ORIGINAL ARTICLE

The Massachusetts Infertility Insurance Mandate: not nearly enough

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Objective: To assess the impact of statutory federal and state exceptions to the state law mandating insurance coverage for the diagnosis and treatment of infertility.
Design: Population-based cross-sectional study comprised of reproductive-age women (defined herein as 20–44 years of age) who resided in Massachusetts during the 2016–2019 interval. Statutory exemptions to the benefits afforded by the Massachusetts Infertility Insurance Mandate were identified in the *Massachusetts General Laws* as well as in the *United States Code*.
Setting: Not applicable.
Patient(s): Publicly available, deidentified, population-level data pertaining to state-based reproductive-age women (aged 20–44 years) were procured for the 2016–2019 interval. Data sources included the Massachusetts Census Bureau, Massachusetts Center for Health Information and Analysis, US Department of Defense, and US Office of Personnel Management.
Intervention(s): None.
Main Outcome Measure(s): The proportion of state-based reproductive-age women who constitute beneficiaries of the Massachusetts Infertility Insurance Mandate after accounting for the applicable state and federal statutory exemptions that limit its impact.
Result(s): Public health plans (Medicare, MassHealth [state Medicaid], TRICARE, and the Federal Employees Health Benefits Program) are exempted from the Massachusetts Infertility Insurance Mandate by dint of federal or state statute. Self-insured employer-sponsored health plans are exempted from the Massachusetts Infertility Insurance Mandate by dint of the federal *Employee Retirement Income Security Act*. It follows that only 26.2%–36.0% of state-based reproductive-age women comprised eligible beneficiaries of the Massachusetts Infertility Insurance Mandate over the 2016–2019 interval.
Conclusion(s): Contrary to commonly held views, multiple statutory exemptions to the Massachusetts Infertility Insurance Mandate render a significant proportion of state-based reproductive-age women ineligible for its cognate benefits. We propose herein that the Essential Health Benefit categories of the *Affordable Care Act* be expanded by the US Congress to include infertility care services. (Fertil Steril Rep® 2022;■:■–■. ©2022 by American Society for Reproductive Medicine.)
Key Words: Infertility, insurance mandate, insurance coverage

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It was October 8, 1987, when then Governor Michael S. Dukakis signed into law the *Act Providing a Medical Definition of Infertility*, also known as the "Massachusetts Infertility Insurance Mandate" (1). Defining infertility as a disease, the law declared the treatment of infertility to constitute an eligible health benefit that must be covered by state-licensed private health insurance plans. At the culmination of advocacy efforts by *Resolve of the Bay State*, the leading infertility organization for Massachusetts residents, the law came to be in the face of opposition by Blue Cross Blue Shield of Massachusetts and the Massachusetts Catholic Conference. Among the 19 state infertility insurance mandates, the Massachusetts statute remains one of the most inclusive examples of assuring coverage for infertility services in the United States (2).

The existence of a Massachusetts Infertility Insurance Mandate may lead one to believe that all state-based reproductive-age women are

Received May 20, 2022; revised August 4, 2022; accepted August 9, 2022.
K.G.K. has nothing to disclose. A.S.P. has nothing to disclose. J.R.J. has nothing to disclose. E.Y.A. has nothing to disclose.
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Fertil Steril Rep® Vol. ■, No. ■, ■ 2022 2666-3341

https://doi.org/10.1016/j.xfre.2022.08.004

eligible for its cognate benefits. The *Employee Retirement Income Security Act* of 1993, a federal law, preempts all state laws, in Massachusetts and elsewhere, regarding the applicability of health insurance mandates for self-insured, employer-sponsored health plans (3). Individuals subscribed to a self-insured, employer-sponsored health plan are not subject to Massachusetts state laws that mandate the coverage of 27 health conditions, including infertility (4). State-based reproductive-age women enrolled with MassHealth and/or Medicare are also exempted from the Massachusetts Infertility Insurance Mandate (1). Massachusetts-based active duty service and civilian employees of the US military who are insured by TRICARE are not subject to the Massachusetts Infertility Insurance Mandate (1). The same holds true for federal employees who are insured by an Office of Personnel Management (OPM)–affiliated health insurance plan (1).

This study aimed to determine the proportion of state-based reproductive-age women who constitute beneficiaries of the Massachusetts Infertility Insurance Mandate after accounting for the applicable state and federal statutory exemptions that limit its impact.

