

**The Mortality Effects of Reduced Medicaid Coverage among International Migrants in Hawai'i (2012-2018)**

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## **Abstract**

**Introduction:** In March 2015 the State of Hawai‘i revoked coverage in the state Medicaid program for most Compact of Free Association (COFA) migrants who were non-blind, non-disabled, and non-pregnant. We study the impact of this policy change on mortality.

**Methods:** We compute quarterly crude mortality rates for COFA migrants, Whites, and Japanese-Americans from March 2012 to November 2018. We employ a difference-in-difference (DiD) research design to estimate the impact of the Medicaid expiration on log mortality rates.

**Results:** We see larger increases in COFA migrant mortality rates than White mortality rates after March 2015. By 2018, the increase was 43% larger for COFA migrants ( $p = 0.003$ ). Mortality trends over this period were similar for Whites and Japanese-Americans, who were not affected by the policy.

**Discussion** Mortality rates of COFA migrants increased after Medicaid benefits expired, despite the availability of state-funded premium coverage for private insurance and significant outreach efforts to reduce the impact of this coverage change.

## Introduction

The benefits of the Medicaid program are well-documented. The introduction of Medicaid in the 1960s and the expansion of Medicaid through the Affordable Care Act (ACA) have been shown to have reduced mortality (Goodman-Bacon, 2018; Miller et al., 2019). Given that providing Medicaid can save lives, it is important to ask what happens when coverage is scaled back. To answer this question, we study a vulnerable group that lost standard Medicaid coverage in 2015 in the State of Hawai‘i.

Under the Compact of Free Association (COFA), citizens from three nation-states located in the Pacific Ocean (the Republic of Palau, the Republic of the Marshall Islands, and the Federated States of Micronesia) are given free entry in the United States (US).<sup>1</sup> This is in exchange for US military access to their ocean territories and other benefits specified in the COFA. Under the compact, the US pledged to support these nations in health and other social investment infrastructure and COFA migrants are allowed unrestricted access to live and work in the US. However, at any level of poverty, COFA migrants are not eligible for federal Medicaid coverage under the 1996 Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA).

States are left to decide if they wish to support the Medicaid enrollment of COFA migrants with limited means. In March 2015, following a legal decision, the State of Hawai‘i revoked coverage in the state Medicaid program for non-blind, non-disabled, non-pregnant COFA migrants aged 18 to 64. Instead, individuals in this group could obtain Medicaid-subsidized private insurance in exchanges established by the ACA under either of the two market dominant health insurers in the State of Hawai‘i. Previous work has shown that healthcare utilization of COFA migrants declined as a result of the policy change (Halliday et al., 2019). Our study goal is to consider the impact on mortality.

## Methods

We use mortality data from the Department of Health in the State of Hawai‘i. We compute the total number of deaths in each three-month interval from March 2012 to November 2018, for three groups: migrants born in the Republic of the Marshall Islands or the Federated States of Micronesia (henceforth COFA migrants), as well as two groups born in the US: Whites and Japanese (henceforth White or Japanese-American). On average, there are 31 COFA deaths and close to 700 deaths among Whites and Japanese-Americans (each), per quarter. To compute crude mortality rates, we employ estimated population counts from the American Community Survey (ACS).

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<sup>1</sup> We use the term COFA “migrant” because they are technically classified as “non-immigrants,” but it should be noted that these are international and not domestic migrants.

A unit of observation is a year-quarter-ethnicity. We measure quarterly crude mortality rates starting in March 2012. This guarantees that one quarter ends in February 2015 and another begins in March 2015 so that the Medicaid expiration happened exactly between two quarters. Before March 2015, all COFA migrants could enroll in Medicaid at any point in the year. From March 2015 onward, COFA migrants between the ages of 18 and 64 could not enroll in Medicaid (unless they were blind, disabled, or pregnant) but had the option of enrolling in a subsidized private insurance plan available on the Healthcare Marketplaces set up by the ACA.

