF Q4=1 (YES)] [SP]

Q5. What percent of rooms has a bathroom (that is, a toilet and sink) shared by 3 or more residents?

- 1 ☐ 1 to 4%
- 2 ☐ 5 to 25%
- 3 ☐ 26 to 50%
- 4 ☐ 51 to 75%
- 5 ☐ 76 to 100%

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK IF Q4=1 (YES)] [SP]

Q6. Is your facility working to reduce the number of rooms with bathrooms shared by 3 or more residents?

- 1 ☐ Yes
- 2 ☐ No

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK ALL] [SP]

Q7. Does your facility have long-stay residents (those with stays of more than 100 days)?

1 ☐ Yes

2 ☐ No

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK IF Q7=1 (YES)] [SP]

Q8. What percent of long-stay residents' rooms has monitoring cameras installed by family members?

1 ☐ 0%

2 ☐ 1 to 2%

3 ☐ 3 to 10%

4 ☐ 11 to 25%

5 ☐ 26 to 50%

6 ☐ More than 50%

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK ALL] [SP]

Q9. In order to make a facility less like an institution and more like a home, some facilities have redesigned some sections of their facilities into **Households** of no more than 14 to 20 residents that include kitchens, dining facilities, and common living areas.

Do any of your residents live in **Households** that include kitchen and dining facilities?

1 ☐ Yes

2 ☐ No

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK IF Q9=1 (YES)] [SP]

Q10. What percent of your residents lives in **Households**?

- 1 ☐ 1 to 4%
- 2 ☐ 5 to 25%
- 3 ☐ 26 to 75%
- 4 ☐ 76 to 100%

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK ALL] [SP]

Q11. Some facilities provide care within **Small Homes** of no more than 8 to 10 people (such as Green Houses) that include private bedrooms, kitchens, dining rooms and common living areas. **Small Homes** are often detached from a traditional facility but may also be integrated into a more traditionally-designed facility.

Do any of your residents live in **Small Homes** that include private bedrooms, kitchens, dining rooms, and common living areas?

- 1 ☐ Yes
- 2 ☐ No

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK IF Q11=2 (NO)] [SP]

Q12. We are interested in knowing if your facility is planning to open **Small Homes**. By planning to open, we mean the plans are approved or money is obligated and implementation is expected within 2 years. Are you planning to open **Small Homes**?

- 1 ☐ Yes
- 2 ☐ No

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK IF Q11=1 (YES)] [SP]

Q13. What percent of your residents lives in **Small Homes** that include private bedrooms, kitchens, dining rooms, and common living areas?

- 1 ☐ 1 to 4%
 2 ☐ 5 to 25%
 3 ☐ 26 to 75%
 4 ☐ 76 to 100%

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK ALL] [GRID; SP ACROSS/MP DOWN]

Q14. Please indicate if each of the following statements applies to your facility.

	Yes	No	We are working on this	DON'T KNOW/NOT SURE [MAIL ONLY]	MISSING [MAIL ONLY]	CONFUSING ANSWER [MAIL ONLY]
a. The lighting, furniture, and overall environment in residents' living areas are similar to what we would use in our own homes	1	2	3	98	99	77
b. We have indoor and/or outdoor play areas for children	1	2	3	98	99	77
c. Residents who are mobile (with or without assistive devices) can come and go freely in our facility's outdoor spaces	1	2	3	98	99	77
d. We have eliminated nursing stations	1	2	3	98	99	77
e. We have kitchen areas that are accessible to residents and families 24/7	1	2	3	98	99	77
f. We use open dining where a meal is available for <u>at least a two hour period</u> during which residents can choose when to eat	1	2	3	98	99	77
g. All residents can keep their doors closed or open, as they prefer	1	2	3	98	99	77
h. We provide or coordinate free transportation for individual residents to go out for non-medical reasons, such as to local stores of their choice or social visits to friends or family	1	2	3	98	99	77

i. We display residents' personal items, such as family photos, in common living areas outside of their rooms	1	2	3	98	99	77
j. We have a communication system in place that we use as an alternative to overhead paging	1	2	3	98	99	77
k. Noise at night is reduced	1	2	3	98	99	77

[ASK ALL] [GRID; SP ACROSS/MP DOWN]

Q15. For this question, **staff** refers to all non-management employees of the facility in all departments.
Please indicate how often your staff does each of the following.