MATERIALS AND METHODS

Study Design, Setting, and Population

This population-based cross-sectional study comprised reproductive-age women (defined herein as 20–44 years of age) who resided in Massachusetts during the 2016–2019 interval. Publicly available, deidentified, population-level data were secured relevant to Massachusetts-based reproductive-age women enrolled with Medicare, MassHealth (state Medicaid), TRICARE, the Federal Employees Health Benefits Program, or self-insured employer-sponsored health plans. Massachusetts-based reproductive-age women without health insurance were similarly determined. The number of reproductive-age women enrolled with the Veterans Health Administration health plan is not tracked at the state level and was, thus, unavailable. The study was deemed exempt from review by the institutional review board of the Beth Israel Deaconess Medical Center in that use was made of publicly available, deidentified, population-level data.

Data Collection

The publicly available, deidentified, population-level data analyzed in this study were obtained from the Massachusetts State Census Bureau, Massachusetts Center for Health Information and Analysis (CHIA), US Department of Defense, and US OPM (5–8). Calendar year 2019 was the most recent year for which data were available. The number of state-based women aged 20–44 years during the 2016–2019 interval was provided by the Massachusetts State Census Bureau (5). The CHIA-maintained Massachusetts All-Payer Claims Database was used to determine the number of state-based reproductive-age women who were the beneficiaries of self-insured, employer-sponsored health plans (6). The numbers of state-based reproductive-age women who required public assistance insurance (Medicare and/or Medicaid) or were uninsured were similarly determined (6). Data provided by the CHIA also established whether state-based reproductive-age women were the primary insured party or beneficiaries of a policy issued to a partner or spouse (6). The US Department of Defense publishes the number of women, both active duty and civilian, who live and work in Massachusetts (7). This latter data set served as a proxy for the number of reproductive-age women enrolled with TRICARE (7). The OPM, the benefit manager for nonmilitary federal employees, publishes the number of federal employees by state (8). These data were used as a proxy for the number of Massachusetts-based reproductive-age women who were employees of the federal government. The numbers of insured state-based reproductive-age women who subscribed to TRICARE or an OPM-affiliated health plan were an estimate because employees may have purchased health insurance through another employer or may have been the beneficiary of a spouse's insurance plan.

Data Analysis

Reproductive-age women whose health insurance benefits proved exempt from the Massachusetts Infertility Insurance Mandate included those enrolled with self-insured, employer-sponsored health plans, Medicare and/or Medicaid, OPM-affiliated health plans, and TRICARE (1). Uninsured women were similarly excluded (1). These cohorts of women were subtracted from the total population of state-based reproductive-age women during the 2016–2019 interval with the goal of estimating the number of reproductive-age women who were eligible for the benefits of the Massachusetts Infertility Insurance Mandate.

RESULTS

The State-Based Reproductive-Age Population

Massachusetts was home to 1.16 million ($\pm$1.5%) reproductive-age women during the 2016–2019 study period (5). This figure represents the total number of women who could have been eligible for the benefits of the Massachusetts Infertility Insurance Mandate.

