

Analysis of FY2013 Policy Change on Disability Management under the Federal Employees Compensation Program

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PREPARED BY:

Oswaldo Urdapilleta, PhD
Jasmine McAllister
Michael Easterly, PhD
Steven Fink, M.A.
Nick Perttunen
Balint Peto

Summit Consulting, LLC
601 New Jersey Ave. NW
Suite 400
Washington, DC 20001





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EXECUTIVE SUMMARY

On October 1, 2012, the Division of Federal Employees' Compensation (DFEC), which operates within the U.S. Department of Labor (DOL) Office of Workers' Compensation Programs (OWCP), introduced two new requirements (hereinafter referred to as "the policy change") into disability management¹ under Federal Employees' Compensation Program. The DOL's Chief Evaluation Office (CEO) contracted with Summit Consulting, LLC (Summit) to perform a descriptive analysis to understand the policy change and its potential implications on disability management.

Of all disability claims, the two new requirements applied to all cases in disability management.² The first requirement was that a field nurse be promptly assigned within 28 days of the start of a worker's participation in disability management. The other change was that a second opinion evaluation was required by the 12-month participation mark in total disability cases. The outcome of interest, a successful resolution, was defined as a return to work,³ termination of benefits, or reduction in loss of wage-earning capacity.⁴ The study also examined other features relevant to successful resolution: the time to first successful resolution and disability management case duration.

The study used DFEC's administrative data on all disability cases that received disability management services between January 2006 and June 2017 (116,024 injured workers). This timeframe captured both the complete disability periods for recent disability cases and claimants with extended disability periods. For study purposes, the report highlights two time periods: the pre-policy change period (January 2006–September 2012) and the post-policy change period (October 2012–June 2017).

Because the study is descriptive in nature, the results cannot be interpreted as having a causal relationship with the policy changes or with successful resolutions and are therefore reported as associations.⁵ Nevertheless, given the large number of cases and the long study period, the analyses

REPORT HIGHLIGHTS

- Successful resolution rates were stable over 11.5 years (from 2006-2017). The average successful resolution rate was 89.3%. This included a decrease from 90.0% before the policy change to 88.3% after the policy change.
- Cases that received a field nurse assignment within 28 days had a higher successful resolution than cases that did not, though the difference was less pronounced after the policy change.
- There was a 33.3 percentage point increase in eligible cases that had a second opinion evaluation within the 12-month mark after the policy change, from 37.3% to 70.6%.
- Successful resolution rates were relatively stable for the 10 most prevalent sequences of disability management interventions over the study timeframe.

¹ The disability management process is described in detail in OWCP's Division of Federal Employees' Compensation's FECA Procedure Manual: <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FECA-PT2/group3.htm#206001>.

² As defined in the DFEC Procedure Manual (see Footnote 1).

³ The report, *Return-to-Work Outcomes for Federal Employees in the Office of Workers' Compensation Disability Management Program*, submitted September 2018, used return to work as the outcome variable (<https://www.dol.gov/sites/dolgov/files/OASP/legacy/files/OWCP-External-Report-DOL.pdf>).

⁴ The study team analyzed only the first instance of the successful resolution outcome; there may have been more than one successful resolution outcomes per beneficiary.

⁵ All tests showed statistically significant differences between the results being compared. For readability, we have reported confidence levels either in parentheses or in the notes to the relevant graph.



performed point out trends in the data and further elucidate patterns of outcomes and fidelity of implementation among cases that received disability management services.

The report provides information on changes in the rate of successful resolutions and changes in the rate of adherence that occurred after the policy change compared to the successful resolution and adherence rates before the policy change. The study also analyzed the sequence of interventions, beginning with entry into disability management, and the intervention patterns following a field nurse assignment and a second opinion evaluation.

The research questions and the findings of the study are as follows:

How prevalent was a successful resolution over time? Did the rate of successful resolution increase after the policy change?

- Successful resolution rates were stable over the entire study timeframe for which data were available. The mean successful resolution rate for this period was 89.3%. The rate decreased from 90.0% before the policy change to 88.3% after the policy change.
- The median time to first successful resolution increased over time, from 3.1 months before the policy change to 3.4 months after the policy change. The median disability management case duration also lengthened, from 7.0 months before the policy change to 7.4 months after the policy change.

How prevalent are field nurse assignment and a second opinion evaluation in the disability management cases? How does the timing of these disability management interventions compare before and after the policy change?

Field nurse assignment

- Using available data from the post-policy change period and cases that received a field nurse assignment at some point in time, the findings show that DFEC implemented the field nurse assignment requirement with high fidelity. The rate of field nurse assignment within 28 days was 91.0%.
- There was a 5 percentage-point increase in the proportion of all cases in disability management that received a field nurse assignment, from 72.6% before the policy change to 77.6% after the policy change⁶.
- Cases that received a field nurse assignment within the targeted timeframe had a higher successful resolution rate compared to cases that did not (92.1% vs 86.0%), though the difference was less pronounced after the policy change (88.7% vs. 87.3%).
- The policy change may have indirectly lowered the successful resolution rate of field nurse assignment by assigning a field nurse to cases that were unlikely to benefit from the intervention.

⁶ Due to data limitations pre-policy change, the estimates use the disability management start date as an alternate measure for the entire population and the pre- and post-policy change timeframe.



Second opinion evaluation

- The proportion of cases that had a second opinion evaluation in 2011, before the policy change, was 37.3% of all eligible cases. After the policy change was implemented in 2012, the proportion of second opinion evaluations within the 12-month participation mark increased to 70.6%, a 33.3 percentage point increase.
- Cases that received a second opinion evaluation within the 12-month mark show a higher successful resolution rate before the policy change (61.9%) than after the policy change (51.0%). Compliance with the 12-month policy was associated with higher successful resolution rates within the same timeframes. (Successful resolution rates for those without a second opinion were 60.9% before the policy change and 43.9% after.)
- Cases that did not receive a second opinion evaluation within the 12-month participation mark had longer case lengths (37.1 months for those with a second opinion evaluation and 59.1 months without) and longer times to first successful resolution (21.7 months with second opinion evaluation, 26.6 months without) than those that met the 12-month requirement.

What intervention patterns were most associated with successful resolutions, and at what frequency were specific interventions implemented?

- The study identified 15,127 unique intervention patterns for the study population. Of these intervention patterns, 9,265 unique sequences had a successful resolution (61.2 % of all sequences).
- The 10 most prevalent intervention patterns⁷ represent 75,605 cases, or 65.2% of the 116,024 cases in the study.
- Three intervention patterns— (1) Field nurse assignment followed by successful resolution, (2) no disability management interventions, and (3) surgery followed by a field nurse assignment and successful resolution—accounted for over half (52.8%) of all intervention patterns. There were very few differences in the distribution of the 10 most prevalent intervention patterns before and after the policy change.
- Successful resolution rates were relatively stable for the 10 most prevalent sequences over the study timeframe (98.0% before policy change, 98.4% after). These sequences were also associated with the highest successful resolution rates (98.1% successful resolution rate as opposed to an overall 89.3% rate).

Field nurse assignment: The 10 most prevalent sequences following a field nurse assignment represent 61,245 cases out of the total of 84,795 cases following a field nurse assignment. The most common sequence of care following a field nurse assignment was field nurse assignment as the sole intervention leading to successful resolution.

Second opinion evaluation: Of the 21,308 eligible cases received a second opinion evaluation, the most prevalent sequence was a second opinion evaluation as the sole intervention and without a successful resolution (15.2% of 21,308 cases).

⁷ An intervention pattern is defined as a series of disability management interventions regardless of whether there is a successful resolution in the pattern.



Conclusions

DFEC implemented the field nurse assignment and the second opinion evaluation requirements with high fidelity, as measured by better adherence. However, the rate of successful resolution for cases in disability management declined from 90.0% before the policy change to 88.3% after the change. The decline in successful resolution rates after the policy change is also reflected in the analysis of field nurse assignment and second opinion evaluations.

The findings discussed above do not account for potential changes in case mix (demographics, type of injury), timing of the interventions, quality in disability management interventions, or variations across DFEC regions. It is important to acknowledge that a subset of cases in disability management may not benefit at all from either field nurse assignment or second opinion interventions. However, as these cases now (due to higher adherence) enter the denominator of the successful resolution rates, these (unlikely to be successful cases) reduce the successful resolution rates compared to the pre-policy period.⁸

There are several statistical analyses that could be implemented to refine the research on the best intervention pathways and perhaps offer suggestions for targeted interventions for subpopulations to further increase overall successful resolution rates.

⁸ This concept is illustrated in [Figure 36](#) in Section 7.1.



INTRODUCTION

The Federal Employees’ Compensation Act (FECA), which was enacted in 1916, ensures that civilian federal workers receive pay when they cannot work because of work-related injuries. The Division of Federal Employees’ Compensation (DFEC) within the U.S. Department of Labor (DOL) Office of Workers’ Compensation Programs (OWCP) oversees these federal worker disability cases according to FECA.

On October 1, 2012 (Fiscal Year (FY) 2013), DFEC mandated a second opinion evaluation by the one-year mark in total disability cases and required prompt field nurse assignment as defined in Chapter 2-0811, “Nurse Case Management,” of the DFEC Procedure Manual. Hereafter, these mandates are referred to as “the policy change.” These changes took effect when OWCP implemented changes to its Operational Plan.

DOL’s Chief Evaluation Office (CEO) contracted with Summit Consulting, LLC (Summit) to identify the association, if any, between the disability management policy change and case outcomes. The study was based on administrative data (data collected for recordkeeping) and examined changes over time in the successful resolution of cases, adherence to the prompt field nurse assignment and second opinion evaluation mandates, and intervention patterns, particularly following the FY 2013 policy change. The analysis also required the study team to define the timing of the policy change and what qualifies as a successful resolution.

The study used data on cases of injured workers who received disability management services between January 2006 and June 2017. This 11.5-year timeframe captures both complete disability periods for recent disability cases and cases with extended periods of disability. The study divided the population into cases that were assigned to disability management before the policy change and those that entered disability management after October 1, 2012.⁹ Thus, the report highlights two time periods in the analyses: the pre-policy change period and the post-policy change period.

Comparison Over Two Time Periods
Pre-policy change: January 2006–September 2012
Post-policy change: October 2012–June 2017

This report explains the descriptive statistics used to address the research questions posed by CEO and OWCP and summarizes the findings of the analyses. Because this study is descriptive in nature, the study results should NOT be interpreted as having a causal relationship with the policy change, and particularly with the rate of successful resolutions.

The report provides information on changes in the rate of successful resolutions and changes in adherence rates associated with the policy change. In addition, the study analyzed the sequence of interventions beginning with entry into disability management and the intervention patterns following (regardless of timing) a field nurse assignment and a second opinion evaluation. In addressing the research questions, which are discussed in the next section, the study team conducted sensitivity tests on the analyses. For example, we assessed if there were differences due to a policy implementation lag or changes after removing data from an outlier year. Point estimates between the policy change and successful resolutions are reported as associations and do not represent a causal relationship or impact. We also discuss the results of statistical tests that were conducted.

⁹ There are other subpopulations that are relevant to the scope of this project. For example, we could separate cases that were opened before the policy change but closed after the policy change, to test the potential effect of the second opinion evaluation (Code MSI) by the one-year mark, and the populations of Traumatic Injury and Occupational Illness cases.



1 DISABILITY MANAGEMENT BACKGROUND AND RESEARCH QUESTIONS

1.1 DISABILITY MANAGEMENT BACKGROUND

What is the Federal Employees' Compensation Act (FECA) and who administers it?

The Federal Employees' Compensation Act (FECA) establishes workers' compensation coverage to civilian federal employees. FECA covers work-related traumatic injuries, occupational illnesses that develop over time, and existing conditions that are accelerated or aggravated by the duties of employment. The statute applies to all civilian federal workers except those paid from non-appropriated funds, regardless of the type of position held or the length of tenure. It also covers civilian workers in U.S. defense agencies and some volunteers, such as Peace Corps and FEMA emergency response volunteers, but not those serving in the military segment of the defense workforce or civilian defense employees working internationally.

Under FECA, OWCP finances and manages medical treatment, vocational rehabilitation, wage replacement benefits, and other benefits for civilian federal workers who experience work-related injuries or occupational illness.¹⁰ DFEC administers disability management through 12 district offices and its headquarters in Washington, DC. OWCP pays the costs of compensation and medical care for cases in disability management and then charges the workers' employing agencies for these costs at the end of each fiscal year.¹¹

What is the FECA disability management process?

An injured worker (claimant) files a claim with the employing agency (e.g., the U.S. Postal Service), which then forwards the claim to DFEC. Upon receiving the claim, DFEC assigns a claims examiner to manage the claim. The first action of the claims examiner is adjudication.¹² During adjudication, the claims examiner reviews the medical evidence and supporting statements from the worker and/or the employing agency to determine if the claim is eligible for FECA benefits. If the examiner determines that the claim is eligible, OWCP accepts the claim, and the worker is eligible for compensation or medical care related to the claim. In some cases, the worker only needs medical benefits and may be able to continue working; this is particularly relevant in traumatic injury cases. In other cases, the worker may

Terms

Field nurse assignment—A field nurse works with the claimant and a physician to ensure the worker receives proper medical care. Disability management code NFN.

Return to work—A return to work in any capacity, including part-time or light duty work.

Second opinion examination—A claims examiner requests a second opinion from a physician to assess the worker's condition, the extent of disability, work capacity, or other issues. The first occurrence of disability management code MSI or MSR.

Successful resolution— Either a return to work, termination of benefits, or reduction in amount of compensation paid to offset loss of wage-earning capacity (LWEC).

¹⁰ "Division of Federal Employees' Compensation (DFEC)," U.S. Department of Labor, Office of Workers' Compensation Programs (OWCP). www.dol.gov/owcp/dfec/about.htm

¹¹ Agencies are responsible for "continuation of pay" during the first 45 workdays of traumatic injury claims.

¹² Details about claim processing can be found in OWCP, Division of Federal Employees' Compensation, *FECA Procedure Manual*, Part 5. <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FECA-PT5/>



be unable to return to work despite medical treatment.

Workers whose treating doctors indicate they are unable to return to work enter disability management, which provides active assistance to workers to promote their recovery. The goal of disability management is to “ensure medical recovery and a sustainable return to work.”¹³ The employing agency is encouraged to offer accommodations to the worker during the recovery process, such as light duty or part-time work, if feasible. In instances where reemployment at the employing agency is not feasible, DFEC helps the worker find employment in other agencies or in the private sector. Disability management consists of the following key activities:

- In the initial stage, a field nurse is assigned by the CE to work with the injured worker and physician to ensure that the worker receives proper medical care. The field nurse also coordinates with the employing agency to secure any necessary accommodations at the worker’s original employment location to help the worker return to work in some capacity. This initial phase lasts for four months, but DFEC can extend field nurse services, as necessary.
- The claims examiner may take additional actions, such as requesting that a rehabilitation counselor assist with vocational rehabilitation services, including a reemployment plan, or sending letters notifying an uncooperative claimant about the ending of benefits. These actions may occur at any time in disability management.

Some workers’ physicians continue to document ongoing work disability long after a work injury or illness, but DFEC does not provide support services indefinitely. Workers who remain in disability management longer than 30 months transition to a stage called Periodic Roll Management. Here, DFEC periodically monitors the claimants’ medical and disability status.

1.2 STUDY QUESTIONS

The policy change introduced in FY 2013 is time-defined, which offers an opportunity to study how the pre-policy change and post-policy change populations differ, and how consistently the policy change was implemented. In particular, the study team focused on changes in the rates of successful resolution as defined by the disability management codes (see Appendix C). This measure incorporates all successful disability management outcomes and reflects the first instance of a successful outcome in a disability management case.

The study addressed the following questions for the entire population and separately for the pre-policy change and post-policy change groups:

1. How prevalent is a successful resolution? The research team addressed the rates of successful resolution defined as a return to work,¹⁴ termination of benefits, or reduction in loss of wage-earning capacity (LWEC). In addition, the analyses focused on other features of successful resolution: time to first successful resolution and case length.
2. How prevalent are the field nurse assignment and second opinion codes? How does the timing of second opinions and field nurse assignment compare before and after the policy change? The team

¹³ OWCP, Division of Federal Employees’ Compensation, FECA Procedure Manual, Chapter 2–0600, Section 2, “Introduction.” <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FECA-PT2/group3.htm#206001>.

¹⁴ Summit’s report, *Return-to-Work Outcomes for Federal Employees in the Office of Workers’ Compensation Disability Management Program*, submitted September 2018, used return to work as the outcome variable (<https://www.dol.gov/sites/dolgov/files/OASP/legacy/files/OWCP-External-Report-DOL.pdf>).



conducted analyses of successful resolution rates for the field nurse assignment and the second opinion evaluation. This question informs how consistently the policy change was implemented.

3. What were the most prevalent intervention patterns that were associated with successful resolutions, and at what frequency were specific interventions implemented? The intervention pattern analysis included additional sub-questions:
 - What was the global effect of the policy change? What was the effect on cases with high rates of adherence to the policy as prescribed?
 - Beginning with the field nurse assignment or the second opinion evaluation, what were the most prevalent sequences of events (unique intervention patterns) in the entire population? Which sequences were most associated with successful resolutions? Were some sequences of events after the second opinion evaluation or the field nurse assignment more successful for the pre-policy change group or the post-policy change group?
4. Which intervention patterns are associated with high adherence to the field nurse assignment and the second opinion evaluation policies?

The study team conducted various analyses to answer these questions. The findings are presented by research question in Sections 2 through 5.

1.3 POPULATION AND VARIABLES

Data and Data Cleaning

This study used data in the administrative system that tracks all interventions and activities applied to injured workers as they proceed through disability management. Specifically, the data came from two sources—the case management system, which tracks every federal disability claim, and the disability management system, which tracks interventions and activities of cases that received disability management services.

The data in the two databases were merged and run through several filters. The study team excluded cases that began before January 1, 2001; in which the claimant returned to work before starting disability management; or whose sole event was a closure code. Workers were divided into cohorts according to the date that they entered disability management. To ensure that cases had sufficient time for several interventions to occur, the study excluded cases that had been opened in the 30 months prior to data extraction and had yet to be closed, although cases that had been opened and closed during that 30-month period were kept. Appendix A describes the databases used to compile and link the data used for this study and the data filtering steps employed to select cases for the various analyses.

To identify key disability management interventions, activities, and events, status codes in the disability management system with similar definitions were grouped into categories. For instance, the category “Letter Sent” encompassed several disability management activities intended to remind injured workers of important deadlines or warn them of an upcoming reduction in benefits. As explained below, several events were consolidated into the category of a successful resolution. In all, the study covers 116,024 injured workers who received disability management services between January 1, 2006 and June 1, 2017.¹⁵ This 11.5-year timeframe captured both the complete disability periods for recent disability

¹⁵ The date of injury for these workers occurred between January 1, 2001 and June 1, 2017. The population had track dates between January 1, 2005 and June 1, 2017.



cases and cases with extended disability periods.

Variables in the Study

The following key outcomes of interest (dependent variables) were included in this study: successful resolution of disability management, adherence to the field nurse assignment policy, and adherence to the second opinion evaluation policy. In consultation with DFEC, successful resolution was defined as cases in which there is a return to work or cases that are assigned one of eight codes associated with the conclusion of case management. Six of these codes represent cases in which benefits were terminated with no continuing injury-related disability, reductions were made in compensation due to the claimant's refusing new work offered, or the claimant elected to use Office of Personnel Management (OPM) benefits or otherwise declined to accept compensation.