In your facility, how often...	Never	Sometimes	Often	Always	Not Applicable	DON'T KNOW/NOT SURE [MAIL ONLY]	MISSING [MAIL ONLY]	CONFUSING ANSWER [MAIL ONLY]
a. Does staff work together to cover shifts when someone can't come to work?	1	2	3	4	5	98	99	77
b. Is staff cross-trained to perform tasks outside of their assigned job duties, such as housekeeping staff trained to provide feeding assistance or nursing assistants trained to provide activities?	1	2	3	4	5	98	99	77
c. Is staff, other than activity and management staff, involved in planning social events?	1	2	3	4	5	98	99	77
d. In the past 12 months, have nurses been scheduled to work who are employed by an agency rather than employed by your facility?	1	2	3	4	5	98	99	77
e. Do staff teams create their own work schedules for their units (that is, schedule days and hours to work)?	1	2	3	4	5	98	99	77
f. Are new staff and residents formally introduced to each other?	1	2	3	4	5	98	99	77

[ASK ALL] [SP]

Q16. The next questions are specifically about nursing assistants. **Nursing Assistants** refer to those direct-care workers who provide hands-on personal care. For these questions, please consider Shahbazim as nursing assistants.

Does your facility have nursing assistants?

1 ☐ Yes

2 ☐ No

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK IF Q16=1 (YES)] [GRID; SP ACROSS/MP DOWN]

Q17. Please indicate how often nursing assistants at your facility do each of the following.

In your facility, how often...	Never	Sometimes	Often	Always	Not Applicable	DON'T KNOW/NOT SURE [MAIL ONLY]	MISSING [MAIL ONLY]	CONFUSING ANSWER [MAIL ONLY]
a. Do nursing assistants take part in quality improvement teams?	1	2	3	4	5	98	99	77
b. Do nursing assistants attend resident care plan meetings?	1	2	3	4	5	98	99	77
c. Do nursing assistants know when a resident's care plan has changed?	1	2	3	4	5	98	99	77
d. Are changes in residents' care made as a result of nursing assistants' input?	1	2	3	4	5	98	99	77
e. Does your facility permit nursing assistants to choose which residents they care for?	1	2	3	4	5	98	99	77

f. Do nursing assistants work with the same residents?	1	2	3	4	5	98	99	77
g. Do nursing assistants alter their work priorities to meet residents' needs?	1	2	3	4	5	98	99	77
h. Do nursing assistants communicate with family members to convey or obtain information about residents?	1	2	3	4	5	98	99	77
i. Does your facility give bonuses, raises, or other rewards to nursing assistants who receive extra training or education?	1	2	3	4	5	98	99	77

[ASK IF Q16=1 (YES)] [GRID; SP ACROSS/MP DOWN]

Q18. Please indicate how often each of the following takes place at your facility.

In your facility, how often...	Rarely	Sometimes	Often	Almost Always	Not Applicable	DON'T KNOW/NOT SURE [MAIL ONLY]	MISSING [MAIL ONLY]	CONFUSING ANSWER [MAIL ONLY]
a. Do nursing assistants participate in formal processes that allow them to contribute ideas on improving resident care?	1	2	3	4	5	98	99	77
b. Do nursing assistants participate in conducting in-service education of facility staff?	1	2	3	4	5	98	99	77
c. Are new nursing assistants assigned to a peer mentor?	1	2	3	4	5	98	99	77
d. Do nursing assistants participate in hiring decisions of new staff?	1	2	3	4	5	98	99	77
e. Do supervisors "pitch in" to assist nursing assistants when they get busy?	1	2	3	4	5	98	99	77

[ASK ALL] [SP]

Q19. Please indicate which one of the following statements best describes what you believe was your facility's practice **during the first half of 2010**. If you are not sure, please provide your best estimate.
(Please select one answer)

- 1 ☐ There was no discussion around culture change
- 2 ☐ Culture change was under discussion, but we hadn't changed the way we took care of residents
- 3 ☐ Culture change had partially changed the way we cared for residents in some or all areas of the organization
- 4 ☐ Culture change had completely changed the way we took care of residents in some areas of the organization
- 5 ☐ Culture change had completely changed the way we took care of residents in all areas of the organization
- 6 ☐ Other (please explain: _____ Q19_6_other _____)

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK ALL] [GRID; SP ACROSS/MP DOWN]

Q20. For each of the following statements, please indicate what you believe was your facility's practice **during the first half of 2010**. If you are not sure, please provide your best estimate.