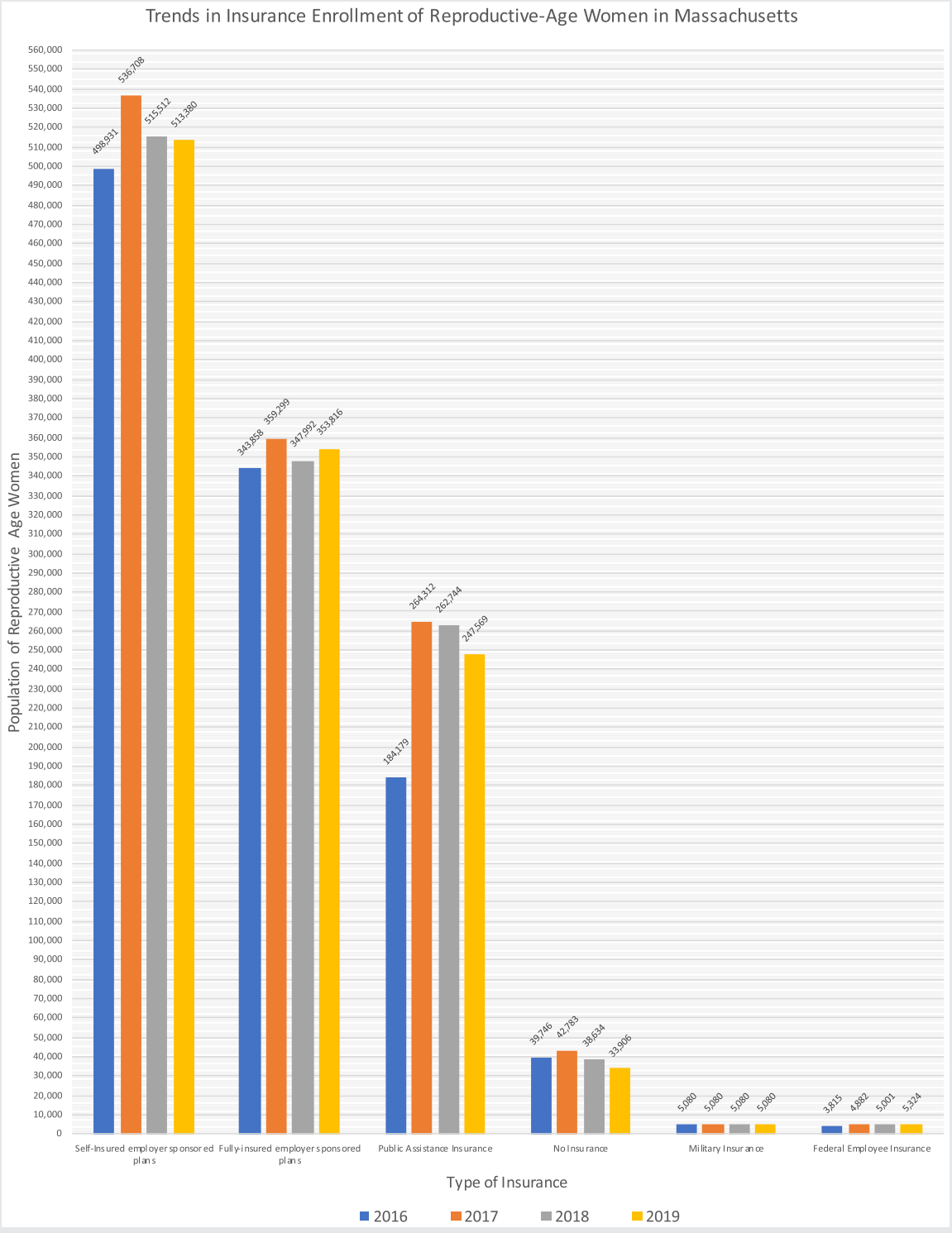
Statutory Exemptions to Mandated Coverage

Between 2016 and 2019, more than half a million (516,000 $\pm$ 4%) or 45% of state-based reproductive-age women were enrolled in self-insured employer-sponsored health plans (Fig. 1) (6).

The number of state-based reproductive-age women covered by MassHealth ranged from 180,000–265,000 (16%–23% of the state population) during the study period (6). State-based individuals who lacked any form of health insurance averaged under 40,000 and comprised just over 3% of the population (6).

Fewer than 10,500 state-based reproductive-age women were covered by TRICARE as of 2016, the most recent year for which data were available, or an OPM-affiliated health insurance plan during each of the study period years (7). As such, these women constituted $<$1% of state-based reproductive-age women.

FIGURE 1



Trends in Insurance Enrollment of Reproductive-Age Women in Massachusetts
Number of Massachusetts based Reproductive-Age women in each year of the study period whose health insurance status was accounted for, classified by insurance type
Column 1: Self-Insured employer sponsored plans
Column 2: Fully-insured employer sponsored plans
Column 3: Public Assistance Insurance
Column 4: No Insurance
Column 5: Military Insurance
Column 6: Federal Employee Insurance

Koniares. MA Infertility Insurance Mandate. Fertil Steril Rep 2022.

TABLE 1

Number and percentage of Massachusetts-based women aged 20–44 years whose health insurance is either subject to or exempt from the Massachusetts Infertility Insurance Mandate (2016–2019).