Two codes concerned the termination of benefits due to fraud or felony, though these were a very small part of the sample (0.11% and 0.01%, respectively). Appendix C shows the complete list of codes that qualify as a successful resolution. Compliance with the field nurse assignment policy is defined as receiving a field nurse within 28 days of the certification of the claim by a claims examiner. However, certification dates were available for only 12,492 of the 116,024 observations in the sample (10.8%). Further, all but 70 of the cases with a certification date started after the policy change, making a comparison of outcomes before and after the policy change infeasible.¹⁶ Consequently, the *disability management start date* was used as an *alternate*, or stand-in, for the certification date in measuring the interval before a claimant was assigned a field nurse.

Claimants determined to be “totally disabled” are subject to the second opinion evaluation policy implemented in FY 2013. Because DFEC data do not contain a field indicating whether a claimant has been deemed totally disabled, in consultation with DFEC the study used a substitute. For the analysis of the second opinion evaluation policy, we created a subset of cases (27,564 observations) that had not reached successful resolution 12 months from the track date and had not received the MSN disability management code (second opinion not necessary).

2 HOW PREVALENT IS A SUCCESSFUL RESOLUTION?

This study addressed the rates of successful resolution for the entire population of cases that received disability management services between January 2006 and June 2017 (116,024 injured workers) and for the pre- and post-policy change populations. The study team also computed two other features of successful resolution:

- Time to first successful resolution
- Disability management case length

We computed the estimates for the entire population and by cohort year.

2.1 SUCCESSFUL RESOLUTION RATES OVER TIME

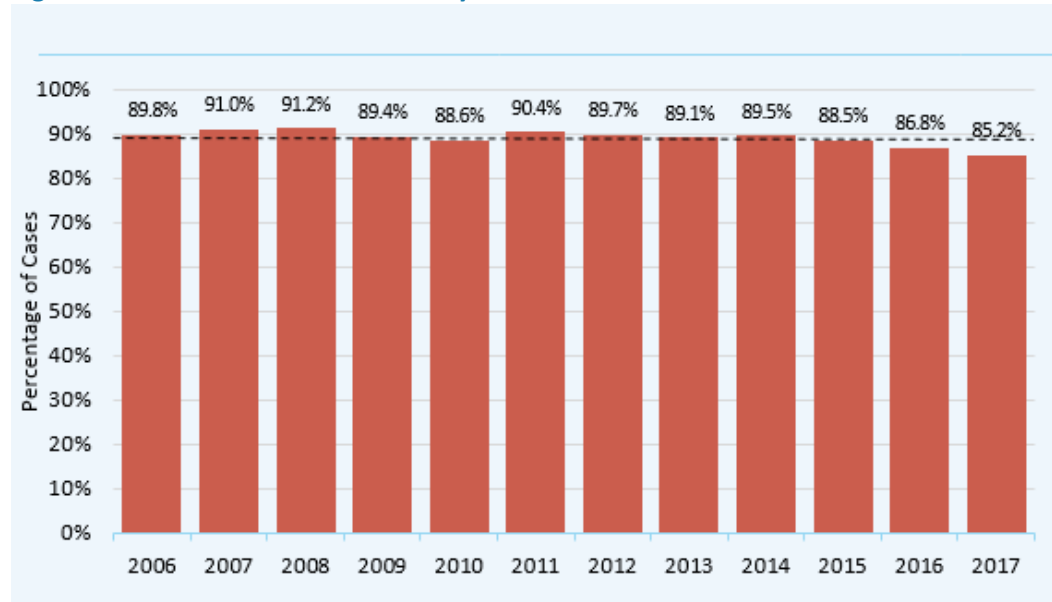
Figure 1 shows the rates of successful resolution by cohort year for the period 2006–2017. Successful resolution rates were stable over the 11.5 years included in the study. The average successful resolution rate was 89.3% for the subset of cohorts between 2006 and 2015 (range of 88.5–91.2%). Of note, the successful resolution rates are lower for the 2016 and 2017 cohorts (86.8% and 85.2%, respectively) ($p < .0001$). The rates for these two cohorts may increase once the remaining cases (late bloomers) in each

¹⁶ DFEC did not provide an explanation for the missing certification dates.



cohort reach a final resolution.

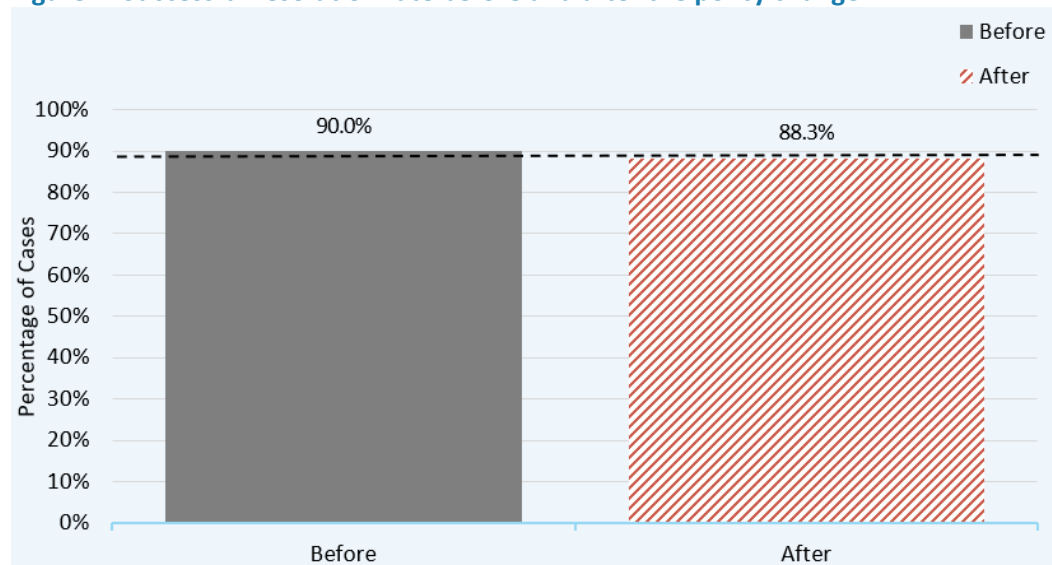
Figure 1: Successful resolution rate by cohort



Note: N = 116,024 for all cohorts; average successful resolution rate = 89.3% (dashed line), $p < .001$.
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

The policy change was not associated with changes in the rate of successful resolutions (Figure 2). The rate shows a decrease from an average of 90.0% before the policy change to an average of 88.3% after the policy change ($p < .0001$). Of note, if observations from the 2013 cohort are removed to allow for the implementation of the policy (lag time), the successful resolution rate increases slightly to 89.0% after the policy change (Figure 3).

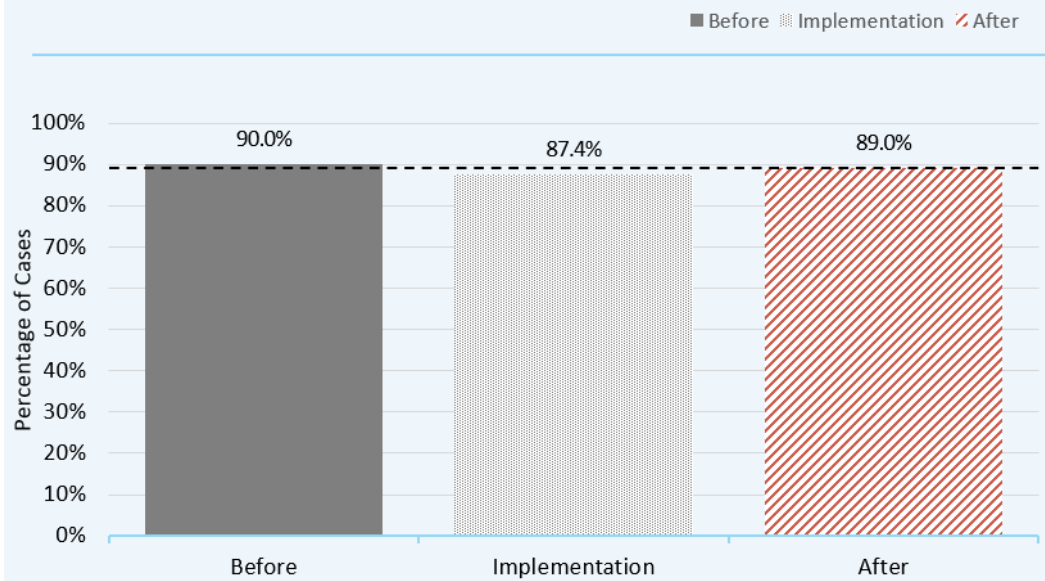
Figure 2: Successful resolution rate before and after the policy change



Notes: N before policy change = 70,711; after policy change = 45,313 (the policy change occurred on October 1, 2012).
Average successful resolution rate for the entire population = 89.3% (dashed line).
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.



Figure 3: Successful resolution rate before and after the policy change, with implementation lag



Notes: N before policy change = 70,711; implementation lag = 16,436; after policy change = 28,676.

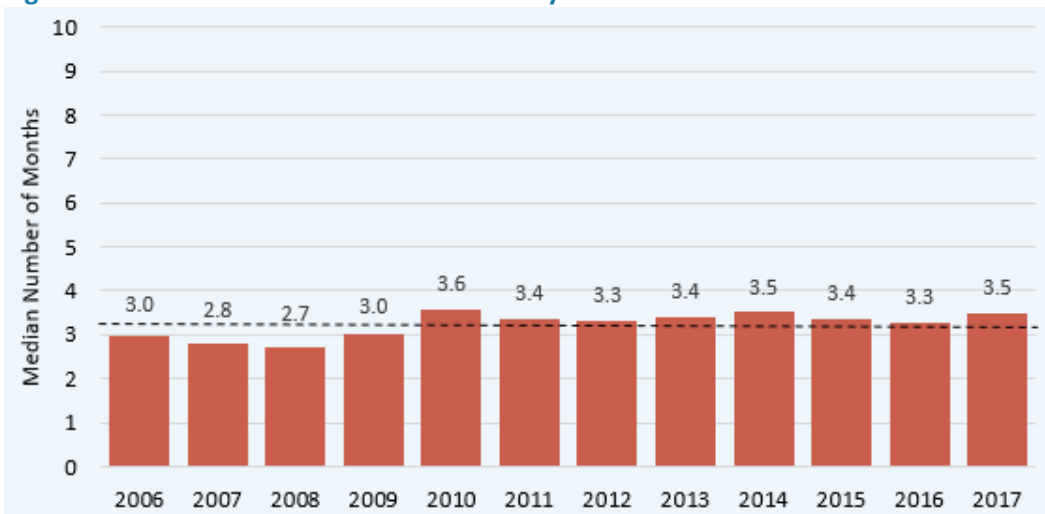
Average successful resolution rate for the entire population = 89.4% (dashed line).

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

2.2 TIME TO FIRST SUCCESSFUL RESOLUTION

The study team also investigated whether there were changes in the time to first successful resolution. The analysis showed that more recent cases had longer times to successful resolution than earlier cases ($p < .0001$) (Figure 4). The time to first successful resolution remained at or below the overall median of 3.2 months between 2006 and 2009 but exceeded 3.2 months in all subsequent years. When cases were aggregated before and after the policy change, the median time to first successful resolution increased from 3.1 months before the policy change to 3.4 months after the policy change.

Figure 4: Time to first successful resolution by cohort



Notes: N = 116,024. Median time to first successful resolution = 3.2 months (dashed line).

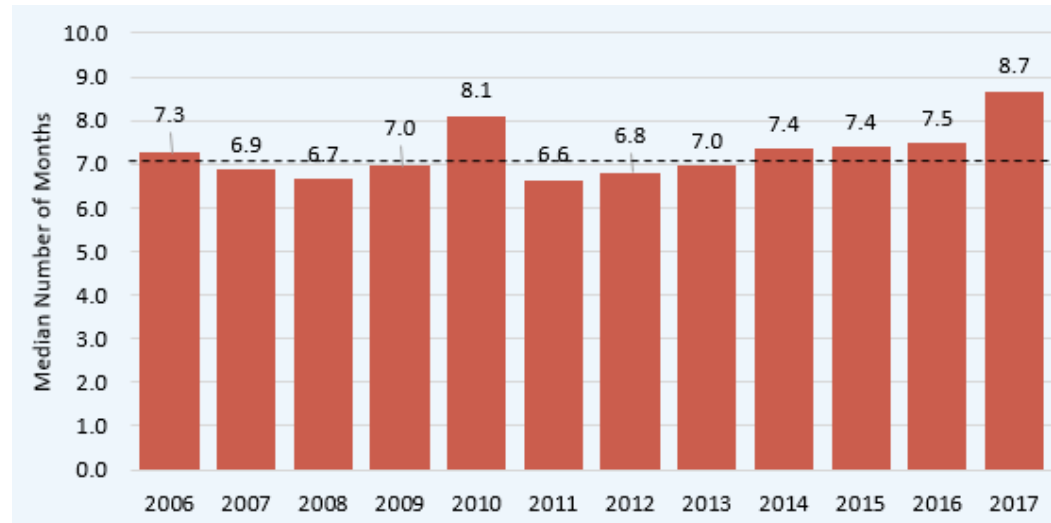
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.



2.3 CASE LENGTH BY COHORT

Case length showed a pattern similar to that of time to first successful resolution. Case length began to increase in 2010, three years before the implementation of the policy change, and continued to increase after the policy change (Figure 5). The median case length increased from 7.0 months during the pre-policy change period to 7.4 months in the post-policy change period (not shown).

Figure 5: Case length by cohort



Notes: N = 116,024. Median case length = 7.1 months (dashed line), $p = .001$.

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.



3 HOW PREVALENT ARE THE FIELD NURSE ASSIGNMENT AND SECOND OPINION EVALUATION CODES? HOW DOES THE TIMING OF FIELD NURSE ASSIGNMENT AND SECOND OPINION EVALUATION COMPARE BEFORE AND AFTER THE POLICY CHANGE?

The study addressed the question of how prevalent the field nurse assignment and second opinion evaluation codes were for the entire population¹⁷ and, separately, in the pre- and post-policy change periods. In addition to the frequency of the interventions, the study team produced estimates of the successful resolution rates for the field nurse assignment population and for a subset of the population eligible for a second opinion evaluation. We also conducted analyses of other features of successful resolutions for each policy, including time to first successful resolution and case length.

OWCP Adherence Parameter Targets

If a claims examiner implements the disability management plan defined by FECA, OWCP expects cases to have better outcomes.* OWCP expects the following adherence/compliance targets:

- District offices should assign a field nurse within 14 days of the start of case management for 50% of the cases and within 28 days for 90% of all cases.
- 100% of the cases in which workers were totally disabled should receive a second opinion evaluation no later than 12 months of their participation in disability management. Because the study team did not have data on total disability, we defined eligibility as any case where successful resolution had not been reached by 12 months and a claims examiner had not determined that a second opinion evaluation was not necessary (MSN code).

* Division of Federal Employees' Compensation, *FECA Procedure Manual*, Part 2, Group 3, Chapter 2-0811, paragraph 6a.

The new component here is an analysis of measures related to adherence to/compliance with each policy. It should be noted that this report, in discussing adherence, uses the same terms for the pre-policy change and the post-policy change periods. The meaning in the pre-policy change period is that the case met the conditions in the policies (prompt field nurse assignment, second opinion within 12 months) even though the policies were not in effect during that period.

3.1 HOW PREVALENT ARE THE FIELD NURSE ASSIGNMENT AND SECOND OPINION CODES, BEFORE AND AFTER THE POLICY CHANGE?

There was a 5 percentage point increase in the cases that received a field nurse, from 72.6% (N= 70,711) before the policy change to 77.6% (N = 45,313) after the policy change. There was also an increase of 15.4 percentage points in eligible cases that received a second opinion evaluation, from 73.6% (N = 18,146) before the policy change to 89.0% (N = 9,418) after the policy change.

The remainder of this section examines the extent to which these results show compliance with the policy change and the precise timing of the field nurse assignment and the receipt of a second opinion evaluation.

¹⁷ That is the entire population of all disability cases that received disability management services between January 2006 and June 2017 (116,024 injured workers).



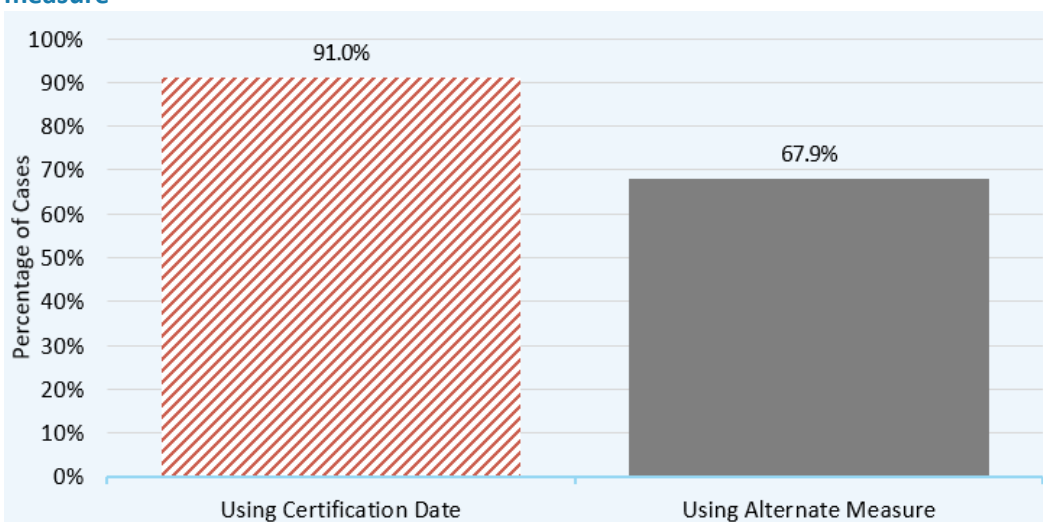
3.2 ADHERENCE TO THE FIELD NURSE ASSIGNMENT POLICY

To investigate compliance with the requirement of prompt field nurse assignment, the study team conducted two analyses of adherence to the policy using (1) the certification date as the start of case management, and (2) the disability management start date as an alternate measure, or stand-in, for the certification date. The disability management start date was used because the certification date was available for only 27% of the post-policy period cases and thus had limited value for this analysis.

The cases that have a certification date were similar to the cases that did not have a certification date. When the certification date was available, the median difference in timing was one day between the certification date and the disability management start date. Among cases for which both dates were available, 26% had an exact match, 54% had an alternate variable within three days of the certification date, and 69% had an alternate variable within seven days of the certification date. Of note, cases with a certification date represent more occupational illness cases than those with a disability management start date (25.3% vs. 15.5%), fewer fractures (5.7% vs. 10.6%), more musculoskeletal injuries (15.4% vs. 9.3%), fewer leg injuries (9.8% vs. 13.5%), and more injuries from handling manual equipment (20.6% vs. 16.6%).

Cases with a certification date show a 91.0% compliance rate with the field nurse assignment policy, which is slightly higher than DFEC's target of 90% at 28 days (Figure 6). The 91.0% rate occurred partly because, by definition, all cases with a certification date received a field nurse assignment. (Cases would be not in compliance if the claims examiner assigned a field nurse after 28 days.) Conversely, cases with a disability management start date include those that did not receive a field nurse at all (25.5% of cases) (Figure 7). When we removed those cases from the sample, cases with a disability management start date had a 91.2% compliance rate.