We calculate mortality rates across all ages in the analysis that follows, despite the fact that the Medicaid policy change officially only impacted those aged 18-64. We do this because, according to some reports, there was confusion in the COFA community about who became ineligible for Medicaid in March 2015, which possibly resulted in under-enrollment in Medicaid since then (Hofschneider, 2019). Accordingly, the Medicaid expiration may have impacted the coverage of individuals under 18 or over 64, who may not have been aware that they were still eligible for Medicaid following the policy change. In fact, previous work has shown that ER utilization for children declined as a result of this policy change (Halliday et al., 2019). It is also worth noting that, according to the ACS, about 95% of all COFA migrants are under age 65.

We employ a standard difference-in-difference (DiD) research design to estimate the impact of the Medicaid policy change on log mortality rates. To check for parallel trends across ethnicities before the policy change, we use an event-study analysis, controlling for ethnicity and year-quarter fixed effects. We estimate a linear model using Ordinary Least Squares, but results are similar when we use a Poisson or Negative Binomial model using number of deaths as our outcome.

## **Results**

We find that mortality rates of COFA migrants increased relative to Whites after Medicaid benefits expired (Figure 1). In the years before the policy change, the changes in mortality rates relative to 2012 were similar for Whites and COFA migrants, offering support for the validity of the parallel trends assumption. Starting in March 2016, we see that COFA migrant mortality rates increased more than White mortality rates, but the difference in this change is not statistically significant. By 2017, the increase in mortality rates (from 2012) was 32% larger for COFA migrants than Whites ( $p = 0.009$ ). By 2018, the increase was 43% larger for COFA migrants than Whites ( $p = 0.003$ ). There were no statistically significant differences between quarterly mortality trends for Japanese-Americans and Whites over this period, suggesting that our DiD estimates are not contaminated by omitted trends. We also estimate a simple DiD model, which focuses on the interaction between COFA migrant and a post-2014 indicator (controlling for ethnicity and year-quarter fixed effects), and obtain an estimate of 0.21 ( $p$ -value 0.003).

## **Discussion**

We find that the loss of traditional Medicaid benefits for COFA migrants was associated with higher mortality for this already vulnerable community. This decrease occurred despite the fact

that low-income COFA households were eligible for state-funded premium coverage for private insurance, despite efforts by Medicaid to mitigate the impacts of the policy change, and despite outreach by the Medicaid program and community groups to try to reduce the impact of this coverage change (Hofschneider, 2019).