During the first half of 2010, was it the practice in your facility that...	Yes	No	We were working on this	DON'T KNOW/NOT SURE [MAIL ONLY]	MISSING [MAIL ONLY]	CONFUSING ANSWER [MAIL ONLY]
a. Residents chose the times they preferred to eat?	1	2	3	98	99	77
b. Residents chose when they wanted to get up in the morning?	1	2	3	98	99	77
c. Residents participated in choosing the types of activities that were offered to them?	1	2	3	98	99	77
d. Residents participated in deciding which nursing assistants were assigned to care for them?	1	2	3	98	99	77

[ASK ALL] [SP]

Q21. Please indicate your nursing home's involvement in culture change or resident-centered care **now**.
(Please select one answer)

- 1 ☐ There is no discussion around culture change
- 2 ☐ Culture change is under discussion, but we haven't changed the way we take care of residents
- 3 ☐ Culture change has partially changed the way we care for residents in some or all areas of the organization
- 4 ☐ Culture change has completely changed the way we take care of residents in some areas of the organization
- 5 ☐ Culture change has completely changed the way we take care of residents in all areas of the organization
- 6 ☐ Other (please explain:
_____Q21_6_other_____)

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK IF Q21=3-6] [GRID; SP ACROSS/MP DOWN]

Q22. Please indicate if you believe that culture change has changed the way that you take care of the following types of residents.

Has culture change changed the way you take care of residents...	Yes	No	We are working on this	Not Applicable	DON'T KNOW/NOT SURE [MAIL ONLY]	MISSING [MAIL ONLY]	CONFUSING ANSWER [MAIL ONLY]
a. Who receive subacute or rehabilitation care?	1	2	3	4	98	99	77
b. With Alzheimer's Disease or dementia?	1	2	3	4	98	99	77

[ASK ALL] [GRID; SP ACROSS/MP DOWN]

Q23. For each of the following statements, please indicate if this is your facility's practice **now**.

At the present time, is it the practice in your facility that...	Yes	No	We are working on this	DON'T KNOW/NOT SURE [MAIL ONLY]	MISSING [MAIL ONLY]	CONFUSING ANSWER [MAIL ONLY]
a. Residents choose the times they prefer to eat?	1	2	3	98	99	77
b. Residents choose when they want to get up in the morning?	1	2	3	98	99	77
c. Residents choose the time of day they want to bathe?	1	2	3	98	99	77
d. Residents choose the way they bathe, such as shower, bed bath, or bathtub?	1	2	3	98	99	77
e. Residents participate in choosing the types of activities that are offered to them?	1	2	3	98	99	77
f. Residents participate in deciding which nursing assistants are assigned to care for them?	1	2	3	98	99	77
g. Residents participate in developing their care plan?	1	2	3	98	99	77
h. Residents participate in the hiring of new nursing assistants?	1	2	3	98	99	77
i. Residents with memory problems have special activities designed for them?	1	2	3	98	99	77
j. Residents or their family members are provided with opportunities to express their preferences about end-of-life care?	1	2	3	98	99	77

[ASK ALL] [GRID; SP ACROSS/MP DOWN]

Q24. For these questions, **Family** refers to persons of importance to residents, such as friends, spouses, partners, children or other family members. Please indicate how often your facility does each of the following.