Figure 6: Adherence to the field nurse assignment policy, using the certification date and the alternate measure



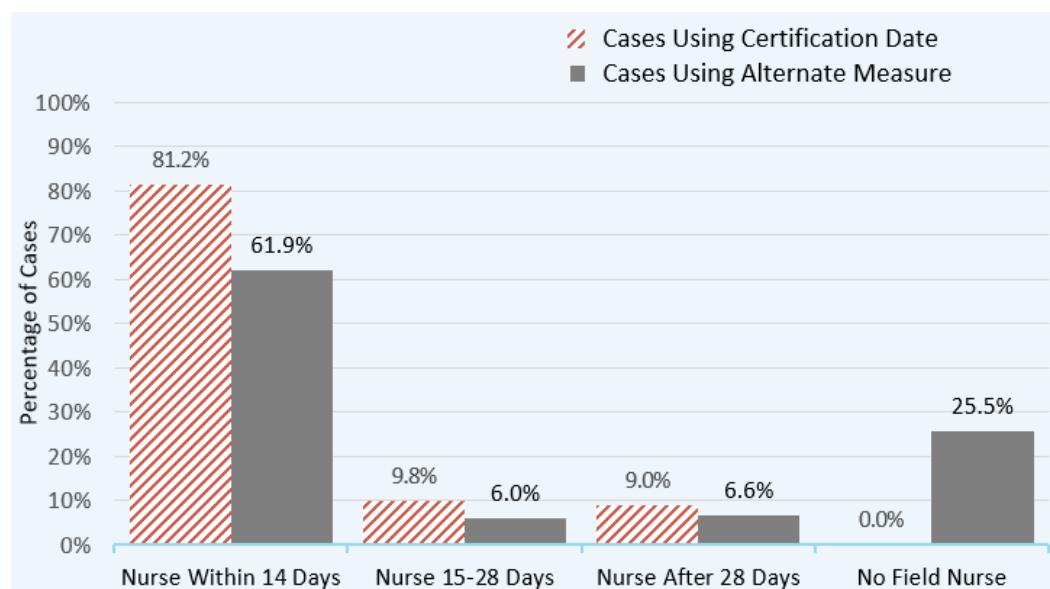
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.



Figure 7 shows the degree of adherence to the field nurse assignment policy within 14 days, 15–28 days, and after 28 days for both the certification date and the alternate variable. In the first 14 days after the certification date, 81.2% of the cases were assigned a field nurse (the target was 50% of all cases.) The rate of field nurse assignment within 28 days was 91.0%. Among cases that were not in compliance, the median time to a field nurse was 112 days (not shown).

The analysis using the alternate measure produced different rates of compliance: 61.9% (alternate measure) at 14 days compared to 81.2% (certification date). A field nurse assignment within 28 days occurred in 67.9% of the cases received, below the policy target. However, the analysis using the certification date does not include a category for “no field nurse.” When we removed the “no field nurse” category from the sample using the alternate measure, the compliance rate increased to 91.2%.

Figure 7: Adherence to the field nurse assignment policy within 14 days, 15–28 days, and after 28 days, or no assignment, using the certification date and the alternate measure



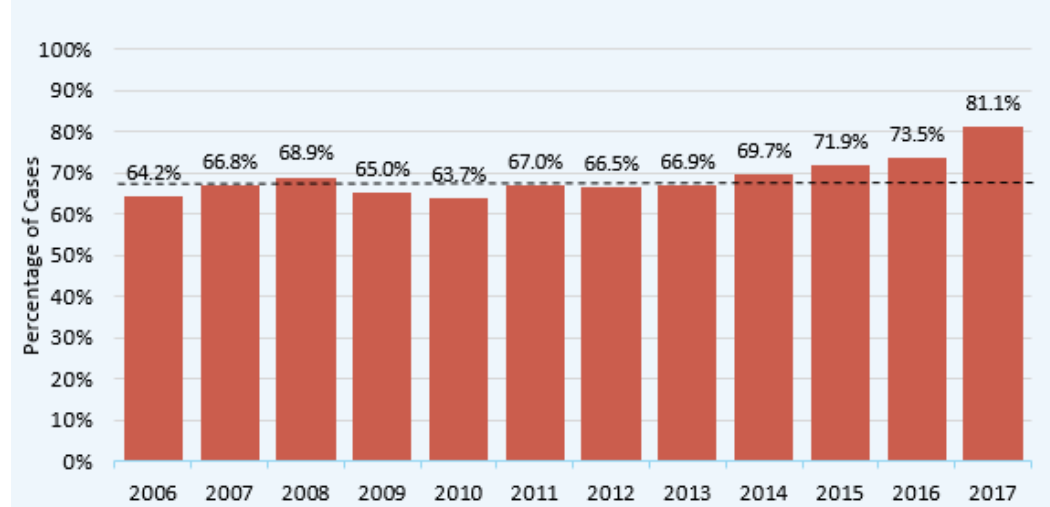
Notes: Certification date N <14 days =10,091; 15-28 days=1,214; >28 days = 1,117. Alternate measure N <14 days = 71,801; 15-28 days = 7,004; >28 days = 7,647. No field nurse assignment = 29,572.

Source: Federal Employees’ Compensation Act, FECA Claims Database, 2006–2017.

Figure 8 shows that after the field nurse assignment policy change, compliance (using the alternate measure) increased over time and can be seen in each cohort year beginning in 2013. This trend is also reflected in an aggregate increase in adherence after the policy change (66% pre-policy change vs. 71% post-policy change). Policy adherence spiked in 2017 at 81.1% relative to the average adherence level of 67.9% for the period 2006–2017.



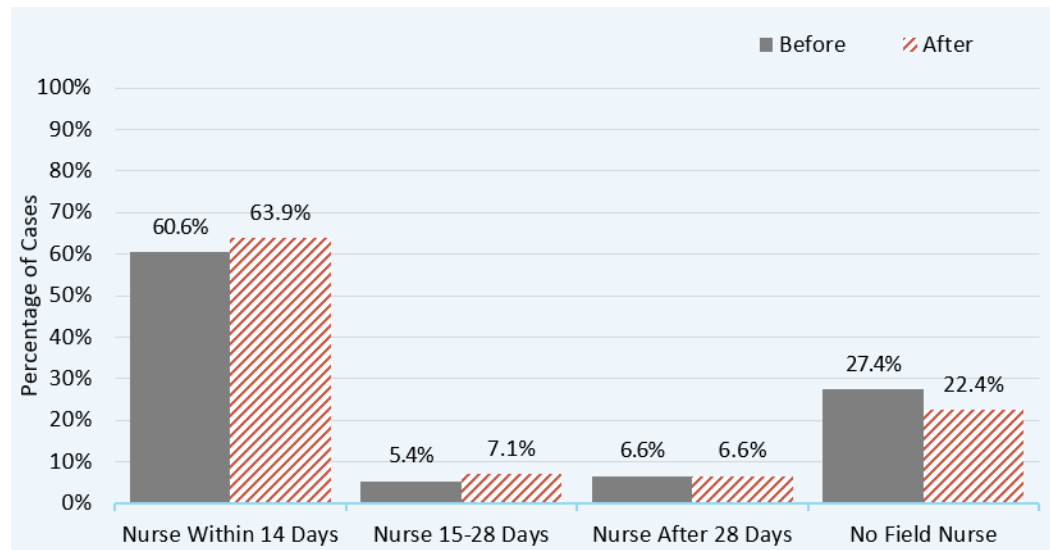
Figure 8: Adherence to the field nurse assignment policy by cohort, using the alternate measure



Notes: N = 116,024. Average field nurse assignment policy adherence using the alternate variable = 67.9% (dashed line).
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

Figure 9 shows that an increase in adherence after the policy change occurred in cases with a field nurse assignment within 14 days (60.6% before the policy change vs. 63.9% after the policy change), and there was a reduction in the proportion of cases that did not receive a field nurse assignment (27.4% before the policy change and 22.4% after the policy change). Adherence for all other field nurse assignment time intervals remained essentially the same.

Figure 9: Adherence to the field nurse assignment policy before and after the policy change, using the alternate measure



Notes: N <14 days: before policy change = 42,830, after policy change = 28,971; 15-28 days: before = 3,808, after = 3,196; >28 days: before = 4,672, after = 2,975; no field nurse: before = 19,401, after = 10,171.
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.



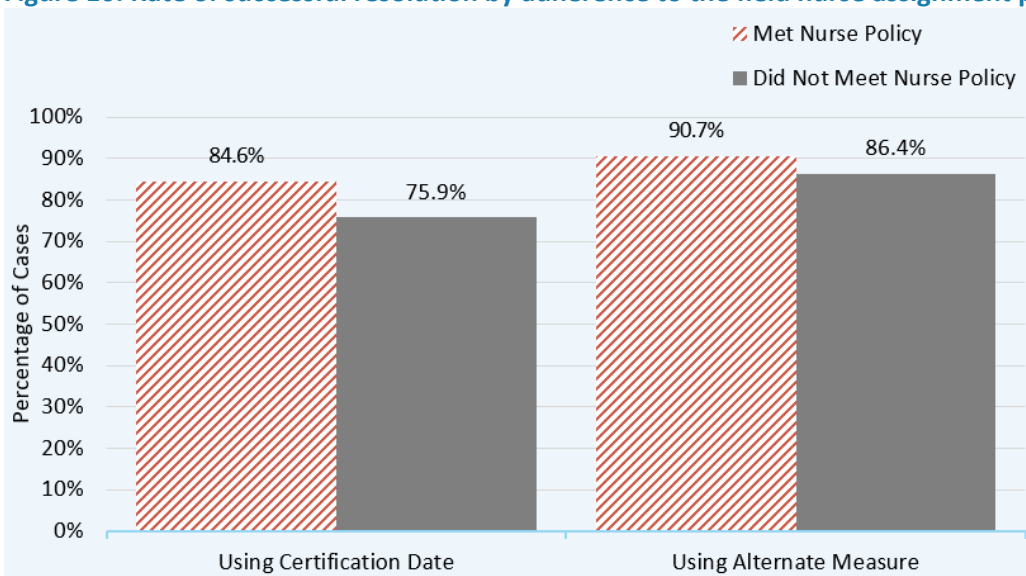
3.3 SUCCESSFUL RESOLUTION RATES BY ADHERENCE TO FIELD NURSE ASSIGNMENT POLICY

As mentioned earlier, the universe of disability management cases over the 11.5-year period included in the study had an 89.3% successful resolution rate. DFEC expects greater success in disability cases that have a field nurse assignment.¹⁸ As discussed below, cases that received a field nurse within the targeted timeframe (28 days) had a higher successful resolution rate than cases that did not meet the policy although the difference was less pronounced after the policy change.¹⁹

Figure 10 shows that the positive association between successful resolution and adherence to the field nurse assignment policy is present in both the certification date analysis (84.6% successful resolution for cases that met the policy vs. 75.9% that did not) and in the alternate measure analysis (90.7% vs. 86.4%), an 8.7 and 4.3 percentage point difference, respectively. The overall successful resolution rate using the alternate measure is 89.3% compared to 83.8%, the rate obtained using the certification date.

Some cases had a successful resolution without any interventions after the worker entered disability management, and these cases may not have received a field nurse assignment at all, since a resolution had already been achieved. These cases increased the successful resolution rate of all cases. When the cases that reached resolution without any intervention are removed, the global successful resolution rate is 86%, closer to the 83.8% rate observed in cases with a certification date.

Figure 10: Rate of successful resolution by adherence to the field nurse assignment policy



Notes: Using the certification date: N: met field nurse assignment policy = 11,305; did not meet policy = 1,117. Successful resolution rate = 83.8%. Using the alternate measure: N: met policy = 78,805; did not meet policy = 37,219. Successful resolution rate = 89.3% (p < .001).

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

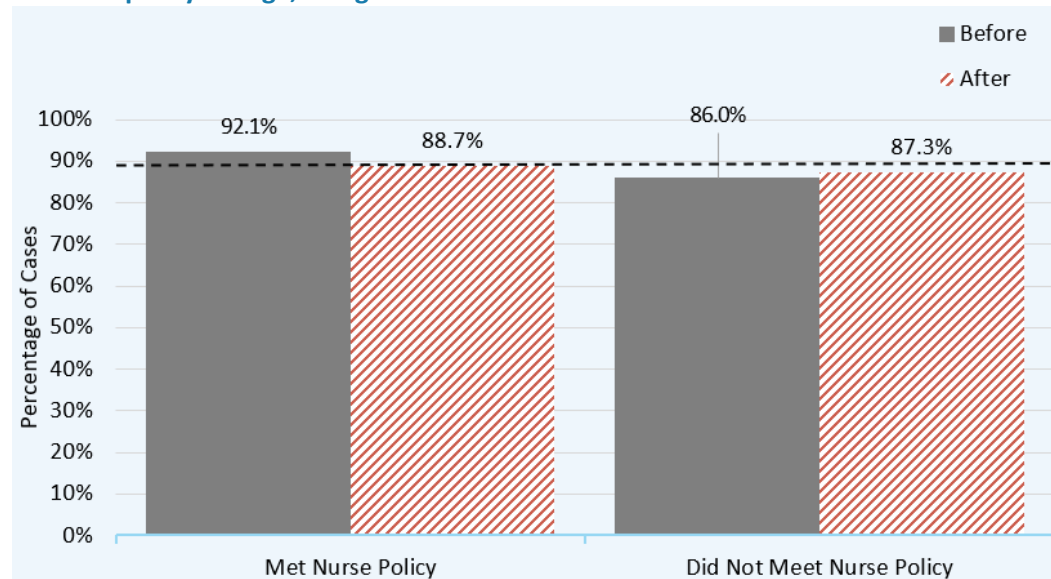
¹⁸ "Nurse services are a valuable tool for assisting claimants in returning to work and assisting CEs [claims examiners] in moving a case towards resolution. Early referral for nurse intervention services is critical to successful disability management"; Division of Federal Employees' Compensation, *FECA Procedure Manual*, Part 2, Group 3, Chapter 2-0811, 6a. <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FECA-PT2/group3.htm#208115>

¹⁹ Some cases immediately achieved successful resolution and may or may not have received a field nurse after that first successful resolution was reached. Removing these cases results in a successful resolution rate of 72.3% for cases that did not meet the policy. See Appendix C for details.



Figure 11 shows the rate of successful resolution by field nurse assignment policy adherence, before and after the policy change. Before the policy change, cases that adhered to the policy had higher successful resolution rates than those that did not (92.1% vs. 86.0%, comparing the gray bars). After the policy change, cases that adhered to the policy had a 1.4 percentage point increase in successful resolution compared to cases that did not (88.7% vs. 87.3%, comparing the red bars).

Figure 11: Rate of successful resolution by adherence to field nurse assignment policy, before and after the policy change, using the alternate measure



Notes: N: met field nurse assignment policy: before = 46,638, after = 32,167; did not meet policy: before = 24,073, after = 13,146.

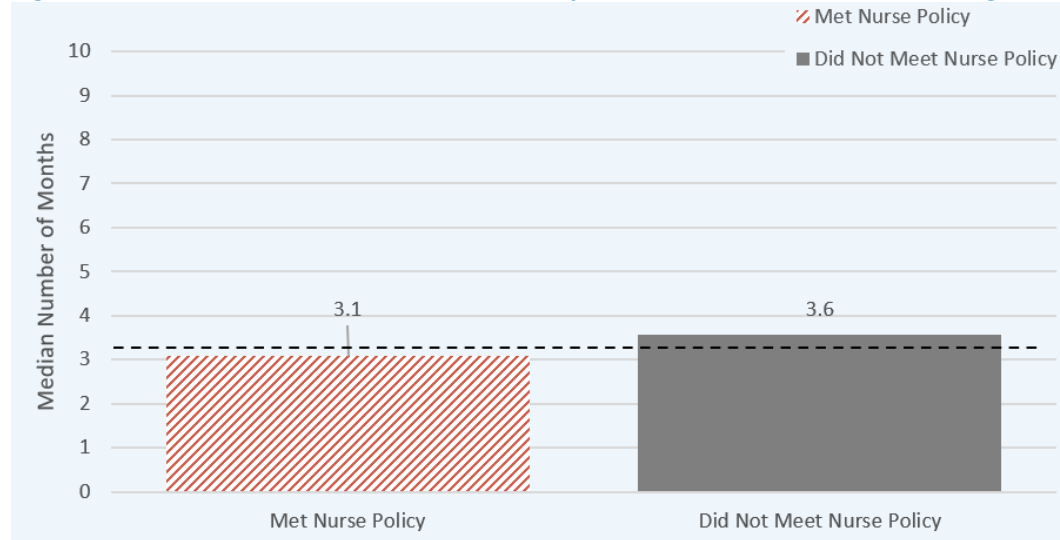
Successful resolution rate = 89.3% (dashed line) $p < .001$.

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

In addition, the study examined two other measures associated with successful resolution: time to first successful resolution and case length. Adherence to the field nurse assignment policy was associated with shorter times to first successful resolution, about 3.1 months for cases that adhered to the field nurse assignment policy compared with 3.4 months for cases that did not adhere to the policy (Figure 12).



Figure 12: Time to first successful resolution by adherence to the field nurse assignment policy

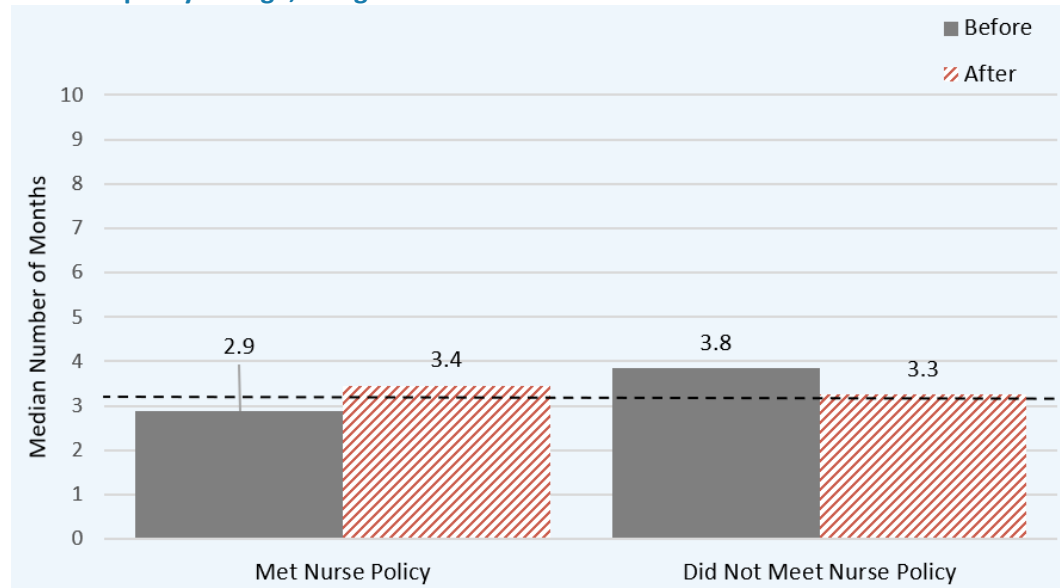


Note: Median time to first successful resolution = 3.2 months (dashed line).

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

The cases that received prompt field nurse assignment before the policy change had shorter times to resolution than cases that did not (2.9 months vs. 3.8 months); after the policy change, the times to successful resolution were similar regardless of compliance status, 3.4 months and 3.3 months (Figure 13).

Figure 13: Time to first successful resolution by adherence to field nurse assignment policy, before and after the policy change, using the alternate measure



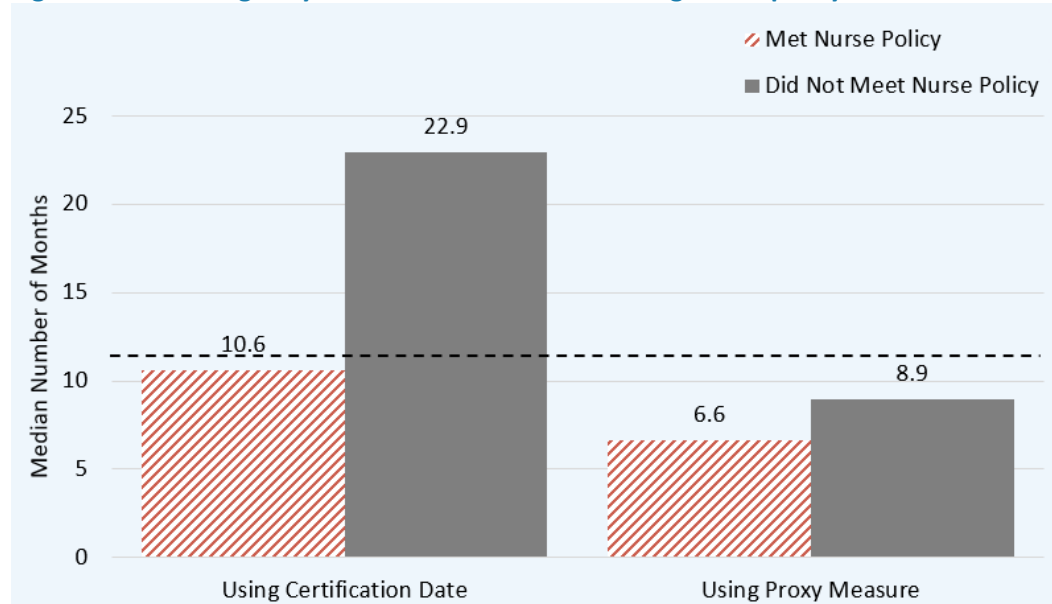
Note: Median time to first successful resolution = 3.2 months (dashed line).