	2016		2017		2018		2019	
Population	No. of women	Percentage of women	No. of women	Percentage of women	No. of women	Percentage of women	No. of women	Percentage of women
Census data: aged 20–44 y residing in Massachusetts (5)	1,142,542	100%	1,156,289	100%	1,170,724	100%	1,169,186	100%
Subject to the Massachusetts Infertility Mandate								
Fully insured, employer-sponsored plans (6)	343,858	30.1%	359,299	31.1%	347,992	29.7%	353,816	30.3%
Exempt from the Massachusetts Infertility Mandate								
Self-insured, employer-sponsored plans (6)	498,931	43.7%	536,708	46.4%	515,512	44.0%	513,380	43.9%
Public assistance insurance (6)	184,179	16.1%	264,312	22.9%	262,744	22.4%	247,569	21.2%
Military insurance (7)[a]	5,080	0.4%	5,080	0.4%	5,080	0.4%	5,080	0.4%
Federal employee insurance (8)	3,815	0.3%	4,882	0.4%	5,001	0.4%	5,324	0.5%
No insurance	39,746	3.5%	42,783	3.7%	38,634	3.3%	33,906	2.9%
Subtotal	731,751	64.0%	853,765	73.8%	826,971	70.6%	805,259	68.9%
Potential mandated coverage								
Mandate-eligible insurance	410,791	36.0%	302,524	26.2%	343,753	29.4%	363,927	31.1%
Delta[b]	66,933	5.9%	56,775	4.9%	4,239	3.6%	10,111	0.9%

Note: The total number of reproductive-age women whose health insurance was exempt from the Massachusetts Infertility Insurance Mandate was subtracted from the total population of reproductive-age women to determine the number of women whose health insurance provided mandated Infertility benefits.

[a] The 2016 data were used to approximate the number of women with military insurance in 2017–2019 because new data were not published for those years. There were no military base openings or closings in Massachusetts during those years, leading to the assumption of a relatively static employment number.

[b] Delta is the absolute difference between the census population and the total number of reproductive-age women with insurance bound by or exempt from the mandate as determined from various sources.

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A small, untracked number of state-based reproductive-age women who are eligible for Veterans Affairs (VA) health care benefits are also exempted from the Massachusetts Infertility Insurance Mandate. However, most of the state-based reproductive-age women who are eligible for VA health care benefits are enrolled either in a self-insured employer-sponsored health care plan or with public assistance programs and are, thereby, accounted for in this analysis.

Despite robust data collection by Massachusetts, the health insurance status of some state-based reproductive-age women was not accounted for (Table 1) (5–8). This segment ranged from a high of 67,000 or 5.9% of reproductive-age women to a low of 4,200 or <1% during the study period. Some of these individuals may have been enrolled with health insurance plans through the *Affordable Care Act* (ACA) marketplace. Insurers who participate in the ACA marketplaces are not bound by state-enacted health insurance mandates but may choose to include infertility coverage as a benefit. Likewise, some self-insured employers elect to offer infertility coverage through their health care plan. Infertility coverage in such plans varies widely and may be administered by a third-party carve-out benefit manager (9–11).

Mandate-Eligible State-Based Reproductive-Age Women

Fully insured employer-sponsored health insurance plans are subject to the Massachusetts Infertility Insurance Mandate (1). Over the study period, 350,000 (± 2.3%) individuals or just over 30% of state-based reproductive-age women constituted beneficiaries of the Massachusetts Infertility Insurance Mandate.

DISCUSSION

To our knowledge, this study is the first to examine the impact of statutory exemptions on a specific state-mandated health insurance benefit, infertility. Our findings reveal that counter to the legislative intent of the Massachusetts Infertility Insurance Mandate, that is, guaranteed infertility care to all state-based reproductive-age women, just over 30% of the targeted population qualified for insurance-covered infertility care over the 4-year study period.

Infertility affects approximately 1 in 8 couples (12). Despite this high prevalence, the classification of infertility as a disease or as a form of disability has only come about relatively recently (13, 14). Most states do not require health insurers to cover these services, leaving a large segment of the population with a disease for which no insurance coverage is available.

Massachusetts and 18 other states have chosen to mandate health insurance coverage for the diagnosis and treatment of infertility (2). Among these 19 states, Massachusetts and 12 others have expressly stipulated coverage for in vitro fertilization in their mandates (2). The benefits of statewide mandated in vitro fertilization coverage include higher use by those in need of treatment, fewer embryos transferred with the expected concordant decrease in multiple gestation, and decreased use of "add-on" services that lack supportive evidence (15–17).

Health insurance mandates are subject to both state legislation and federal legislation. Massachusetts state law mandates insurance coverage for 27 health-related services, such as prosthetic devices, mammography, and early intervention (4). However, at the federal level, the *Employee Retirement Income Security Act* exempts all private sector companies who offer self-insured health care plans from state mandates (3). At the state level, each state determines whether or not to include mandated health-related services in its Medicaid benefits.

