Allostatic Load and Administrative Burden

When Systems Cause the Harm They're Meant to Treat

There is a cruel irony at the heart of conditional healthcare. The systems designed to connect vulnerable people with medical care may themselves produce measurable health damage. This is not metaphor or speculation. It is physiology. ***The uncertainty, documentation requirements, and compliance anxiety that accompany work requirement verification activate the same biological stress systems that chronic poverty, discrimination, and social marginalization have already strained.*** For populations whose bodies already bear the cumulative wear of disadvantage, adding administrative burden does not merely inconvenience them. It harms them.

This article bridges two bodies of research that have developed largely in parallel. The first is the physiological literature on chronic stress, allostatic load, and the mechanisms through which sustained uncertainty damages health. The second is the public policy literature on administrative burden, which documents how learning costs, compliance costs, and psychological costs shape who successfully accesses public benefits. When these literatures converge on Medicaid work requirements, they reveal something that standard policy evaluation misses entirely: ***the health costs of verification may begin not at coverage loss, but at the moment of uncertainty about whether coverage will continue.***

The Physiology of Chronic Stress

The human stress response evolved to handle acute threats. When the brain perceives danger, the hypothalamic-pituitary-adrenal axis releases cortisol and other hormones, mobilizing energy for immediate action. Heart rate increases. Blood pressure rises. Glucose floods the bloodstream. This fight-or-flight response works beautifully for escaping predators. It was never designed for the chronic, low-grade stressors of modern life.

Bruce McEwen and colleagues developed the concept of allostatic load to describe what happens when stress response systems activate repeatedly without adequate recovery. Allostatic load represents the cumulative wear and tear that results when these adjustment mechanisms operate under chronic demand. Chronic cortisol elevation damages the hippocampus, impairing memory and cognitive function. Sustained cardiovascular activation contributes to hypertension. Metabolic dysregulation promotes insulin resistance. Immune system suppression increases vulnerability to infection while chronic inflammation accelerates tissue damage. A person may present with hypertension, pre-diabetes, cognitive complaints, and frequent illness as separate problems. The underlying driver may be accumulated stress exposure that has shifted multiple physiological systems toward dysfunction.

Crucially, the stress response does not distinguish between physical and psychological threats. The brain that evolved to recognize predators processes uncertainty about housing stability, food security, or healthcare access through the same neural pathways. An unopened envelope from the state Medicaid agency can trigger the same physiological cascade as a bear in the woods. The body cannot tell the difference.

In the MacArthur Studies of Successful Aging, allostatic load indices incorporating neuroendocrine, cardiovascular, and metabolic biomarkers predicted functional decline and mortality over years.

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The cumulative biological burden of stress provides a window into how life experience becomes embodied as disease risk.

Arline Geronimus proposed the weathering hypothesis to explain why Black women in the United States show accelerated biological aging compared to white women of the same chronological age. Her research documented that by age 45, half of Black women had high allostatic load scores, compared to much lower rates among white women. ***The explanation was not genetics but experience: the cumulative physiological cost of navigating a society structured by racism, economic marginalization, and chronic threat.***

Poverty itself functions as a chronic stressor. Research by Sendhil Mullainathan and Eldar Shafir demonstrates that scarcity captures cognitive bandwidth, leaving fewer mental resources for planning and decision-making. But scarcity also captures physiological bandwidth. ***The constant cognitive load of managing insufficient resources keeps stress systems chronically activated. People living in poverty face difficult choices while their bodies are under sustained physiological assault from the stress of making difficult choices.***

Administrative Burden as Stressor

Pamela Herd and Donald Moynihan's framework for understanding administrative burden identifies three categories of costs. Learning costs involve discovering that programs exist, understanding eligibility requirements, and determining how to apply. Compliance costs involve gathering documentation, completing forms, and maintaining eligibility through ongoing verification. Psychological costs involve the stigma associated with benefit receipt, the stress of navigating bureaucratic systems, and the anxiety of uncertain outcomes.

All three cost categories function as stressors in the physiological sense. Learning costs require sustained cognitive effort when cognitive resources may already be depleted by poverty. Compliance costs require time and organizational capacity that compete with work and caregiving. Psychological costs impose direct emotional burdens that activate stress response systems regardless of whether they result in coverage loss.

The psychological costs merit particular attention because they are most frequently overlooked. Standard evaluations count enrollment numbers and coverage rates. They do not count the nights of sleep lost to worry about documentation, the elevated blood pressure from waiting for determination letters, or the depression symptoms that worsen when bureaucratic encounters leave people feeling powerless. These costs are invisible in administrative data but entirely visible in physiological measurement.

The uncertainty itself harms. Anticipatory stress about potential loss may be more damaging than actual loss because it extends the period of stress activation. A person who loses coverage experiences acute stress followed by adaptation. A person uncertain about coverage experiences chronic stress until resolution.

Work requirements amplify all three burden categories. Learning costs increase because requirements add complexity: qualifying activities, verification procedures, exemption categories, documentation requirements, reporting deadlines. Compliance costs increase because verification demands ongoing documentation rather than one-time eligibility determination. Psychological costs increase because monthly or quarterly compliance cycles create recurring rather than episodic stress.

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The distinction between one-time and recurring burden matters enormously for stress physiology. Annual redetermination reactivates stress once per year. Work requirements convert this episodic stressor into a chronic one. Every month, the person must worry about requirements, documentation, and reporting. The stress response system that would otherwise recover between acute episodes remains chronically activated.

The Ironic Harm

Here is where the two literatures converge to reveal an irony that should trouble anyone concerned with the health effects of health policy.