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.



Adherence to the field nurse assignment policy was also associated with shorter case lengths, as seen in Figure 14. The difference in case length was greater in the cases with a certification date. In these cases, the duration of cases that met the policy (10.6 months) is half that of cases that did not meet the policy (22.9 months).

Figure 14: Case length by adherence to field nurse assignment policy

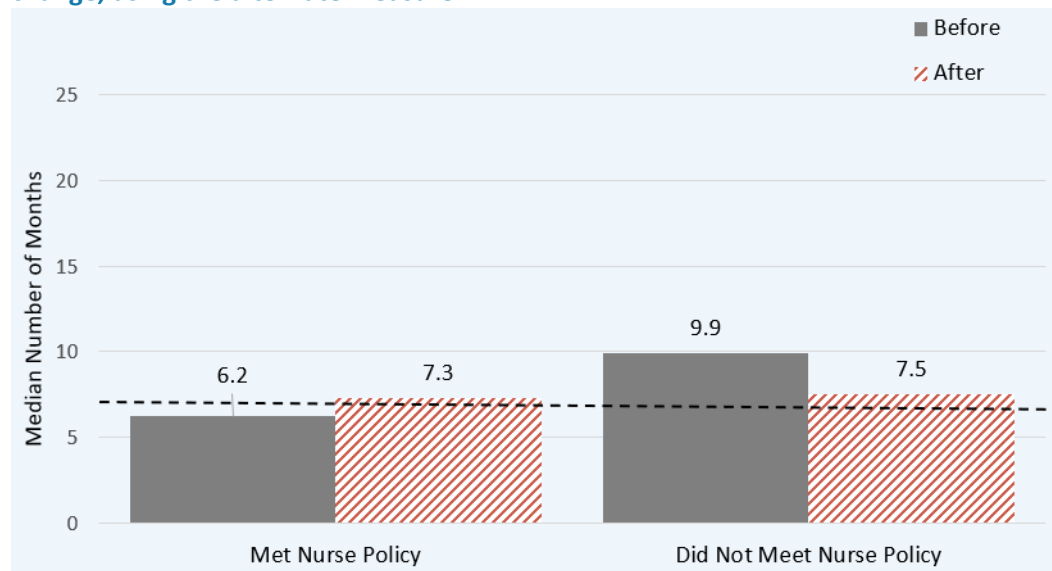


Notes: N: met field nurse assignment policy = 11,305; did not meet policy = 1,117. Median case length = 11.6 months (dashed line).

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

Figure 15 reinforces the findings regarding time to first successful resolution. After the policy change, the cases that met the field nurse assignment policy and those that did not had similar case lengths; before the policy change, the cases that had prompt field nurse assignment had shorter case lengths.

Figure 15: Case length by adherence to field nurse assignment policy, before and after the policy change, using the alternate measure





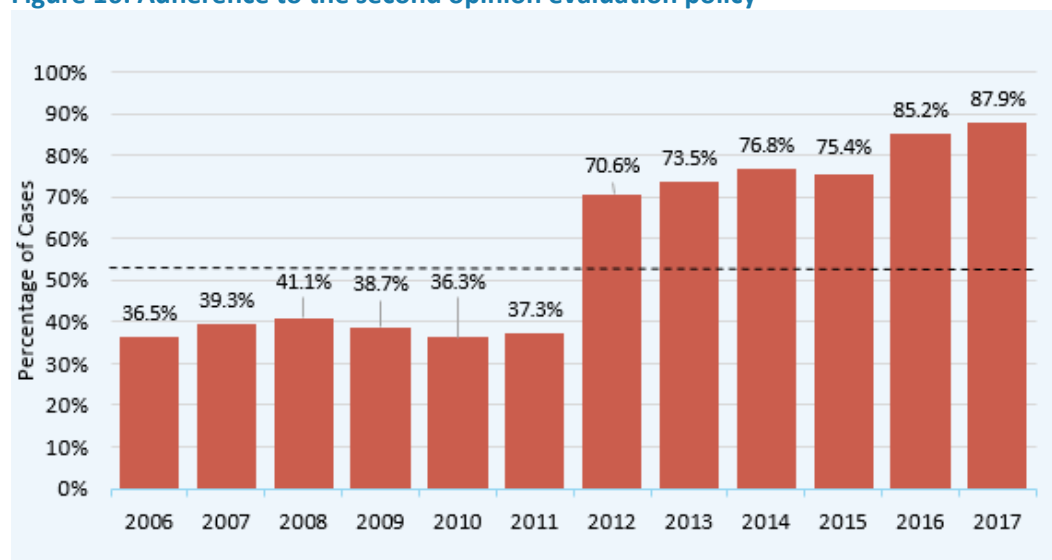
Notes: N: met policy: before policy change = 46,638, after policy change = 32,167; did not meet policy: before = 24,073, after = 13,146. Median case length = 7.1 months (dashed line).
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

3.4 SECOND OPINION EVALUATION

We measured adherence to the requirement for a second opinion evaluation for a subset of the eligible population defined as cases that did not have a successful resolution event by the 12-month milestone and did not receive the MSN code. This criterion filtered out cases that were successful before the end of the 12-month period, which may have obviated the request for a second opinion evaluation by the claims examiner. It also filtered out cases where the claims examiner determined that a second opinion evaluation was unnecessary (cases that received the MSN code).

Figure 16 shows that 37.3% of cases adhered to the second opinion evaluation in 2011. After the policy change was implemented in 2012, the percentage of second opinion evaluations increased to 70.6%, a 33.3 percentage point difference.

Figure 16: Adherence to the second opinion evaluation policy

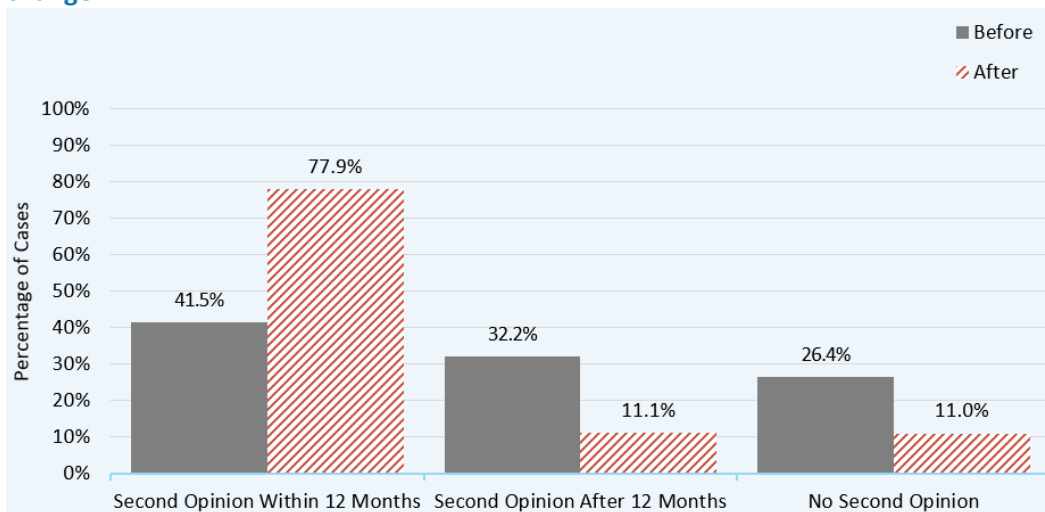


Notes: N = 27,564. Average adherence to the second opinion evaluation policy = 53.9%.
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

Next, we reviewed the changes in adherence to the second opinion evaluation policy across cases that (1) met the policy (within 12 months), (2) did not meet the policy, but received a second opinion evaluation after 12 months, and (3) cases that did not receive a second opinion evaluation. Figure 17 shows the increase in the proportion of eligible cases that received a second opinion evaluation within the required 12-month period, from 41.5% before the policy change to 77.9% after the policy change.



Figure 17: Adherence to the second opinion evaluation requirement before and after the policy change

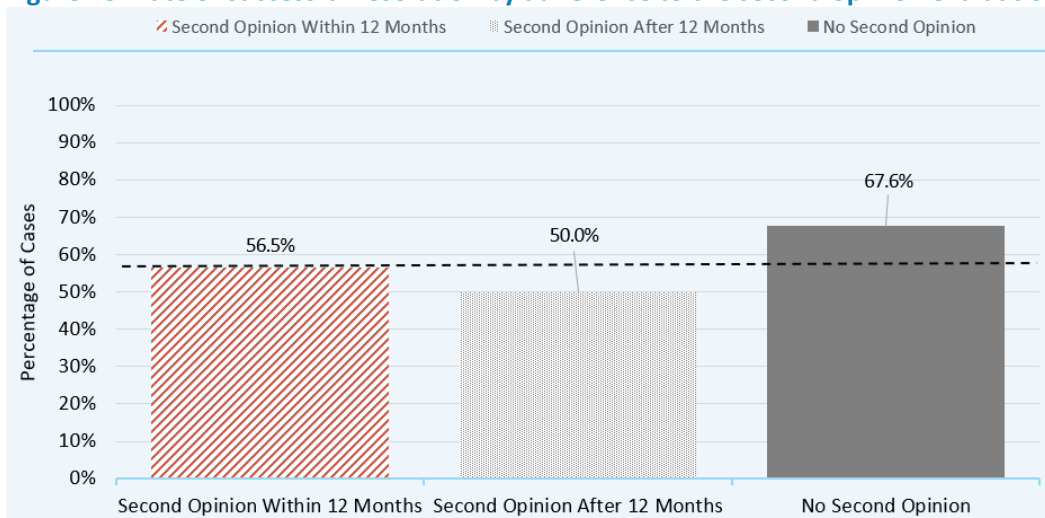


Notes: N <12 months = 14,857; >12 months = 6,892; no second opinion evaluation = 5,815.
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

3.5 Successful Resolution Rates by Adherence to Second Opinion Evaluation Policy

Similar to the findings on adherence to the field nurse assignment policy, we observed higher successful resolution rates for eligible cases that received a second opinion evaluation within 12 months (56.5%) compared to cases that received an evaluation after 12 months (50.0%) or to cases that did not receive an evaluation at all (67.6%) (Figure 18).

Figure 18: Rate of successful resolution by adherence to the second opinion evaluation policy

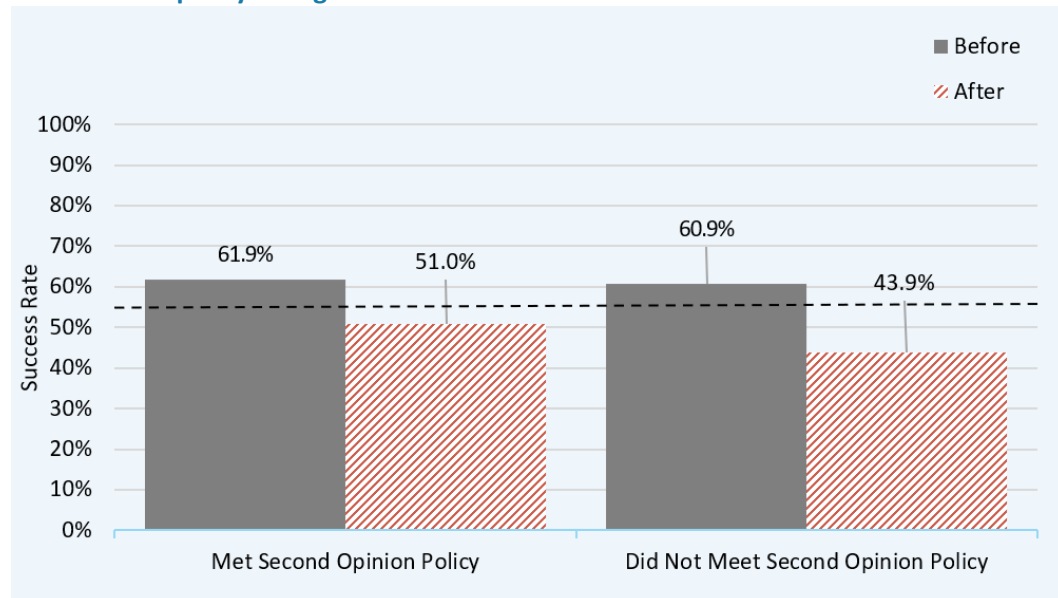


Notes: N <12 months = 14,857; >12 months = 6,892; no second opinion evaluation = 5,815.
Average successful resolution rate = 57.2%.
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

Among the cases that met the 12-month policy requirement, the successful resolution rate was higher before the policy change than after the policy change (an 11 percentage-point difference). Compliance with this policy was associated with higher successful resolution rates before and after the policy change (Figure 19).



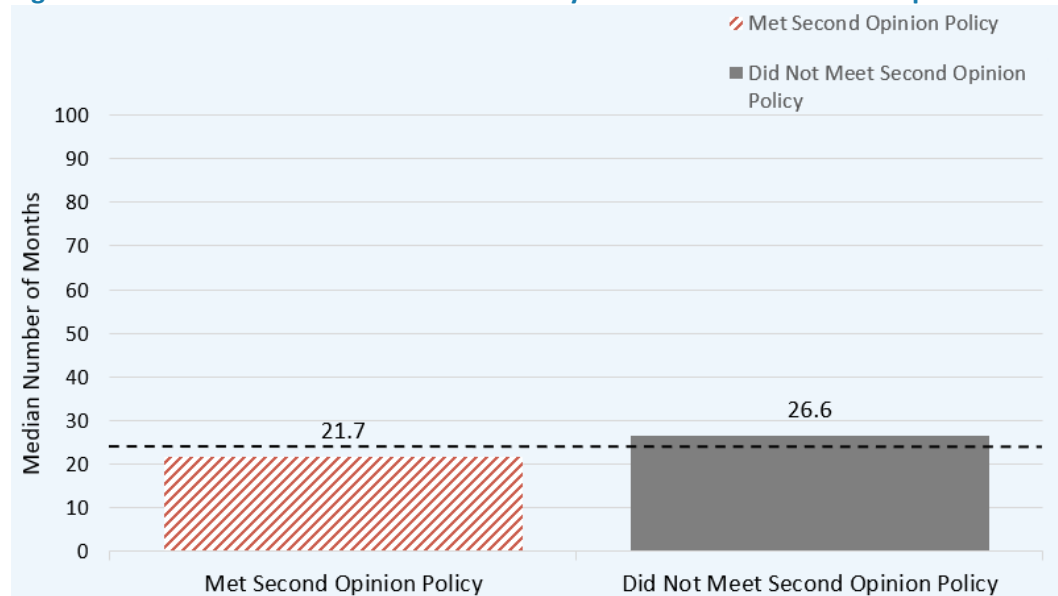
Figure 19: Rate of successful resolution by adherence to the second opinion evaluation policy, before and after the policy change



Notes: N: met policy: before policy change = 7,522, after policy change = 7,335; did not meet policy: before = 10,624, after = 2,083. Average successful resolution rate for the entire population = 57.2% (dashed line).
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

The cases that adhered to the second opinion evaluation policy had slightly shorter times to first successful resolution (21.7 months) relative to noncompliant cases (26.6 months) (Figure 20).¹⁰ However, upon disaggregating the noncompliant cases, we observed that cases that never had a second opinion evaluation had the shortest timeframes to successful resolution. Cases that had a second opinion evaluation after 12 months had the longest timeframes to successful resolution (Figure 21). This pattern holds true both before and after the policy change (not shown).

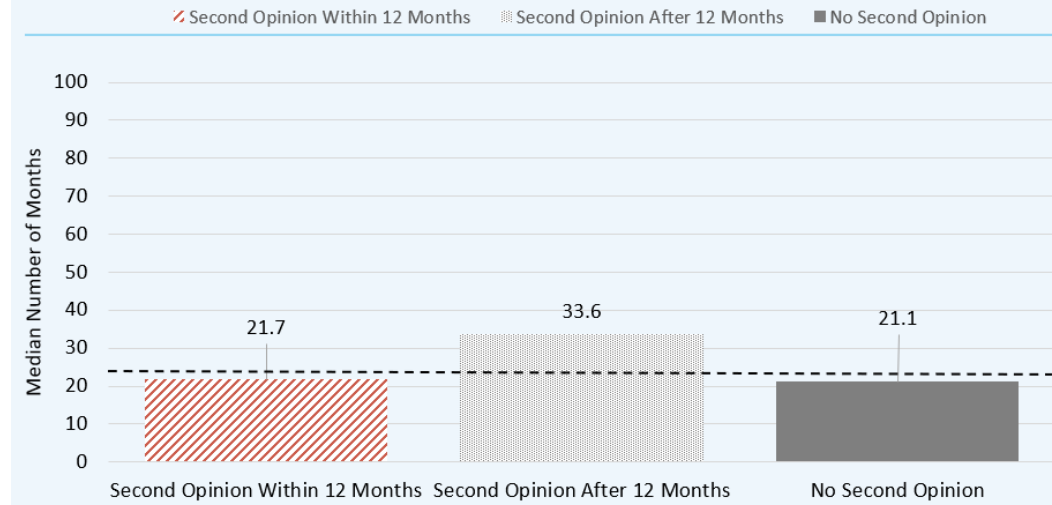
Figure 20: Time to first successful resolution by adherence to the second opinion evaluation policy



Notes: N: met = 14,857; did not meet policy = 12,707. Median time to successful resolution = 23.7 months.
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.



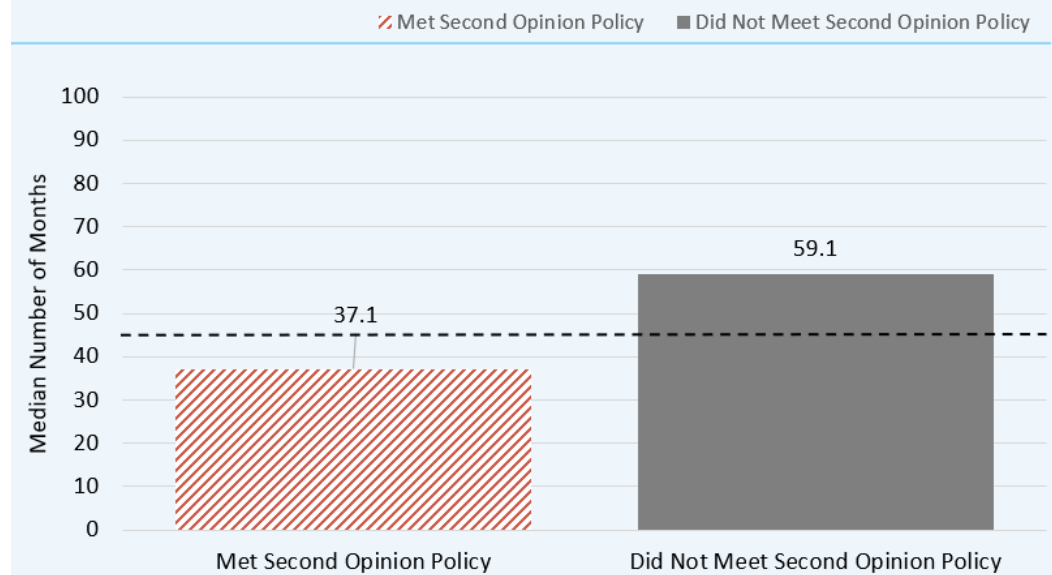
Figure 21: Time to first successful resolution by second opinion evaluation policy criteria



Notes: N <12 months = 14,857; >12 months = 6,892; no second opinion evaluation = 5,815.
Median time to successful resolution = 23.7 months (dashed line).
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

Overall, cases that were compliant with the second opinion evaluation policy had shorter durations than cases that were not compliant (37.1 months versus 59.1 months) (Figure 22). However, by disaggregating the data, we observed that cases that received a second opinion evaluation after 12 months increased to 81.6 months. Cases that did not have a second opinion evaluation at all had a duration 4.5 months shorter than that of compliant cases (32.6 months versus 37.1 months) (Figure 23).