How much do mandated health insurance benefits cost? An analysis of state-mandated benefits released by the CHIA concludes that spending on all of the 27 mandated health care services in Massachusetts, including infertility, comprises 1%–4% of the total premium or $3.88–$15.53 per member per month (18). The lower and upper boundaries of the per member per month were derived after examining the impact of the mandate on several key elements, including required direct cost—which is the sum of base direct costs, the cost of services that would be incurred even without mandates, and marginal direct costs, the costs directly attributable to the mandates—and indirect cost, the cost of other services associated with the mandates. The upper boundary assumes all of the costs associated with a mandate are new; however, in the absence of a mandate for a specific condition, a patient may be treated with less effective covered therapies to ameliorate their suffering. With a mandate in effect, the new charges for the now covered treatments may prove lower than previous expenditures absent a mandate, thus establishing the lower boundary (18).

The business case for voluntarily providing infertility benefits to employees is increasingly being recognized. Businesses that are otherwise exempted from state mandates may be incentivized to cover the cost of infertility treatment with an eye toward improving employee recruitment, satisfaction, and retention. A survey performed by FertilityIQ demonstrated that employees are more likely to work harder, remain at their job longer, and overlook company shortcomings if their employer offers infertility benefits (19).

Relatively new to the marketplace are fertility carve-out benefit managers (9–11). These entities administer fertility benefits for employers exempted from state mandates by federal and state statutes who voluntarily choose to offer fertility coverage to their employees. A 2020 estimate put the national number of employees covered in this manner at over 2.7 million with substantial growth projected (20). New carve-out benefit managers are entering this marketplace that serves to affirm the premise that insurance mandates alone are not enough to meet existing needs. This is also a marketplace indicator that employers are recognizing the benefit of offering fertility coverage to their employees. The aforementioned developments notwithstanding, there remains a large gap in coverage for millions of persons of reproductive-age.

Legislative support of mandates is both necessary and possible. At the federal level, the ACA has survived 3 Supreme Court challenges to its constitutionality. Although infertility

care was not included in the original ACA statute, it is not too late to rectify this glaring oversite. From a social justice perspective, this could include those reproductive-age women who have tried to conceive on their own without success (infertility) and those who by dint of natural biology require medical assistance to have a child (fertility assistance). At the state level, there appears to be no imminent prospect of regulatory change in the listed benefits of Medicaid. Newly initiated legislative action may be required if Medicaid is to add infertility care to its list of covered benefits.

This study has several limitations. A small number of reproductive-age women, 0.8% (2019) to 5.9% (2016), were unaccounted. Some of these women may have purchased their health insurance through the ACA marketplace. In addition, women employed by the military or the federal government may have access to infertility benefits through a spouse's insurance plan. An unknown number of women may have had access to insurance benefits through the VA, the data for which are not tracked at the state level. However, it is noteworthy that reproductive-age female employees of the military and federal government comprise just 0.9% of the reproductive-age female population in Massachusetts (7). In aggregate, these groups are unlikely to have altered the conclusions of this study.

CONCLUSION

In conclusion, infertility is one of the most common diseases affecting people of reproductive age (12). Fertility remains a universal desire that transcends geographic and cultural boundaries. The Massachusetts Infertility Insurance Mandate is often cited as model legislation for what all people ought to have, insurance coverage for infertility (21). The mandate is designed to help bridge the gap between those who can afford to pay out of pocket for infertility services and those who cannot. Statutory federal and state exceptions hamper the ability of the Massachusetts statute to fulfill its mission, resulting in less than a third of reproductive-age women in Massachusetts with mandated insurance coverage for the diagnosis and treatment of infertility. Although an increasing number of employers are choosing to offer infertility coverage, a large portion of the population remains without mandated infertility insurance coverage. By adding infertility to the ACA list of essential benefits and modifying state regulations with respect to Medicaid-listed benefits, the proportion of reproductive-age women in Massachusetts with access to infertility care could approach 100%. A mandate for the coverage of infertility is warranted not only because it is ethically just but also because it is economically sound.

Acknowledgments: The authors thank Ms. Alicia Siani, J.D., of Verrill for her thorough assessment of relevant state and federal legislation. The authors also thank Mr. Matthew Dowling of Strategic Benefit Advisors for background discussions of insurance benefit programs.

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