How often does your facility...	Rarely	Sometimes	Often	Almost Always	DON'T KNOW/NOT SURE [MAIL ONLY]	MISSING [MAIL ONLY]	CONFUSING ANSWER [MAIL ONLY]
a. Schedule care plan conferences when family members can attend them, including evenings?	1	2	3	4	98	99	77
b. Allow family members to visit loved ones anytime (i.e., 24/7)?	1	2	3	4	98	99	77
c. Inform family members about changes the facility is making to improve its quality?	1	2	3	4	98	99	77
d. Ask family members for input when the facility is considering changing facility-wide care practices?	1	2	3	4	98	99	77
e. Formally introduce family members to the nursing assistants taking care of their loved ones?	1	2	3	4	98	99	77
f. Notify family members when there is a change in the nursing assistants who care for their loved ones?	1	2	3	4	98	99	77

[ASK ALL] [GRID; SP ACROSS/MP DOWN]

Q25. For these questions, **Community Members** refer to individuals not employed or contracted by your facility. Examples include neighboring businesses and individuals, a business person or lawyer, a researcher, an educator or a healthcare provider in the community. Please indicate how often your facility does each of the following.

How often does your facility...	Rarely	Sometimes	Often	Almost Always	DON'T KNOW/NOT SURE [MAIL ONLY]	MISSING [MAIL ONLY]	CONFUSING ANSWER [MAIL ONLY]
a. Have community members participate in facility activities such as movies, parties, or exercise programs?	1	2	3	4	98	99	77
b. Include community members on facility committees other than the Board of Directors?	1	2	3	4	98	99	77
c. Have community members lead resident activities such as discussion groups or lectures?	1	2	3	4	98	99	77
d. Ask for community members' input when the facility is considering new initiatives?	1	2	3	4	98	99	77

[ASK ALL] [GRID; SP ACROSS/MP DOWN]

[DON'T KNOW/NOT SURE (98) NOT USED FOR DATA ENTRY SINCE ALREADY CAPTURED IN RESPONSE SET]

Q26. Please indicate how often your facility might engage in the following activities when a resident is dying or has died.

How often does your facility...	Rarely	Sometimes	Often	Almost Always	Don't Know	MISSING [MAIL ONLY]	CONFUSING ANSWER [MAIL ONLY]
a. Discuss a resident's spiritual needs at care planning conferences when the resident has an acute or chronic terminal illness?	1	2	3	4	5	99	77
b. Document in the care plan of a terminally ill resident what is important to the individual at the end of life, such as the presence of family or religious or cultural practices?	1	2	3	4	5	99	77
c. Have a room available to provide special accommodations, such as a private room or a bed for a loved one, when a resident is actively dying?	1	2	3	4	5	99	77
d. Honor in some public way (either at the facility or in the community) a resident who has died?	1	2	3	4	5	99	77
e. Honor the resident's body in some manner upon its removal from the facility?	1	2	3	4	5	99	77
f. Send a sympathy card to family members or significant others after a resident has died?	1	2	3	4	5	99	77
g. Follow up with roommate(s) or friend(s) in the facility to provide emotional support after a resident has died?	1	2	3	4	5	99	77

[ASK ALL] [GRID; SP ACROSS/MP DOWN]

Q27. Please indicate how often each of the following takes place at your facility.

In your facility, how often...	Rarely	Sometimes	Often	Almost Always	Not Applicable	DON'T KNOW/NOT SURE [MAIL ONLY]	MISSING [MAIL ONLY]	CONFUSING ANSWER [MAIL ONLY]
a. Are facility-wide management decisions made by <u>leaders</u> exclusively?	1	2	3	4	5	98	99	77
b. Are scheduling changes made so <u>staff</u> can attend professional development or advancement activities?	1	2	3	4	5	98	99	77
c. Do <u>leaders</u> tell <u>staff</u> why their suggestions were not implemented?	1	2	3	4	5	98	99	77
d. Do <u>staff</u> receive annual training in person-centered care or culture change?	1	2	3	4	5	98	99	77
e. Do <u>staff</u> substitute for <u>leaders</u> in representing the facility to the external community, such as at meetings, presentations, and promotional activities?	1	2	3	4	5	98	99	77

[ASK ALL] [MP]

Q28. This question is about your **Nursing Staff**, including Registered Nurses (RNs), Licensed Practical Nurses (LPNs), and Nursing Assistants. Which direct care nursing staff at your facility are unionized? *(Please check all that apply)*

- 1 ☐ Registered Nurses (RNs)
- 2 ☐ Licensed Practical Nurses (LPNs)
- 3 ☐ Nursing Assistants
- 4 ☐ No direct care nursing staff are unionized [SP - exclusive]

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK ALL] [SP]

Q29. Please think about the **Nursing Assistants** who were employed at any time during the past 12 months. About what percent of these nursing assistants left your employment in the last 12 months?