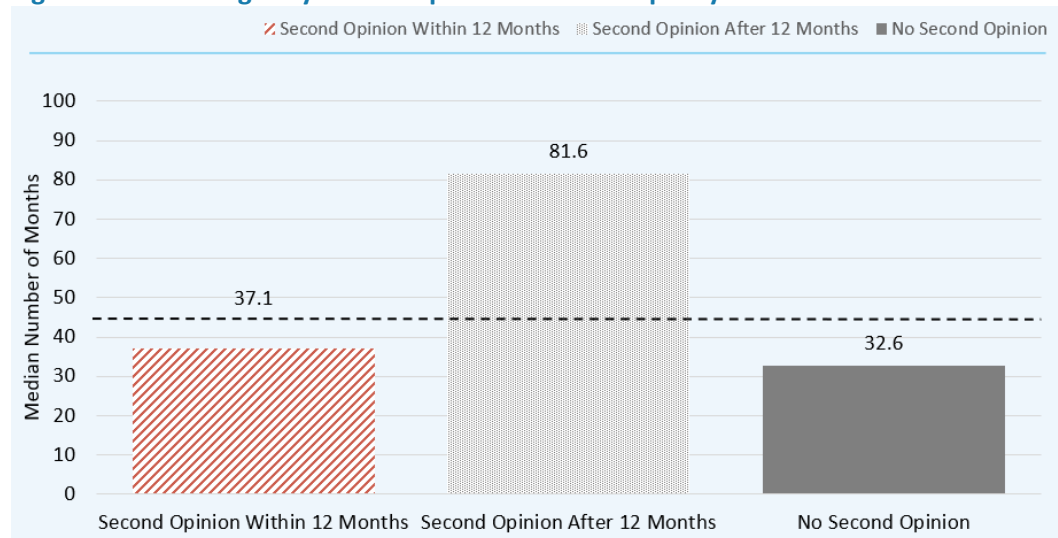
Figure 22: Case length by adherence to second opinion evaluation policy



Notes: N: met policy = 14,857; did not meet policy = 12,707. Median case length = 44.5 months (dashed line).
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.



Figure 23: Case length by second opinion evaluation policy criteria



Notes: N <12 months = 14,857; >12 months = 6,892; no second opinion evaluation = 5,815.

Median case length = 44.5 months (dashed line).

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.



4 AT WHAT FREQUENCY WERE SPECIFIC INTERVENTIONS IMPLEMENTED, AND WHAT INTERVENTION PATTERNS WERE MOST ASSOCIATED WITH SUCCESSFUL RESOLUTIONS?

DFEC also expressed interest in the sequences and intervention patterns of disability management activities that were most closely associated with the successful resolution of cases, and the frequencies with which specific interventions were implemented. Appendix D includes a list of ancillary interventions.

Identification of Intervention Patterns/Sequences

- (1) Each intervention appeared in the dataset as a single observation associated with a case.
- (2) All disability management interventions associated with a case were identified.
- (3) The disability management interventions for each case were grouped chronologically, excluding ancillary interventions.
- (4) Finally, an intervention pattern or a sequence was identified for each case.

An intervention pattern (or sequence) is defined here as a series of interventions regardless of whether there is a successful resolution in the pattern. A unique sequence is a disability management intervention pattern or series of patterns that is distinct from all other sequences. See Appendix B for a disambiguation of intervention names used throughout this report.

For the analyses of field nurse assignment and second opinion evaluation, we identified disability management interventions wherever they appeared in a case's sequence of care.

"Following sequences" are sequences that follow a sequence or an intervention pattern wherever they appear in a case's sequence of care. We defined the relevant sequences or intervention patterns as "following a field nurse" or "following a second opinion evaluation." For example, if a case began with *surgery*, was assigned a field nurse, was scheduled for a second opinion evaluation, we coded it as Nurse–Second Opinion in the sequences "following a field nurse." We coded all interventions following a field nurse or second opinion evaluation intervention until either the first successful resolution or the end of disability management.

Terms

Unique Sequence—A disability management intervention pattern that is distinct from all other sequences.

Following Sequences—Sequences that follow a specific intervention (for example, field nurse assignment, second opinion evaluation scheduled), wherever they appear in a case's sequence of care.

Using these intervention patterns, we addressed the following questions:

- What are the most prevalent unique sequences in the overall population?
- What are the most prevalent sequences of events after a field nurse assignment or after a second opinion evaluation in the entire population?
- Which sequences and intervention patterns are most closely associated with successful case resolution?
- Which intervention patterns are associated with high adherence to the field nurse assignment and the second opinion evaluation policies?



Overall, we identified 15,127 unique intervention patterns for the population (116,024 disability cases that received disability management services between January 2006 and June 2017). Of these, 9,265 unique sequences had a successful resolution (61.2% of all sequences), representing 103,652 of the 116,024 cases in the universe (89.3%).

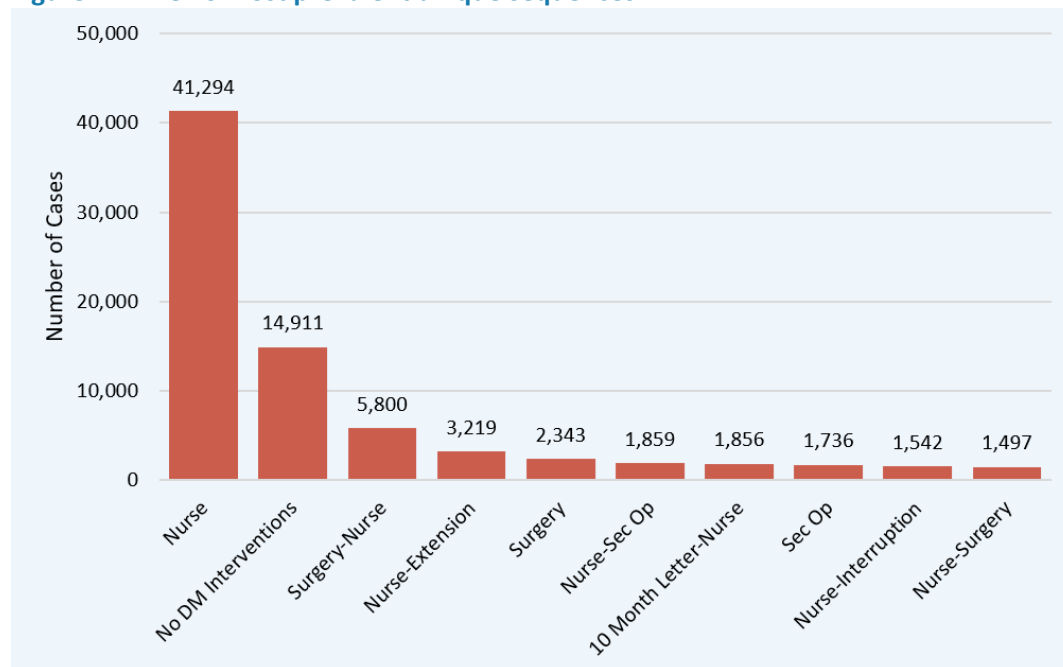
In this section, we discuss the prevalence of unique sequences, the sequences that followed a field nurse assignment, the sequences that followed a second opinion evaluation, and the adherence of such sequences to the field nurse assignment and second opinion evaluation policies.

4.1 MOST PREVALENT UNIQUE SEQUENCES

The 10 most prevalent intervention patterns represent 76,057 cases, or 65.6% of the 116,024 cases in the study (Figure 24). The following three interventions accounted for over half (53.4%) of all intervention patterns:

- Nurse (a field nurse assignment without any other major disability management intervention): 41,294 cases (35.6% of cases).
- No DM Intervention (no major disability management intervention after entry into disability management): 14,911 cases (12.9% of cases).
- Surgery–Nurse (surgery occurred before the field nurse assignment and there was no other major disability management intervention): 5,800 cases (5.0% of cases).

Figure 24: The 10 most prevalent unique sequences



Note: Total N = 116,024; 75,605 cases displayed.

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

In comparing the distribution of the 10 most prevalent sequences before and after the policy change, we found no difference of more than one percentage point in the share of any sequence pattern, with two exceptions: an increase in the proportion of Nurse–Extension sequences after the policy change (1.6%), and a decrease in the proportion of Nurse–Interruption sequences after the policy change (-2.2%), although all of these sequences had low case counts (see second to last column in Table 1). The 10 most prevalent sequences were also associated with the highest rates of successful resolution (Table 1).



There were two exceptions where a sequence in the top 10 most prevalent was not among the top 10 sequences with the highest rates of successful resolution: Nurse–Second Opinion sequence and Second Opinion (without any further interventions), where the rate increased from 74.1% to 77.0% and 63.3% to 74.8%, respectively.

Additionally, when comparing the successful resolution rates of unique sequences before and after the policy change, we found that while the overall successful resolution rates decreased, three sequences (Second Opinion, Nurse-Second Opinion, and No DM Interventions) showed greater than 1 percentage point increases in successful resolution rates, and that the overall decrease was driven by “other,” the less prevalent sequences (see the last column in Table 1).



Table 1: The 10 most prevalent unique sequences, before and after the policy change

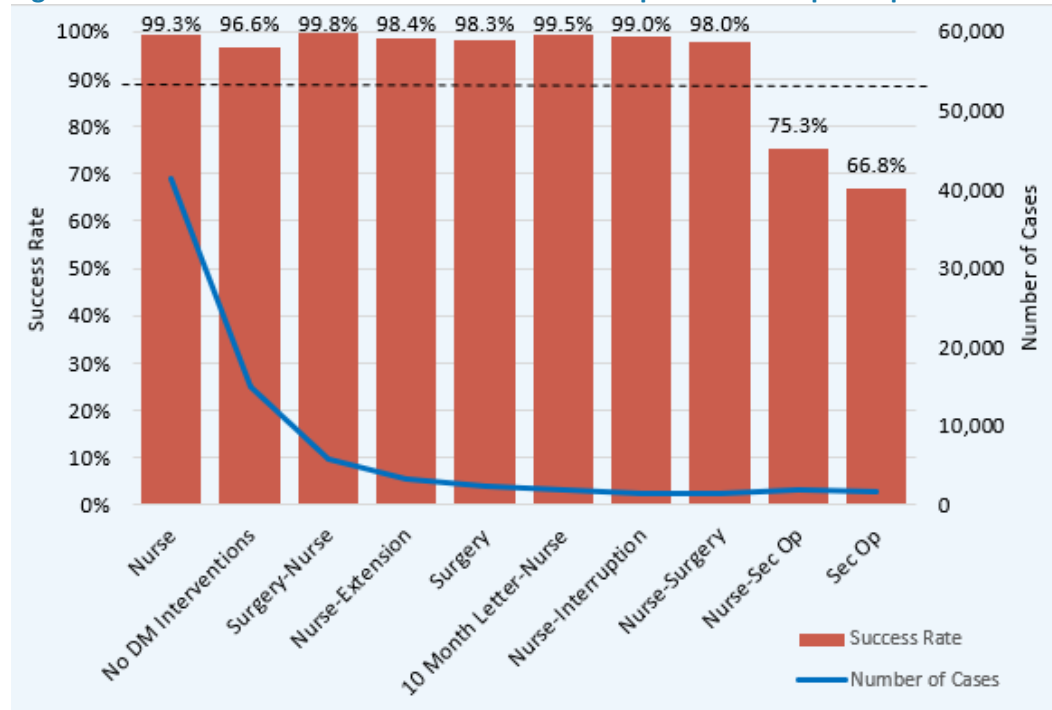
Sequence	Before Policy Change				After Policy Change				Difference	
	Total count	Count with successful resolution	% of total	% success	Total count	Count with successful resolution	% of total	% success	% of total	% success
Nurse	25,393	25,226	35.9%	99.3%	15,901	15,799	35.1%	99.4%	-0.8%	0.0%
No DM Interventions	9,206	8,828	13.0%	95.9%	5,705	5,574	12.6%	97.7%	-0.4%	1.8%
Surgery-Nurse	3,714	3,707	5.3%	99.8%	2,086	2,081	4.6%	99.8%	-0.6%	-0.1%
Nurse-Extension	1,518	1,490	2.1%	98.2%	1,701	1,679	3.8%	98.7%	1.6%	0.6%
Surgery	1,476	1,450	2.1%	98.2%	867	853	1.9%	98.4%	-0.2%	0.1%
10-Month Letter-Nurse	1,100	1,096	1.6%	99.6%	756	750	1.7%	99.2%	0.1%	-0.4%
Nurse- Interruption	1,535	1,519	2.2%	99.0%	7	7	0.0%	100.0%	-2.2%	1.0%
Nurse-Surgery	722	706	1.0%	97.8%	775	761	1.7%	98.2%	0.7%	0.4%
Nurse-Second Op.	1,115	826	1.6%	74.1%	744	573	1.6%	77.0%	0.1%	2.9%
Second Op.	1,213	768	1.7%	63.3%	523	391	1.2%	74.8%	-0.6%	11.4%
Other	25,095	18,016	35.5%	71.8%	16,248	11,552	35.9%	71.1%	0.4%	-0.7%
Total	70,711	63,632	100.0%	90.0%	45,313	40,020	100.0%	88.3%	-	-1.7%

Notes: N = 116,024 cases. Percentages may not add up to 100% due to rounding.
 Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.



A subset of the most prevalent sequences is the intervention patterns that reached a successful resolution (first successful resolution). As Figure 25 shows, field nurse assignment as the sole intervention was the most prevalent sequence, with a successful resolution in 41,025 cases. This single intervention was also one of the sequences with the highest rates of successful resolution, at 99.3%. Of the remaining sequences with high rates of successful resolution, Surgery was a very prevalent disability management intervention; it is the first intervention in 5 of the 10 sequences most associated with a successful resolution although, in total these surgery cases represent only 5.9% of the universe of cases. Three of the 10 most prevalent sequences were also among the 10 sequences with the highest rates of successful resolution.

Figure 25: Successful resolution rate of the 10 most prevalent unique sequences overall



Notes: N = 116,024.

Average successful resolution rate = 89.3% (dashed line).

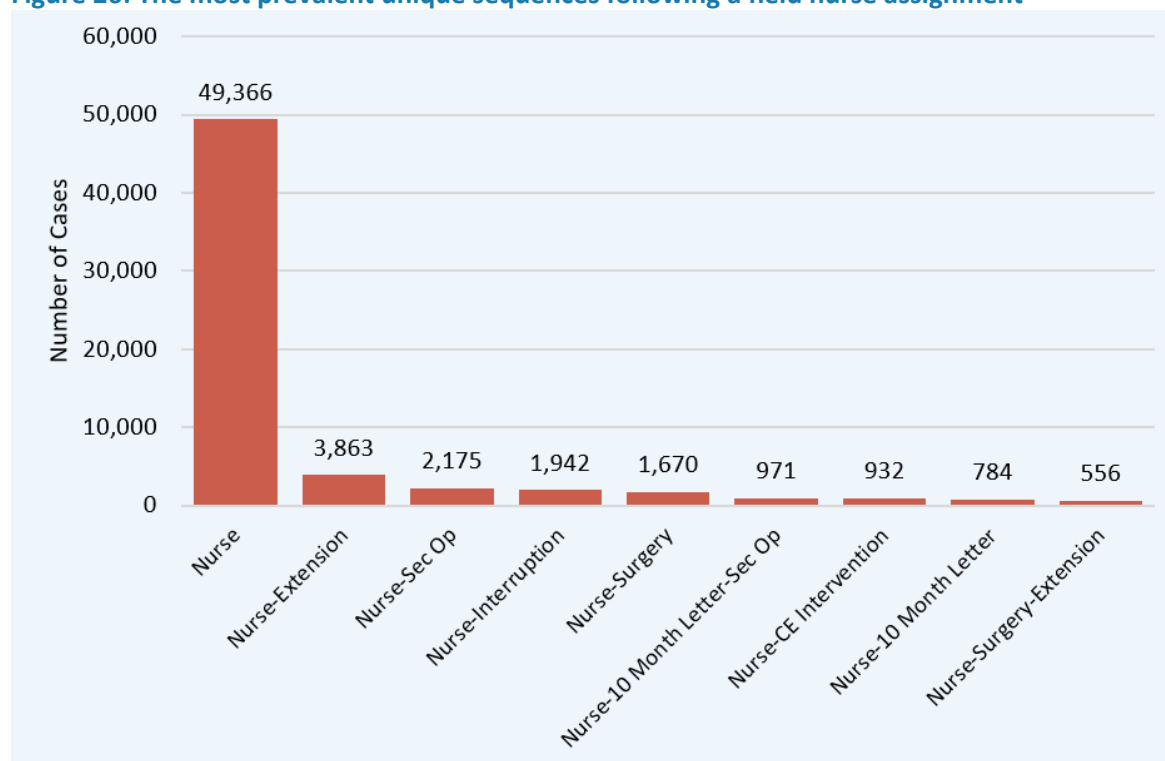
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

4.2 FIELD NURSE ASSIGNMENT POLICY

The study team then focused on the sequences of care that followed a field nurse assignment and a second opinion evaluation. This section examines all cases following a field nurse assignment, including those that had interventions prior to the field nurse being assigned. As such the case counts in the tables in this section do not match those in Table 1. The 9 most prevalent sequences following a field nurse assignment represent 62,259 cases in the study (Figure 26). Field nurse assignment as the sole intervention accounted for 58.2% of total cases. Among the remaining top 9 most prevalent interventions, no other intervention accounted for more than 5% of the total number of cases.



Figure 26: The most prevalent unique sequences following a field nurse assignment



Note: Total N = 84,795; 61,245 cases displayed.
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

The policy change accounts for some differences in the distribution of intervention patterns following a field nurse assignment. In particular, Nurse (the first sequence from the left in Figure 26) was slightly more prevalent before the policy change than after the policy change, with 60.6% and 54.8% of the cases, respectively (Table 2). Nurse–Extension also shows an increase in the percentage of cases, from 3.6% before the policy change to 5.9% after the policy change.

Two intervention patterns show a dramatic shift in the number of cases before and after the policy change. The Nurse–Interruption sequence, decreased from 1,922 cases before the policy change to only 20 cases after the policy change. (See Table 2, changes in total counts in line four). The Nurse–CE Intervention sequence increased from only 9 cases before the policy change to 923 cases after the policy change.

Additionally, when comparing the successful resolution rates of unique sequences before and after the policy change, we found that quite a few of the nurse-assignment sequences showed greater than 1 percentage point increases or decreases in successful resolution rates. Nurse–10-Month Letter–Second Opinion, Nurse-Interruption, and Nurse–CE Intervention showed decreases of 5.4 percentage points, 3.8 percentage points, and 1.6 percentage points, respectively, while Nurse-Second Opinion and Nurse-Surgery-Extension increased their successful resolution rates by 2.6 percentage points and 1.5 percentage points, respectively. (See the last column in Table 2.)