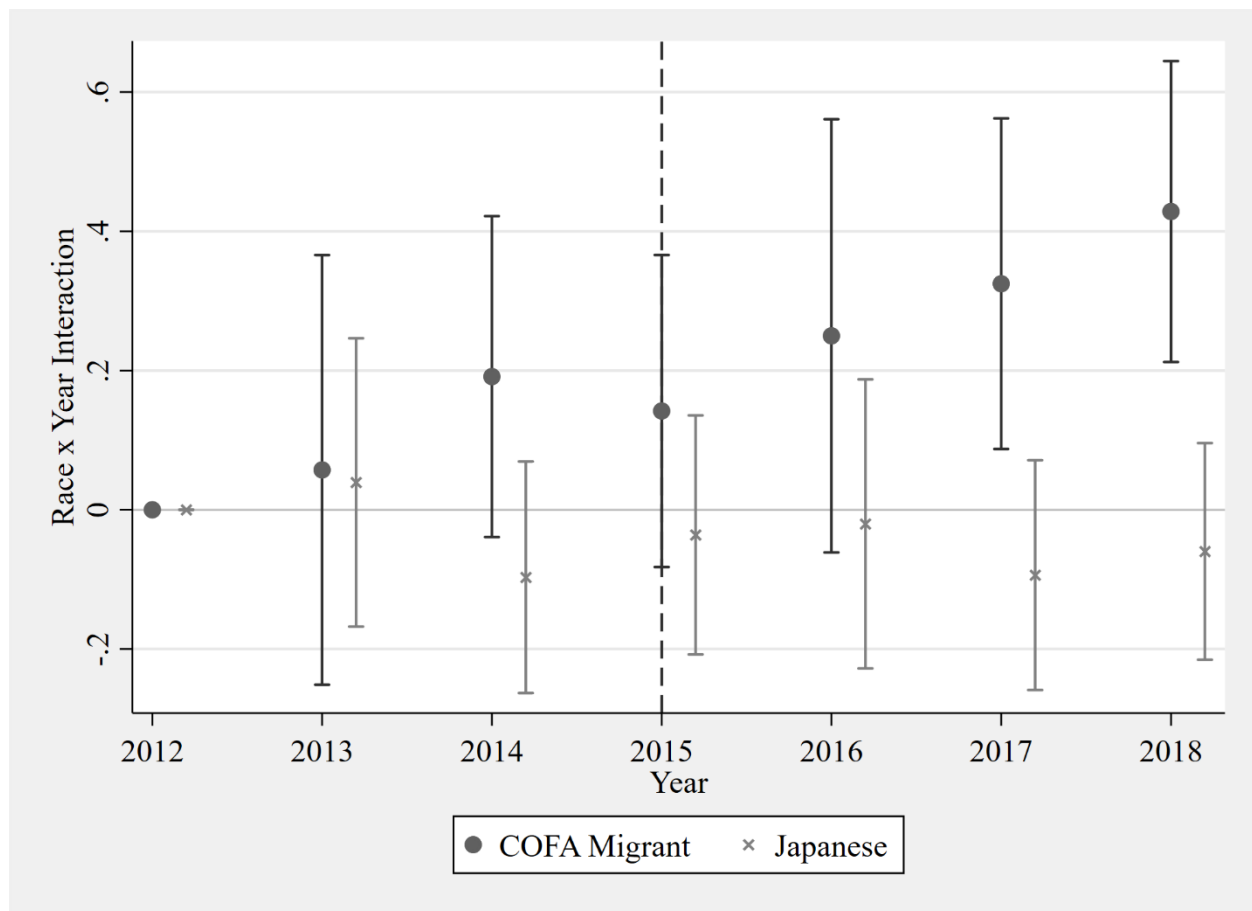
### **Public Health Implications**

COFA migrants are a vulnerable population with health disadvantages relative to other groups in Hawai'i (Hagiwara et al, 2016). Notably, Hawai'i's COFA population is an understudied group that shares salient characteristics with other vulnerable U.S. immigrant communities (limited English proficiency, poverty) who are often the targets of Medicaid reductions and other policy changes designed to cut state costs. As other states search for solutions to budget shortfalls or political imperatives by developing policies to reduce state Medicaid expenditures, information about Hawai'i's experience can provide translatable and timely lessons.

Our results also relate to recent experience in Spain, where the government ceased health coverage for undocumented immigrants in 2012 (Juanmarti-Mestres, et al. 2018). Using a similar DiD strategy, the authors estimate a 15% increase in mortality for undocumented immigrants (compared to natives), which is slightly smaller than our simple DiD estimate of a 21% increase in COFA mortality relative to Whites and Japanese-Americans after 2015.

We provide strong evidence regarding the tradeoffs these cost-reduction policies have with the health effects on targeted populations. This has relevance to the design of health insurance coverage, and the sharing of information about coverage changes.

Figure 1: Differences in the Change across Race Groups in Mortality Rates Relative to 2012



Note: This graph plots the coefficient estimates (and 95% confidence intervals) on COFA-migrant x Year and Japanese x Year interactions in a regression that uses log mortality rate as the dependent variable and controls for ethnicity and year-quarter fixed effects. Sample size: 81 year-quarter-ethnicity observations. In a simple difference-in-differences model (with ethnicity and year-quarter fixed effects), the coefficient on the interaction between the COFA indicator and a post-2014 indicator is 0.21 (p-value=0.003).

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