- 1 ☐ 0 to 20%
- 2 ☐ 21 to 40%
- 3 ☐ 41 to 60%
- 4 ☐ 61 to 90%
- 5 ☐ 91 to 100%
- 6 ☐ *Not applicable, facility does not have Nursing Assistants*
- 98 DON'T KNOW/NOT SURE [MAIL ONLY]
- 99 MISSING [MAIL ONLY]
- 77 CONFUSING ANSWER [MAIL ONLY]

[ASK IF Q29=1-5] [SP]

Q30. About what percent of the **Nursing Assistants** who are employed at your facility today has worked at the facility for at least 12 months?

- 1 ☐ 0 to 50%
- 2 ☐ 51 to 75%
- 3 ☐ 76 to 90%
- 4 ☐ 91 to 100%
- 98 DON'T KNOW/NOT SURE [MAIL ONLY]
- 99 MISSING [MAIL ONLY]
- 77 CONFUSING ANSWER [MAIL ONLY]

[ASK ALL] [SP]

Q31. Please think about the **LPNs** who were employed at any time during the past 12 months. About what percent of these LPNs left your employment in the last 12 months?

- 1 ☐ 0 to 20%
- 2 ☐ 21 to 40%
- 3 ☐ 41 to 60%
- 4 ☐ 61 to 90%
- 5 ☐ 91 to 100%
- 6 ☐ *Not applicable, facility does not have LPNs*
- 98 DON'T KNOW/NOT SURE [MAIL ONLY]
- 99 MISSING [MAIL ONLY]
- 77 CONFUSING ANSWER [MAIL ONLY]

[ASK IF Q31=1-5] [SP]

Q32. About what percent of the **LPNs** who are employed at your facility today has worked at the facility for at least 12 months?

- 1 ☐ 0 to 50%
- 2 ☐ 51 to 75%
- 3 ☐ 76 to 90%
- 4 ☐ 91 to 100%

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK ALL] [SP]

Q33. Please think about the **RNs** who were employed at any time during the past 12 months. About what percent of these RNs left your employment in the last 12 months?

- 1 ☐ 0 to 10%
- 2 ☐ 11 to 24%
- 3 ☐ 25 to 40%
- 4 ☐ 41 to 100%
- 5 ☐ *Not applicable, facility does not have RNs*

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK IF Q33=1-4] [SP]

Q34. About what percent of the **RNs** who are employed at your facility today has worked at the facility for at least 12 months?

- 1 ☐ 0 to 50%
- 2 ☐ 51 to 75%
- 3 ☐ 76 to 90%
- 4 ☐ 91 to 100%

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK ALL] [NUMERIC BOX]

Q35. In the past 2 years, how many different Administrators have there been in your facility, **including** yourself?
If you have been the only Administrator in the past 2 years, please answer '1'.

Q35_1 _____Administrators

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK ALL] [NUMERIC BOX]

Q36. In the past 2 years, how many different Directors of Nursing have there been in your facility? *If there has only been one Director of Nursing in the past two years, please answer '1'.*

Q36_1 _____Directors of Nursing

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK ALL] [SP]

Q37. How long have you been a nursing home Administrator?

1 ☐ 5 years or less

2 ☐ 6 to 10 years

3 ☐ 11 to 15 years

4 ☐ 16 to 25 years

5 ☐ More than 25 years

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]

[ASK ALL] [NUMERIC BOX]

Q38. How long have you been the Administrator at this facility?

Q38_1 _____Years Q38_2 _____Months

98 DON'T KNOW/NOT SURE [MAIL ONLY]

99 MISSING [MAIL ONLY]

77 CONFUSING ANSWER [MAIL ONLY]