Table 2: The most prevalent unique sequences following a field nurse assignment, before and after the policy change

Sequence	Before Policy Change				After Policy Change				Difference	
	Total count	Count with successful resolution	% of total	% success	Total count	Count with successful resolution	% of total	% success	% of total	% success
Nurse	30,490	30,245	60.6%	99.2%	18,876	18,735	54.8%	99.3%	-5.8%	0.1%
Nurse–Extension	1,830	1,794	3.6%	98.0%	2,033	1,996	5.9%	98.2%	2.3%	0.1%
Nurse–Second Opinion	1,289	946	2.6%	73.4%	886	673	2.6%	76.0%	0.0%	2.6%
Nurse–Interruption	1,922	1,899	3.8%	98.8%	20	19	0.1%	95.0%	-3.8%	-3.8%
Nurse–Surgery	838	815	1.7%	97.3%	832	814	2.4%	97.8%	0.8%	0.6%
Nurse–10-Month Letter–Second Opinion	311	150	0.6%	48.2%	660	283	1.9%	42.9%	1.3%	-5.4%
Nurse–CE Intervention	9	9	0.0%	100.0%	923	908	2.7%	98.4%	2.7%	-1.6%
Nurse–10-Month Letter	373	336	0.7%	90.1%	411	371	1.2%	90.3%	0.5%	0.2%
Nurse Surgery–Extension	218	214	0.4%	98.2%	338	337	1.0%	99.7%	0.5%	1.5%
Other	11,771	-	23.4%	-	8,590	-	24.9%	-	1.5%	-
Total	50,340	-	100.0%	-	34,455	-	100.0%	-	-	-

Notes: N = 84,795 cases. Percentages may not add up to 100% due to rounding.

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.



Figure 27 shows that of the 84,795 cases following a field nurse assignment (including those that had interventions prior to the field nurse being assigned), 89.8% were associated with a successful resolution (76,121 cases). Among the 9 most prevalent sequences, 7 exceeded the benchmark of 89.8%. The two exceptions were Nurse–Second Opinion, with a 74.4% rate, and Nurse–10 Month Letter–Second Opinion, with a 44.6% rate.

Figure 27: Successful resolution rate of the most prevalent unique sequences following a field nurse assignment



Notes: N = 84,795. Average successful resolution rate for sequences following a field nurse = 89.8% (dashed line).

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

The rate of successful resolution for the sequence with the largest number of cases, Nurse as the sole intervention, was virtually unchanged (Table 2). One of the clear differences between the successful resolution rates of the most prevalent intervention patterns overall and the successful resolution rates of the most prevalent intervention patterns following a field nurse assignment is the relatively small number of cases associated with field nurse sequences aside from the two largest sequences: Nurse (close to 50,000 cases) and Nurse–Extension (with nearly 4,000 cases). The sequences that include a 10-month letter and/or a second opinion evaluation had the lowest successful resolution rates among the most prevalent intervention patterns following a field nurse assignment. The following sequences had changes greater than 1 percentage point after the policy change compared with before the policy change:

- Nurse–Interruption: Decreased from 98.8% to 95.0%
- Nurse–Second Opinion: Increased from 73.4% to 76.0%
- Nurse–Surgery–Extension: Increased from 98.2% to 99.7%
- Nurse–10-Month Letter–Second Opinion: Increased from 51.8% to 57.1%

4.3 SECOND OPINION EVALUATION

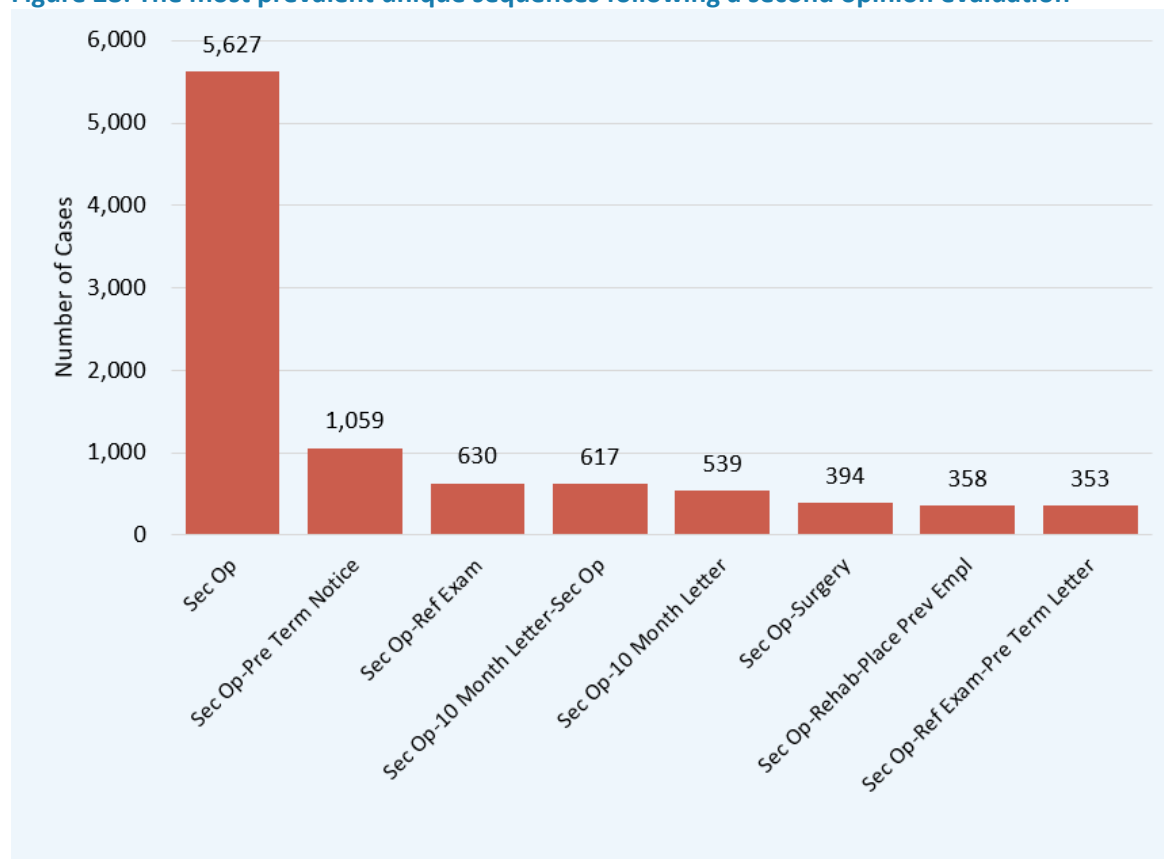
The following discussion examines the cases that were eligible for a second opinion evaluation (27,564 cases). This section examines all cases following a second opinion evaluation, including those that had



interventions prior to the second opinion. As such the case counts in the tables in this section do not match those in Table 1.

A total of 21,308 eligible cases received a second opinion evaluation and, of these, 12,269 cases reached a successful resolution (Figure 28). Of the eligible cases, the most prevalent sequence was a second opinion evaluation as the sole intervention and without a successful resolution (15.2% of 21,308 cases). Similar to the findings on field nurse assignment, the frequency and distribution of the intervention patterns are almost the same for the most prevalent unique sequences following a second opinion evaluation as for those that had a successful resolution.

Figure 28: The most prevalent unique sequences following a second opinion evaluation



Notes: N =21,308.

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

The rate of successful resolution for the sequence with the largest number of cases—Second Opinion as the sole intervention—increased from 23.9% of eligible cases before the policy change to 30.3% after the policy change. The sequences Second Opinion–10-Month Letter–Second Opinion and Second Opinion–10-Month Letter increased by 2.5% and 2.1%, respectively. The remaining sequences shown in Table 3, excluding “other,” had changes of less than 2 percentage points after the policy change compared with the period before the policy change.



Table 3: The most prevalent unique sequences following a second opinion evaluation, before and after the policy change

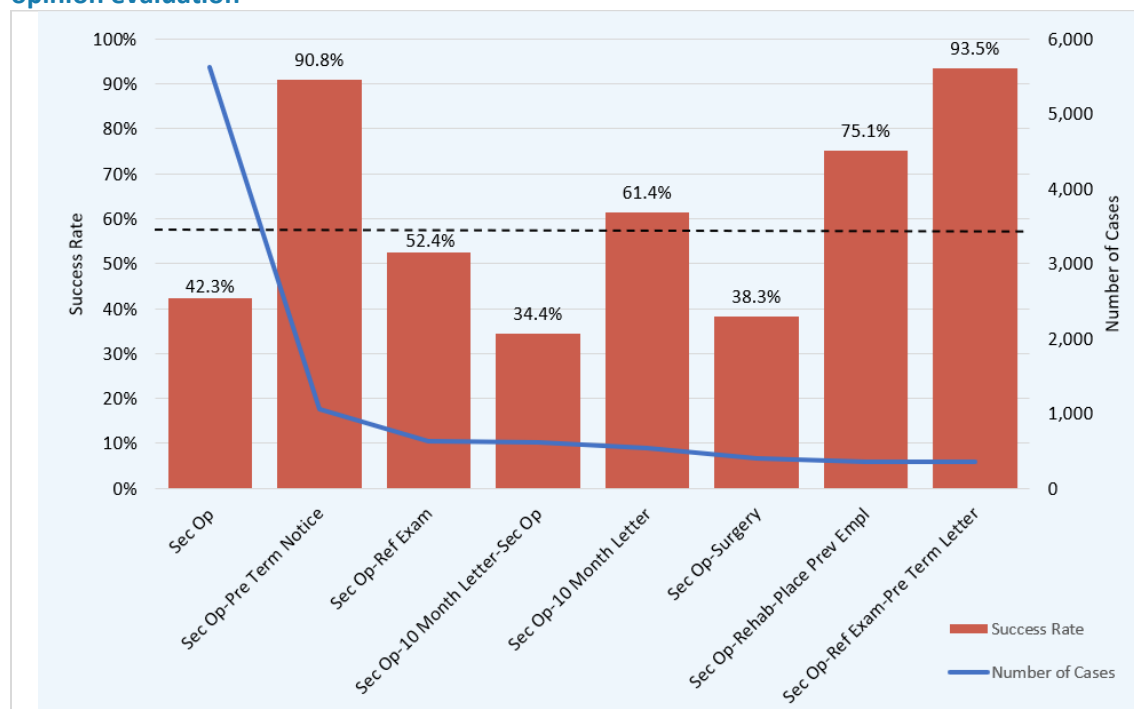
Sequence	Before Policy Change		After Policy Change		% Difference
	N	% of cases	N	% of cases	
Second Opinion	3104	23.90%	2523	30.30%	6.40%
Second Opinion–Pre-Term Notice	706	5.40%	353	4.20%	-1.20%
Second Opinion–Ref Exam	472	3.60%	158	1.90%	-1.70%
Second Opinion–10-Month Letter–Second Opinion	251	1.90%	366	4.40%	2.50%
Second Opinion–10-Month Letter	222	1.70%	317	3.80%	2.10%
Second Opinion–Surgery	144	1.10%	250	3.00%	1.90%
Second Opinion–Rehab–Placement at Previous Employer	193	1.50%	165	2.00%	0.50%
Second Opinion–Ref Exam–Pre-Term Letter	293	2.30%	60	0.70%	-1.50%
Other	7,594	58.50%	4,137	49.70%	8.80%
Total	12,979	100.00%	8,329	100.00%	

Notes: N =21,308. Percentages may not add up to 100% due to rounding.

Source: Federal Employees’ Compensation Act, FECA Claims Database, 2006–2017.

As Figure 29 shows, only 4 of 10 most prevalent unique sequences following a second opinion evaluation exceeded the benchmark of 57.2%, including Second Opinion–Pre-Term Notice, Second Opinion–Referee Exam–Pre-Term Letter, Second Opinion–Letter, and Second Opinion–Rehab Place Previous Employer. The sequence Second Opinion–10 Month Letter–Second Opinion had the lowest successful resolution rate.

Figure 29: Successful resolution rate of the most prevalent unique sequences following a second opinion evaluation





Notes: N =21,308. Average successful resolution rate = 57.2%.

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

Six sequences following a second opinion evaluation had *lower successful resolution rates* after the policy change than before (Table 4). The four most affected sequences were Second Opinion–Referee Exam; Second Opinion–Referee Exam–Pre-Termination Letter; Second Opinion–10-Month Letter; and Second Opinion–Surgery. The differences in these successful resolution rates before and after the policy change were all larger than 10 percentage points:

- Second Opinion–Referee Exam: Decreased from 61.4% to 25.3%
- Second Opinion–Referee Exam–Pre-Termination Letter: Decreased from 95.6% to 83.3%
- Second Opinion–10-Month Letter: Decreased from 69.8% to 55.5%
- Second Opinion–Surgery: Decreased from 45.8% to 34.0%

Table 4: Successful resolution rates of the most prevalent unique sequences following a second opinion evaluation, before and after the policy change

Sequence	Before Policy Change		After Policy Change		% Difference
	N	Success Rate %	N	Success Rate %	
Second Opinion	3,104	39.60%	2,523	45.70%	6.10%
Second Opinion–Pre-Term Notice	706	92.50%	353	87.50%	-5.00%
Second Opinion–Referee Exam	472	61.40%	158	25.30%	-36.10%
Second Opinion–10-Month Letter–Second Opinion	251	31.10%	366	36.60%	5.50%
Second Opinion–10-Month Letter	222	69.80%	317	55.50%	-14.30%
Second Opinion–Surgery	144	45.80%	250	34.00%	-11.80%
Second Opinion–Rehab–Placement at Previous Employer	193	74.60%	165	75.80%	1.10%
Second Opinion–Referee Exam–Pre-Term Letter	293	95.60%	60	83.30%	-12.20%
Other	7,543		4,137		
Total	12,979		8,329		

Note: N = 21,308 cases.

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.



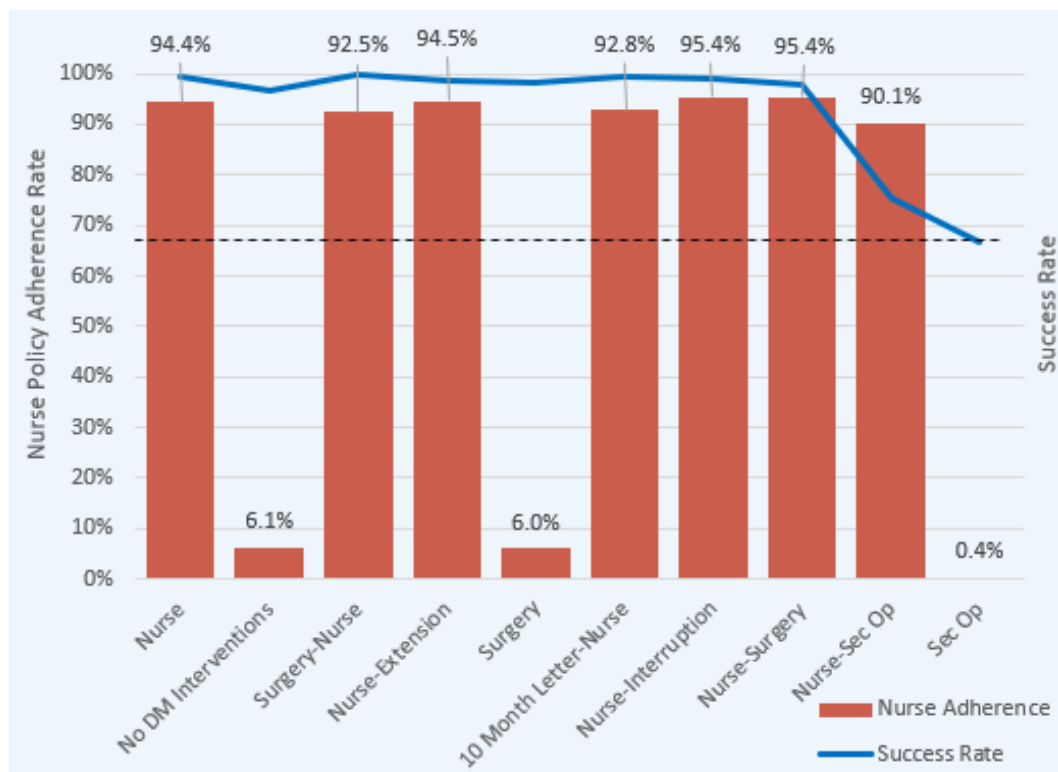
5 WHICH INTERVENTION PATTERNS ARE ASSOCIATED WITH HIGH ADHERENCE TO THE FIELD NURSE ASSIGNMENT AND SECOND OPINION POLICIES?

This section reviews adherence to the field nurse assignment and second opinion evaluation policies. We begin with the most prevalent sequences that adhered or did not adhere to the policies, and we note any shifts that may have occurred before and after the policy change. Next, we examine the most common sequences as identified in Section 4.1 and report their rates of adherence and successful resolution.

5.1 INTERVENTION PATTERNS ASSOCIATED WITH ADHERENCE TO THE FIELD NURSE ASSIGNMENT POLICY

In general, the most prevalent sequences also demonstrated high adherence to the field nurse assignment policy, with 7 of the 10 most prevalent sequences exceeding the average for the population by at least 25 percentage points. Cases without a disability management (DM) intervention, and with Surgery or Second Opinion as the sole interventions were exceptions, with adherence rates of 6.1%, 6.0%, and 0.4%, respectively (Figure 30). Despite not having “Nurse” in their sequence names, these cases most likely complied with the field nurse assignment policy because they received a field nurse after they had a successful resolution. With the exception of No DM Interventions, Nurse–Second Opinion, and Second Opinion as the only intervention, the successful resolution rates of these sequences all exceeded 98%.

Figure 30: Field nurse assignment policy adherence rates of the most prevalent sequences



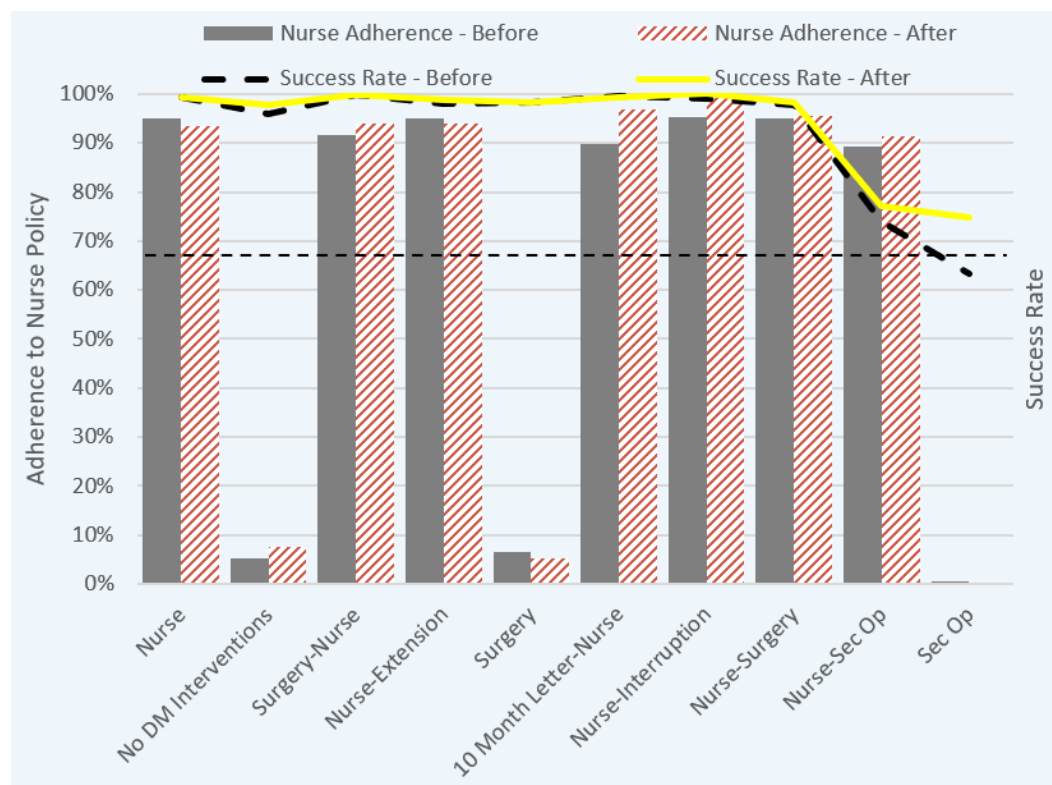
Notes: N = 116,024. Solid blue line = successful resolution rate. Global average rate of adherence to field nurse assignment policy = 67.9% (dashed line).

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.



Consistent with the overall increase, adherence to the field nurse assignment policy increased after the policy change in 6 of the 10 most prevalent sequences. The sequence 10-Month Letter–Nurse increased from 89.9% adherence before the policy change to 97.0% after the policy change (Figure 31). The adherence rate of the Nurse–Interruption sequence increased from 95.4% before the policy change to 100% after the policy change, but the number of such sequences decreased from 1,535 to 7. The adherence rate of the sequence No DM Interventions increased from 5.3% to 7.5%. Where the adherence rate of sequences decreased, they all decreased by less than one percentage point.

Figure 31: Field nurse assignment policy adherence rates of the most prevalent sequences, before and after the policy change



Notes: N before policy change = 70,711 (black line); N after policy change = 45,313 (yellow line).

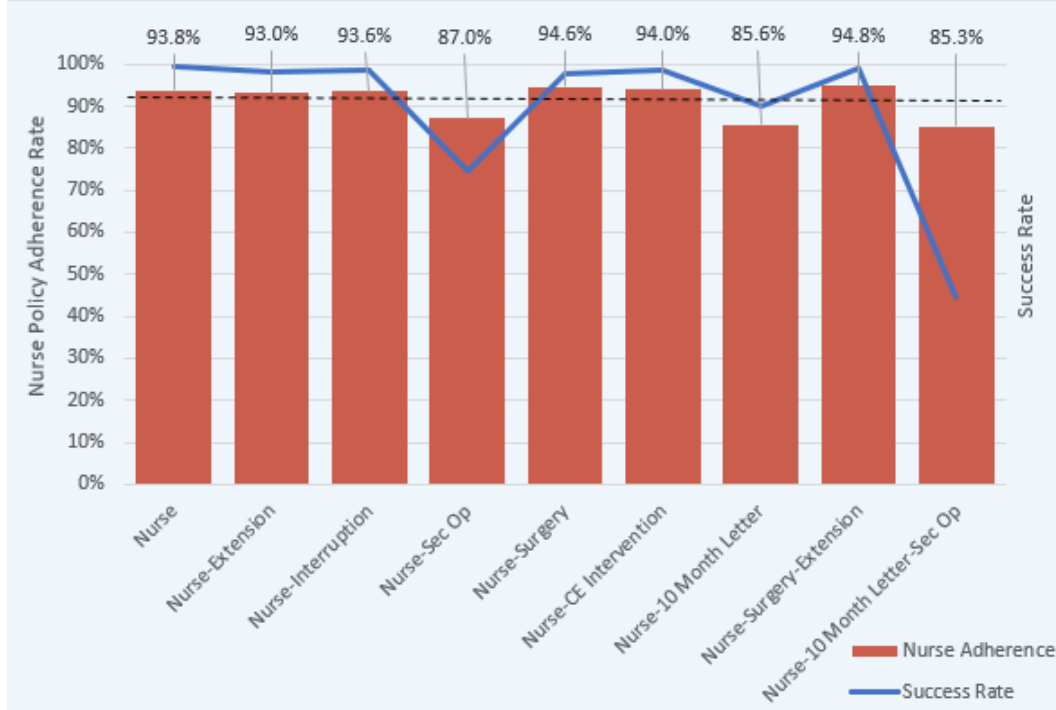
Global average rate of adherence to field nurse assignment policy = 67.9% (dotted line).

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

The rates of adherence to the field nurse assignment policy of the most prevalent sequences following a field nurse assignment exceeded the 67.9% global average rate. Specifically, 7 of the 10 most prevalent sequences following a field nurse exceeded the adherence rate for all sequences following a field nurse by an average of 25 percentage points. The exceptions were Nurse–Second Opinion, Nurse–10-Month Letter, and Nurse–10 Month Letter–Second Opinion (Figure 32). These three sequences also had lower successful resolution rates than the average rate of all sequences following a field nurse assignment.



Figure 32: Adherence rates of the most prevalent sequences following a field nurse assignment



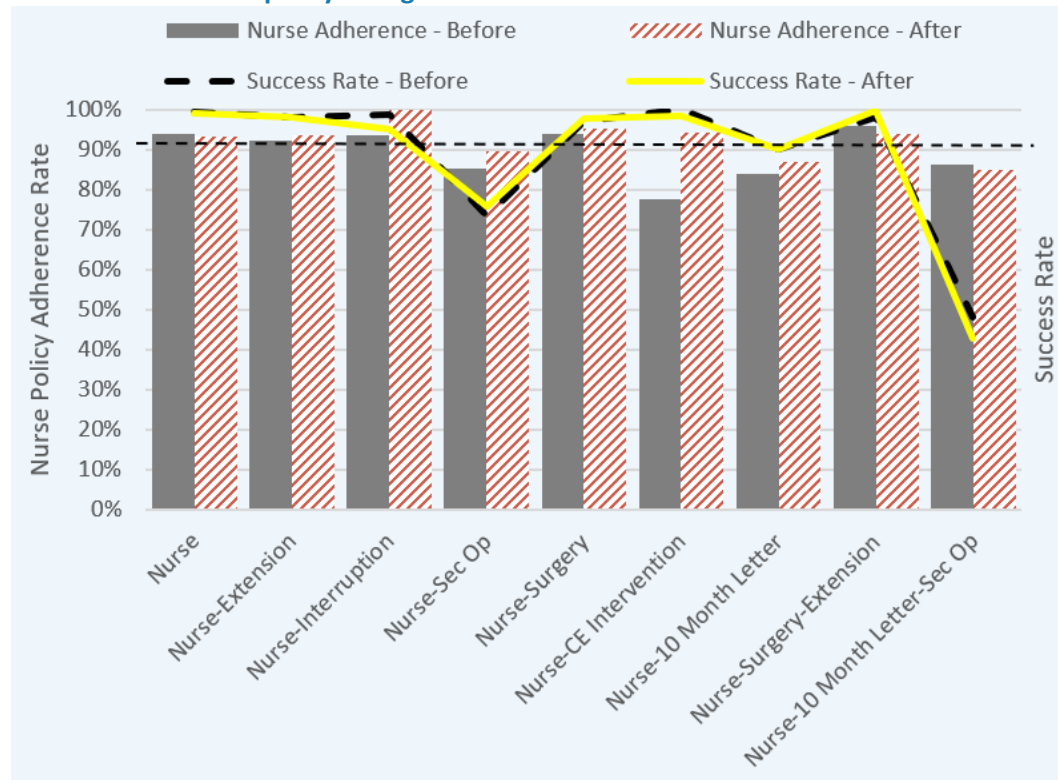
Notes: N = 84,795. Average adherence rate for sequences following a field nurse = 91.5% (dashed line).

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

Less notable than changes in the rates of adherence to the field nurse assignment policy is the shift in the number of cases that belong to each sequence. Nurse–Interruption cases decreased from 1,922 cases before the policy change to 20 cases after the policy change. Nurse–CE Intervention cases increased from 9 cases before the policy change to 923 cases after the policy change. These two sequences account for the largest changes in the rates of adherence to the field nurse assignment policy before and after the policy change, increases of 6.5% and 16.4%, respectively (Figure 33).



Figure 33: Adherence rates of the most prevalent sequences following a field nurse assignment, before and after the policy change



Notes: N before policy change = 50,340, N after policy change = 34,455.

Average adherence rate of sequences following a field nurse = 91.5% (dashed line).

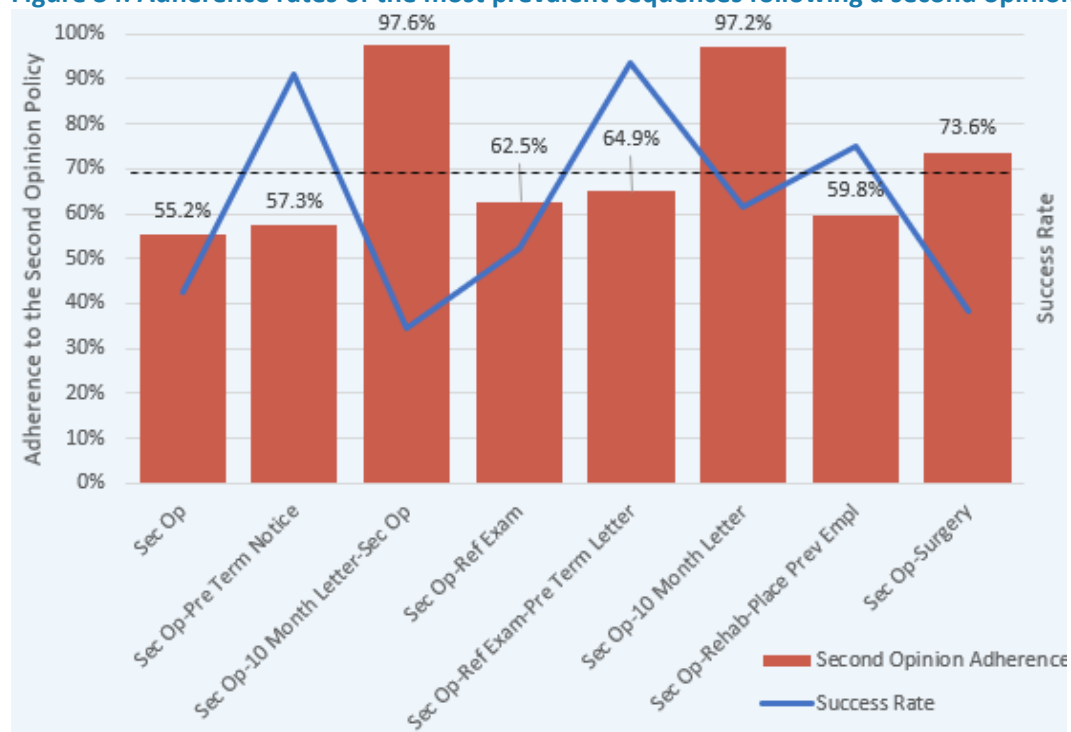
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.



5.2 INTERVENTION PATTERNS ASSOCIATED WITH ADHERENCE TO THE SECOND OPINION EVALUATION POLICY

Unlike the sequences following a field nurse assignment, the majority (5 out of 8) of the most prevalent sequences following a second opinion had adherence rates below the average rate for all sequences following a second opinion evaluation (69.7%, see dotted line in Figure 34). Of these, the sequence with Second Opinion as the sole intervention had the lowest adherence rate. For the eight most prevalent sequences, policy adherence had little association with successful resolution. For instance, the sequence Second Opinion–10-Month Letter–Second Opinion and the sequence Second Opinion–10-Month Letter had adherence rates greater than 97%, but their successful resolution rates were 34.4% and 61.4%, respectively. In contrast, Second Opinion–Referee Exam–Pre-Termination Letter had a 64.9% adherence rate but a 93.5% successful resolution rate, and Second Opinion–Pre-Termination Notice had a 57.3% adherence rate but a 90.8% successful resolution rate.

Figure 34: Adherence rates of the most prevalent sequences following a second opinion evaluation



Notes: N = 21,308. Average adherence rate of eligible cases with sequences following a second opinion = 69.7% (dashed line). Average success rate = 51.9%.

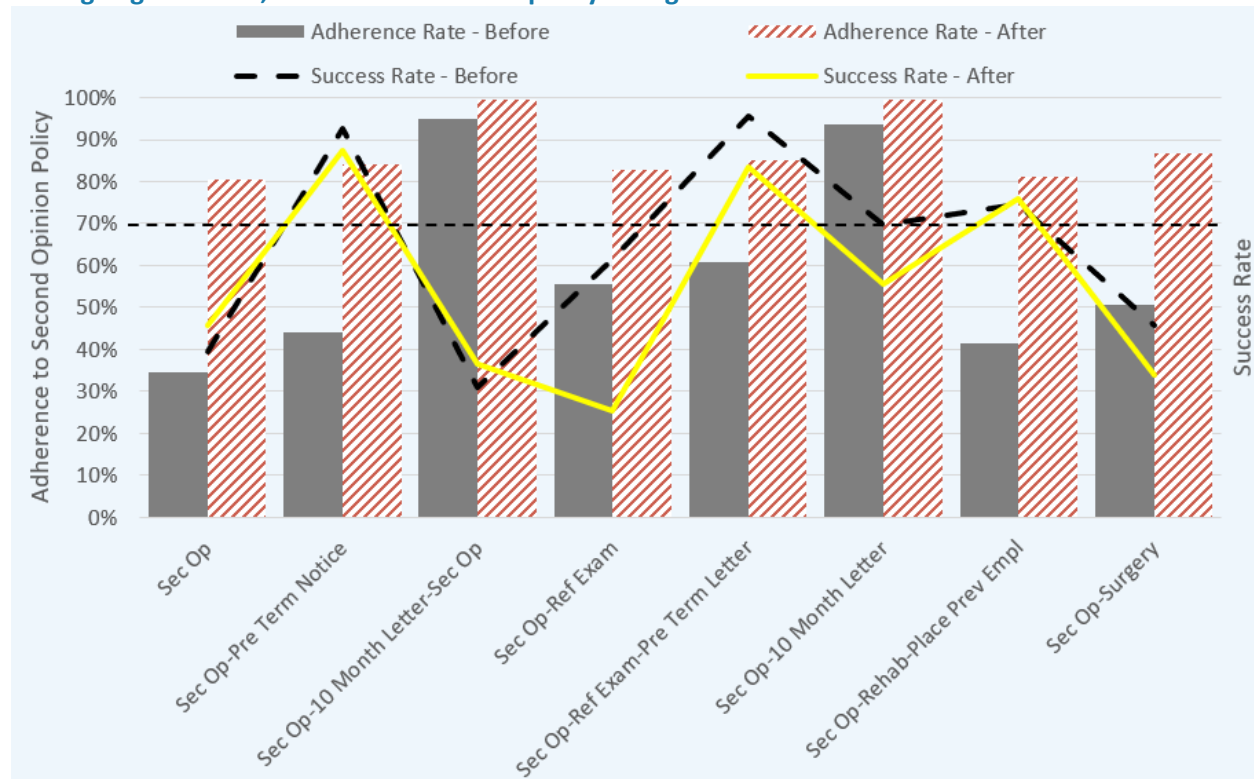
Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.

Consistent with the results shown in Section 3, the rates of adherence to the second opinion evaluation policy increased among the most prevalent sequences following a second opinion evaluation in the eligible cases (Figure 35). Three of the eight most prevalent sequences increased by more than 40



percentage points, and another three increased by more than 25 percentage points. The exceptions were Second Opinion–10-Month Letter–Second Opinion and Second Opinion–10-Month Letter.

Figure 35: Adherence rates of the most prevalent sequences following a second opinion evaluation among eligible cases, before and after the policy change



Notes: N before policy change = 12,979, after policy change = 8,329.

Average adherence rate of eligible cases with sequences following a second opinion = 69.7% (dashed line).

Source: Federal Employees' Compensation Act, FECA Claims Database, 2006–2017.



6 LIMITATIONS

Several important caveats should be kept in mind when reviewing the results of this study. These are discussed below.

6.1 DESCRIPTIVE STATISTICS

The descriptive statistics used in this report are useful in detecting broad patterns and trends in the data. However, the method is not granular enough to distinguish whether a policy is helping one subpopulation but not others. For instance, the increase in claimants who received a second opinion evaluation may also mean that the claimants who received a second opinion evaluation after the policy change had a different mix of characteristics than those who received a second opinion evaluation before the policy change.

Similarly, 46 different outcomes (37 return-to-work outcomes and 9 non-return-to-work outcomes) had a successful resolution, ranging from full-time return to work with no loss in wage-earning capacity to declined benefits. If an injured worker who was assigned a field nurse made a full recovery, when the worker would otherwise have returned to work at reduced capacity, that outcome would not appear in the results as an increase in successful resolution. Rather, it would be viewed as a shift from one category of successful resolution to another, which was not a focus of this report.

6.2 SELECTION EFFECTS

Selection effects occur when subjects are included or excluded in a way that the sample is not representative of the full population. Such effects can bias analytical results. Each of our analyses was influenced by selection effects:

- Certification dates were unavailable for claimants who were not assigned a field nurse, and therefore the sample did not cover the full population of injured workers. Because of this omission, it is unclear to what extent the date used as an alternate measure—the disability management start date—was aligned with the certification date.
- To create the population subject to the second opinion evaluation policy, we eliminated from the analysis cases that had reached a successful resolution within 12 months. This biased the results against a higher successful resolution rate for the second opinion evaluation population because claimants were deselected based on their having achieved a successful resolution.
- Sequences also had a selection issue. Injured workers who exit disability management after only a few interventions are not eligible for services reserved for injured workers with extended periods of disability. Hence, higher rates of successful resolution for certain sequences may have occurred not because the sequences were more effective, but because cases that were not resolved by that sequence may have received additional interventions, which then placed them into different sequences. For instance, cases that are assigned a field nurse and do not proceed directly to successful resolution might be chosen for rehabilitation services. A lower successful resolution rate for Nurse–Rehabilitation does not mean that rehabilitation is ineffective, especially compared to sequences where the sole intervention is seeing a field nurse; rather, the selection of cases for rehabilitation signals that such cases are less likely to end in successful resolution.



7 CONCLUSIONS

The Division of Federal Employees’ Compensation, as a result of the policy change in FY 2013, requires prompt field nurse assignment in all cases in disability management and a second opinion evaluation (Code MSI) by the 12-month mark in all total disability cases. This report provides a descriptive analysis of the policy change and its association with successful case resolution. The study also examined other features of successful resolution: time to first successful resolution and case length. In addition, the study analyzed the sequence of interventions, beginning with entry into disability management, and the intervention patterns following a field nurse assignment and a second opinion evaluation. Table 5 summarizes the study findings by research question.

Table 5: Key study findings

Research Question	Findings
<p>1. How prevalent is a successful resolution?</p>	<ul style="list-style-type: none"> • The successful resolution rate was 89.3% between 2006 and 2017. • The rate of successful resolution declined from 90.0% before the policy change to 88.3% after the change. • The median time to first successful resolution and median case length both increased over time, but the timing of the increase did not directly coincide with the policy changes.
<p>2. How prevalent are the field nurse assignment and second opinion evaluation codes? How does the timing of field nurse assignment and second opinion evaluations compare before and after the policy change?</p>	<p>Field nurse assignment</p> <ul style="list-style-type: none"> • Cases that received a field nurse assignment within the targeted timeframe had a higher successful resolution than cases that did not, though the difference was less pronounced after the policy change. The policy change may have indirectly lowered successful resolution rates of these interventions by adding cases that were not going to benefit from the intervention. <p>Second opinion evaluation</p> <ul style="list-style-type: none"> • Cases that met the second opinion evaluation policy had higher successful resolution rates than those that did not meet the policy, both before and after the policy change.
<p>3. What were the most prevalent intervention patterns associated with successful resolution, and at what frequency were specific interventions implemented?</p>	<p>Overall</p> <ul style="list-style-type: none"> • The 10 most prevalent intervention patterns represent about 65.2% of cases in the study. Three interventions—Nurse, No DM Intervention, and Surgery–Nurse accounted for half of all cases where an intervention was provided. Minimal differences were found in the distribution of interventions before and after the policy change. The successful resolution rate was very similar among the 10 most prevalent interventions. The exception was Second Opinion, which increased by 11 percentage points. <p>Nurse Assignment Policy</p> <ul style="list-style-type: none"> • The most common sequence of care following a field nurse assignment was Nurse–Success (a field nurse assignment as the sole intervention followed by a successful resolution). This sequence was slightly more prevalent before the policy change than after the policy change.



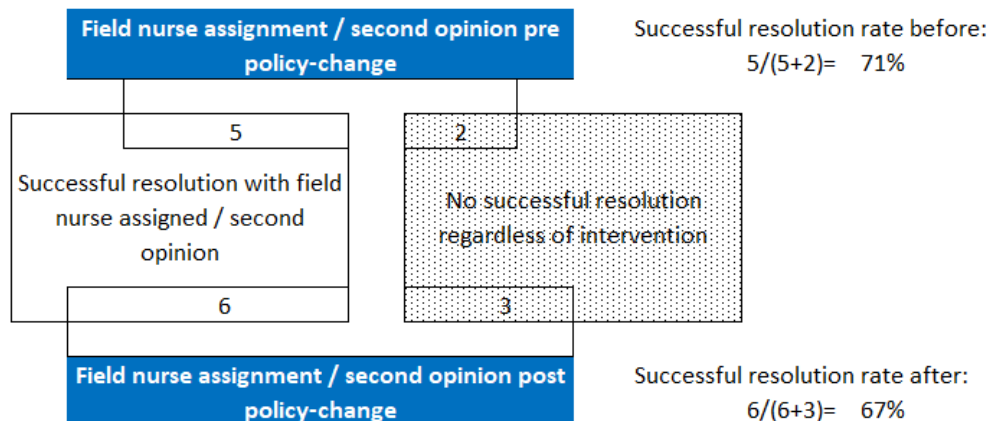
Research Question	Findings
4. Which intervention patterns are associated with high adherence to the field nurse assignment and the second opinion evaluation policies?	<ul style="list-style-type: none">The most prevalent sequences also demonstrated high adherence to the field nurse assignment policy, with 7 of the 10 most prevalent sequences exceeding the average rate for the population by at least 25 percentage points.The rates of adherence to the second opinion evaluation policy increased among the most prevalent sequences following a second opinion evaluation in the eligible cases, including three sequences that increased by more than 40 percentage points.

7.1 FURTHER RESEARCH

The findings in this report suggest several potential avenues for further investigation:

- Why did successful resolution rates not increase after the field nurse assignment policy change? The data indicate that changes in the successful resolution rates were seen for claimants who did not receive these interventions before the policy change, but who did so afterward. In some instances, the policy changes may have indirectly lowered successful resolution rates of these interventions by adding cases that were not going to benefit from the intervention. This idea is illustrated in Figure 36 below. In this simplified example, prior to the policy change there were 7 cases that received a field nurse, of which 5 had the potential for successful resolution with treatment, and 2 did not. Therefore, the successful resolution rate prior to the policy change is 71%. In the same example, after the policy change, there are now nine cases that get a field nurse, of which six had the potential for successful resolution with treatment, but three did not. As such, the successful resolution rate decreased to 67% despite the expansion of interventions.

Figure 36 Why successful resolution rates may not increase after policy change – Numbers Used for Illustrative Purposes Only



Note: It is not known how many of the cases would have concluded in a successful resolution without the intervention; as a result, the numbers shown in this figure are not based on actual data and are shown for illustrative purposes only to help explain the process.

- What were the characteristics of these claimants? These claimants affected by the policy who had lower successful resolution rates may be very different (types of injuries, demographics) from the rest of the population. What were their outcomes? Propensity score analysis can help identify these types of claimants moved from one category to the other and what were the outcomes of comparable claimants.



- Could factors other than the policy change account for changes in successful resolution rates? As noted in the executive summary, the report's findings did not account for potential changes in case mix (demographics, type of injury), timing of the interventions, quality in disability management interventions, or regional variation. Furthermore, changes in employing agency ability or willingness to take back employees with restrictions might have had an effect, as could differences in job market opportunities. A few employing agencies implemented early interventions that, if successful, would have reduced the population entering disability management with more remediable injuries, such that over time DFEC would be dealing with cases more difficult to resolve.
- Who benefited the most and who benefited the least? The policy change may have had different effects on subpopulations of claimants. Multivariate regressions using interaction terms can distinguish the effects of receiving the treatment on claimants with specific characteristics, such as cause or type of injury. A more nuanced understanding of the variation in outcomes due to individual characteristics can assist decision makers in directing resources to the claimants most likely to benefit. This type of profiling could be based on a wide range of characteristics and probabilities of successful resolution.
- Why did claimants who did not receive a second opinion evaluation after 12 months experience a higher rate of successful resolution than those who did receive a second opinion evaluation? There are likely differences in a subset of the eligible population that dissuade claims examiners from enforcing the second opinion evaluation policy. For example, cases involving injuries that were assigned a nature code of pain were associated with lower successful resolution rates. These types of injuries were more prevalent in cases that received a second opinion evaluation compared to cases that did not (12.6% vs. 7.5%).²⁰
- What happened after the first successful resolution? For simplicity, this study only examined interventions and successful resolution rates up to the first successful resolution if there was one. However, it is not uncommon for a claimant to return to work and then suffer a reversal that leads to a prolonged work disability. Encompassing outcomes beyond the first success could further deepen our understanding of the effectiveness of policies.

This study conducted descriptive analyses of global successful resolution rates and the paths to a successful resolution. The discussion above highlights the benefits of incorporating demographics, type of injury, and timing of the interventions into a further study. These additions would provide more targeted approaches to increase successful resolution rates. The groundwork on this study and a similar recent OWCP study suggest some possible directions for further research given the time and resources. The data needed for such research are available.²¹

²⁰ These populations were generally very similar. This is the only characteristic with at least a 3% difference.

²¹ Summit Consulting, *Return-to-Work Outcomes for Federal Employees in the Office of Workers' Compensation Disability Management Program*, submitted September 2018, <https://www.dol.gov/sites/dolgov/files/OASP/legacy/files/OWCP-External-Report-DOL.pdf>.



Appendix A DESCRIPTION OF THE ANALYTIC DATA FILE

This appendix describes the databases used to compile and link the data used for this study. In addition, this appendix describes the data filtering steps taken to select cases for the various analyses.

Compiling the Data for Analysis

The data for this study comes from two DFEC internal databases:

- Case management system—This system tracks every federal disability claim, including claimants who returned to work without any interventions scheduled by DFEC claims examiners.
- Disability management system—This system tracks all interventions and activities associated with claimants who entered DFEC’s disability management system. Records in this system are a subset of the first, and, in general, only more serious cases of disability are added to the disability management system.

For this study, DFEC analysts extracted all cases in Disability Management with activity from 2005 to 2017. Data from both the case management and disability management system are stored in relational databases. Table 6 shows the database tables used for this study.

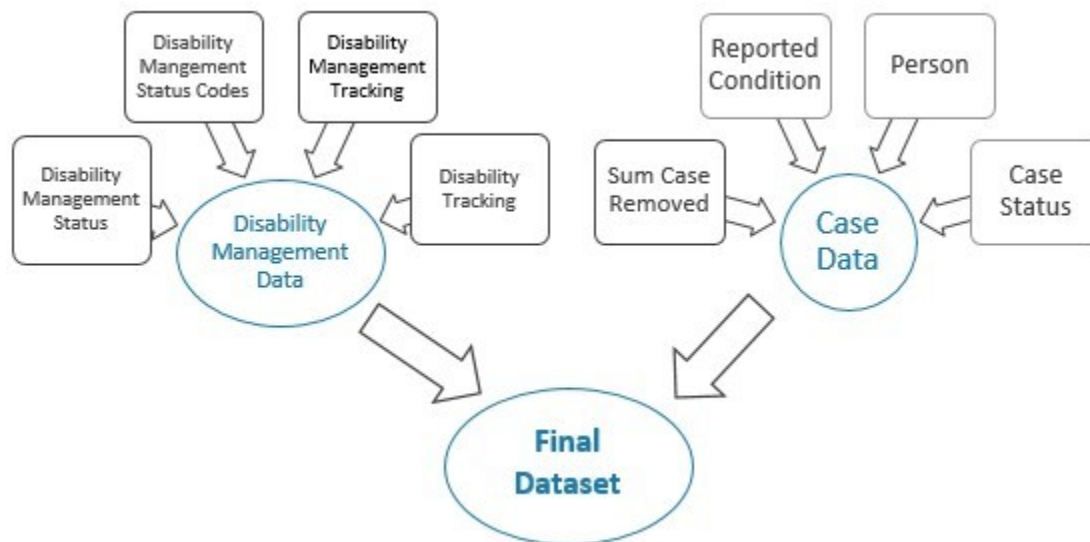
Table 6: Federal Employees’ Compensation Act (FECA) tables used for analysis

Database	Table	Description
Disability and Case	Disability Tracking	Links case IDs to all associated disability tracking IDs
Disability	Disability Management Tracking	The date the case closed and information about expected return-to-work time
Disability	Disability Management Status	Codes (status codes) for DFEC activities and the date they occurred
Disability	Disability Management Status Codes	Descriptions for codes for DFEC activities reported in the Disability Management Status table
Case	Reported Condition	Information about nature of injury, cause of injury, and location of injury
Case	Sum Case Removed	Information about cases including DOL received date, case creation date, and other case characteristics
Case	Person Data	Claimant characteristics such as sex, birth date, age, and a death indicator
Case	Case Status	Information on the adjudication and pay status of each case

Figure 37 illustrates the process for compiling datasets to produce the final dataset. For the Disability Management data, Disability Tracking ID linked the datasets. For the Case data, Case ID linked the data. The dataset Disability Tracking contained both unique identifiers (Case ID and Disability Tracking ID), which the study used to merge the two datasets. This study focused on claimants who received disability management services; therefore, case-level data were included only for cases with disability management records.



Figure 37: Compilation of DFEC Data Tables



Data Filters

The study excluded certain observations to sharpen the focus on the population of interest. The following categories were removed from the sample, which left the 116,024 disability cases considered in this analysis:

- Cases that were marked closed before the track date, cases that had a successful resolution before the track date, or cases that were missing track dates, the case certification date, or the case certification alternate date, because these cases have incorrect data or are otherwise unable to be grouped and analyzed accurately by year cohort.
- Cases that were received prior to 2006, to focus on claimants who had been part of the DFEC's disability management system in more recent years.
- Cases that had a disability management tracking date prior to 2006, or if that was missing, the date the case was certified, or the certification alternate date, because cases where coverage began in the year 2005 proved to be significant outliers in several aspects.



Appendix B INTERVENTION TYPES

The intervention codes, groupings and descriptions as used in this report are summarized in Table 7 below.

Table 7: Intervention descriptions and codes

Intervention code	Intervention description	Intervention group as used in report	Group description
MIN	Medical interruption of DM activity	Interruption	A medical intervention has been interrupted by a non-work-related medical event or condition, or a specific intervention is temporarily paused while a different intervention is undertaken.
NIN	Nurse interrupt		
RHX	Interrupted		
NIC	Nurse Intervention via CE	CE Intervention	The claim examiner contacted the nurse or rehabilitation counselor in order to direct them on further case actions.
RIC	Rehabilitation Intervention via CE		
MRI	Referee exam scheduled	Referee Exam	A third medical examination was scheduled for the claimant due to the opinion of the claimant's physician differing from that of OWCP's appointed physician.
MSI	Second opinion scheduled	Second Opinion	A second opinion examination for the claimant was scheduled.
NF3	30-day nurse extension granted	Extension	OWCP may extend the assignment of a nurse to a case if a significant milestone (e.g. imminent return to work, significant case change status is expected.)
NF6	60-day nurse extension granted		
NFE	30-day Nurse extension granted		
NFN	Referred to field nurse	Nurse	A field nurse was assigned to the claimant's case.
PRL	Pre-reduction notification sent	Pre-Reduction Letter	A 30-day notice of proposed reduction of benefits was sent to the claimant.
PTL	Pre-termination notification sent	Pre-Termination Letter	A 30-day notice of proposed termination of benefits was sent to the claimant.
RDP	Rehab Development Plan in Progress	Plan Development	Counselor developed a customized plan for services focused on placement with a new employer.
RHD	Plan Development		
RHN	Placement Previous Employer - Without Other Services	Placement at Previous Employer	A claimant returned to work with their previous employer.



Intervention code	Intervention description	Intervention group as used in report	Group description
RHW	Placement Previous Employer		
RHP	Placement New Employer	Placement at New Employer	Counselor assisted in placing the worker with a new employer if placement with a previous employer had failed.
RHR	Referred to rehab specialist	Rehab	A rehabilitation specialist has been assigned to a case.
RHT	In Approved Training	Training	The claimant has entered into an OWCP-approved vocational training program.
RLT	Eventual reduction via rehabilitation (letter sent by CE)	Rehab Reduction	A notification was sent to the claimant that their benefits will be reduced due to improvement in their medical condition.
TML	10 month letter issued	10 Month Letter	A claimant still in the disability management program ten months following their track date has been advised in writing that their previous employer is unable to accommodate them in a return to work.
NWL	Nurse Non-cooperation 30 day warning letter	Warning Letter	A warning letter was issued to the claimant of the consequences of non-cooperation with the field nurse or rehabilitation program.
RWL	Rehab non-cooperation 30 day warning letter		
NCN	Nurse Case Closed, claimant not cooperative	Non-Cooperation Termination	A case is closed with the possible reduction or suspension of benefits after a claimant is warned of the consequences of non-cooperation.
SUC	Suspension of comp for rehab/nurse noncooperation (sect 8113)		
SUR	Surgery authorized	Surgery	The claimant was approved for surgery.



Appendix C TYPES OF SUCCESSFUL RESOLUTION

The types of successful resolution are determined by the disability management status code. Table 8 shows the disability management status codes and the definitions that qualify as successful resolutions.

Table 8: Successful Resolution Codes

Code	Definition
CCL	LWEC Modification – Cost Savings
CCO	Benefits terminated, no continuing injury-related disability
CCT	Comp terminated/declined temp LD-10.500
CFC	Terminated, Fraud Conviction (against OWCP, USGOV)
CLW	Constructed LWEC decision
CRC	Reduction, Incarcerated due to Felony (Section 8148)
CSA	Sanctions for refusing suitable work (Sect 8106)
CSB	compensation not claimed
CAE	RTW, actual earnings LWEC
CFF	RTW DOI job or preestablished LWEC job
CFP	RTW Full-Duty Part-Time
CL\$	RTW Light Duty/Full Time (with wage loss)
CLF	RTW Light Duty/Full Time (without wage loss)
CLP	RTW Light Duty / Part Time
CNC	RTW Full Time in Non-Classified Position with no LWEC
CNL	RTW , not DOI job with 0 LWEC decision
CPS	RTW Private Sector - Not in Rehab
LFH	Hired through Labor for America
LFN	Hired but not through Labor for America
ML4	RTW via CE; Light Duty/4 hrs
ML6	RTW via CE; Light Duty/6 hrs
MLF	RTW via CE; Light Duty/Full Time
MLP	RTW via CE; Light Duty/Part Time
TNW	RTW temp LD w/wage loss-10.500
NFF	RTW DOI job or preestablished LWEC job via Nurse
NFP	RTW Full Duty/Part Time via Nurse
NL\$	RTW Light Duty/Full Time via Nurse (with wage loss)
NL4	RTW via Nurse; Light Duty/4 hrs
NL6	RTW via Nurse; Light Duty/4 hrs
NLF	RTW via Nurse: Light Duty/Full Time (without wage loss)
NLP	RTW via Nurse; Light Duty/Part Time
RFF	RTW DOI job or preestablished LWEC job via Rehab
RFP	RTW Full Duty/Part Time via Rehab
RHE	Employed – Previous Employer
RHS	Employed – Self employment
RHV	Employed via Assisted Reemployment
RL\$	RTW Light Duty/Full Time via Rehab (with wage loss)
RLF	RTW via Rehab: Light Duty/Full Time (without wage loss)
RLP	RTW via Rehab; Light Duty/Part Time
SCO	Schedule A RTW Other



Code	Definition
SCW	Schedule A RTW
TNX	Comp reduced/declined temp LD-10.500
CDJ	Obsolete – QCM Case Closed – Return to Work DOI Job
NC7	Obsolete – RTW via Nurse Intervention
NCH	Obsolete – Employed Via Nurse Intervention
NF4	Obsolete – RTW via Nurse; Full Duty/4 hrs



Appendix D ANCILLARY INTERVENTIONS

Table 9 shows the ancillary interventions that were not included in the sequence analysis.

Table 9: Ancillary Interventions

Code	Definition
ADO	Agency Declined to Offer Modified Job
CON	Conference completed
CPN	Permanent total disability decision
CRL	Recurrence, LWEC modification (TTD)
CRN	Recurrence/new injury following RTW Light Duty
CRR	COP Case Closed
DEA	Death of claimant
DEL	Delayed Development
DMA	DMA referral complete
DTC	Dual Track Closed
DTO	Dual Track Opened
IAE	Interim actual earnings (no formal WEC decision)
JOB	Job offer made
JOL	Suitable job offer letter issued
JON	Job Offer not Suitable
JOR	Job Offer Request - Work Restrictions to EA
JOW	Job Offer Withdrawn
LFC	Labor for America profile created
LFD	Labor for America profile deactivated
MDN	Medical Development Needed
MNR	Narrative report received
MRC	Referee report received
MRF	Referee follow-up taken
MRR	Referred to Scheduler for Referee
MSC	Second opinion report received
MSF	Second opinion follow-up taken
MSN	Second Opinion not Necessary per SCE
NCE	Discussion of Case between CE and Nurse
NCO	Nurse case closed
NCP	Referred to COP nurse
NIE	Nurse Interrupt Ended
NRC	Referred to CAP Nurse
NSN	Referred to staff nurse
NTN	Referred to TCM nurse
OIC	Other intervention by CE
OPM	Elected OPM benefits
PCR	No entitlement change following PR review
PRS	PRMS start
PRX	Pre-Reduction cannot be finalized
PTC	Post Triage Closure



Code	Definition
PTO	Post Triage Open
PTX	Pre-Termination cannot be finalized
QAP	Narrative report requested from physician
QEX	QCM Expired
QTP	QCM to PRM
RCL	Rehab case closed with no RTW
REA	Reconsideration Affirmed
RER	Reconsideration Requested
REV	Reconsideration Reversed
RFT	Remove From Tracking
RHA	Initial Interview Held
RHC	Returned to Claims Examiner
RHG	Assisted Reemployment Approved
RHI	Plan Approved
RHQ	Screened
RHZ	Post-Employment Services
RRC	Referred to Rehab counselor
RRS	RC closed - returned to RS
RS4	Obsolete - Closed Rehab'd - Previous Employer
RTR	Rehab case closed
SAI	SA expired, intervention, no LWEC
SAL	SA expired with LWEC
SAN	SA expired, no intervention, no LWEC
SCC	Schedule A Certified
SCD	Schedule A Services Declined
SCI	Schedule A Identified
SCN	Schedule A Closed (No RTW)
SCR	Schedule A Rejected
SRC	Staff Nurse Contract Referral
SRE	Referred for conference
SRO	Suspension Reopened
SUE	Suspension for no report of earnings/dependency (CA1032)
SUM	Suspension of comp for medical obstruction (sect 8123)
TCC	Triage COP Case
TCF	Triage Case Set to Active QCM via TPCUP Claim
TCQ	QCM-Triage To QCM-Open
TRC	Closed - Triage Case with Full Time RTW During COP
TRL	Transfer of case
TTD	Continuing total disability per SECOP/Referee
WTL	Valid WTLs in file - No RTW
WTX	Valid WTLs not in file