Medicaid expansion populations already carry elevated allostatic load. These are people whose life circumstances have subjected them to chronic stress from poverty, housing instability, food insecurity, discrimination, and previous healthcare deprivation. Many have accumulated physiological damage from years without adequate medical care. They are, almost by definition, people whose stress response systems have been chronically activated and whose biological reserves have been depleted.

Work requirement verification adds administrative stress to populations least equipped to absorb it. The additional burden falls on people whose capacity to manage burden is already compromised by the cumulative effects of prior burden. The system designed to improve their health outcomes begins by worsening their physiological status.

The specific conditions that Medicaid coverage is meant to treat are often the same conditions that chronic stress exacerbates. Hypertension worsens under sustained stress activation. Diabetes management becomes more difficult when stress hormones dysregulate glucose metabolism. Depression and anxiety symptoms intensify under conditions of uncertainty and threat. Chronic pain syndromes flare when stress hormones amplify inflammatory processes. The person who needs blood pressure medication to prevent stroke faces elevated blood pressure from the stress of maintaining access to blood pressure medication.

This creates a particularly cruel feedback loop. Work requirements aim to promote employment, but chronic stress impairs the cognitive and physical functioning that employment requires. Executive function diminishes under sustained stress activation, making it harder to plan, organize, and follow through on work-related tasks. Physical energy depletes when stress hormones remain chronically elevated. Immune function declines, leading to more frequent illness and missed work. The system that conditions healthcare on work capacity may itself be degrading work capacity.

Research from Arkansas's 2018-2019 work requirement implementation provides indirect evidence of these dynamics, though the studies were not designed to measure physiological stress. Among those who lost coverage, researchers documented increased problems with medical debt, delayed care, and medication access. These concrete harms occurred after coverage loss. But the anticipatory stress of uncertain coverage likely began months earlier, during the initial implementation period when people were learning about requirements, trying to understand whether they applied, and worrying about whether they could comply. ***The health damage may have started before a single person lost coverage.***

The populations most likely to experience elevated allostatic load are also the populations most likely to struggle with work requirement compliance. People with serious mental illness experience chronic stress from their conditions and face documentation barriers for exemptions. People with

substance use disorders experience physiological dysregulation from addiction while navigating treatment requirements that may conflict with work requirements. People experiencing homelessness face constant survival stress while lacking stable addresses for receiving communications. People with chronic conditions experience disease-related stress while trying to obtain medical documentation of work limitations. In each case, the burden falls heaviest on those whose physiological reserves are most depleted.

Measuring the Unmeasured

Standard policy evaluation does not capture the health costs of administrative burden. Evaluators measure what policy explicitly targets: employment rates, coverage rates, cost savings. They do not measure what policy implicitly produces: stress activation, physiological damage, accelerated aging.

The measurement challenges are substantial but not insurmountable. Allostatic load can be assessed through biomarker panels measuring cortisol patterns, inflammatory markers, metabolic indicators, and cardiovascular parameters. Linking biomarker data to administrative data on work requirement status would allow direct testing of whether compliance uncertainty associates with physiological stress indicators.

Longitudinal studies could track biomarkers before, during, and after work requirement implementation. Interrupted time series designs could examine whether population-level stress indicators change when requirements take effect. Random assignment studies of different verification approaches could test whether reducing administrative burden reduces measurable stress.

The latency between stress exposure and health outcome creates additional challenges. Allostatic load accumulates gradually. The cardiovascular damage from a year of compliance uncertainty may not manifest as a heart attack for a decade. Standard evaluation windows of one to three years may miss effects that unfold over longer horizons.

Coverage loss itself creates measurement artifacts. When someone loses coverage due to non-compliance, subsequent emergency department visits appear as consequences of coverage loss, not consequences of the stress that preceded it. The ED visit for a hypertensive crisis gets attributed to lack of medication. The contribution of preceding stress goes unmeasured.

There is also an attribution problem. If a beneficiary develops depression, analysis attributes this to pre-existing vulnerability, not compliance anxiety. If she develops hypertension, analysis points to diet or family history, not chronic cortisol elevation from worrying about deadlines. The health effects of administrative burden hide in plain sight, attributed to individual characteristics rather than policy choices.

Design Implications

If administrative burden is itself a social determinant of health, what follows for system design?

The first implication is that minimum necessary documentation should function as a design principle, not merely as an efficiency consideration. Every documentation requirement imposes learning, compliance, and psychological costs. Every cost contributes to allostatic load. Every increment of allostatic load degrades health. The question is not merely whether documentation

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serves program integrity but whether the health cost of requiring it exceeds the program integrity benefit of collecting it.

This calculus differs from standard administrative analysis. A verification requirement might be considered reasonable if it takes only fifteen minutes to complete and reduces fraud by a small percentage. But fifteen minutes of documentation effort carries an unknown quantity of associated worry about whether the documentation was correct, whether it will be received, whether it will be accepted. The psychological cost may vastly exceed the compliance cost. Evaluating only the fifteen minutes misses the larger burden.

The tradeoff between verification rigor and health harm becomes an explicit policy choice rather than an implicit administrative decision. States that build high-burden verification systems are making a choice to impose health costs on beneficiaries. States that build low-burden systems are making a choice to reduce health costs at potential cost to program integrity. Neither choice is self-evidently correct. But making the tradeoff explicit allows for democratic deliberation about values and priorities.

Automated data matching takes on new significance when understood through the lens of allostatic load. Matching unemployment insurance wage records to Medicaid eligibility files imposes zero psychological cost on beneficiaries. They do not know it is happening. They do not worry about it. They do not experience uncertainty about whether their documentation was adequate. The administrative burden shifts entirely from the beneficiary to the state. If the goal is to verify work activity while minimizing health harm, automated matching is not merely efficient. It is medically preferable.

Zero-friction states may be making a public health decision, not just an administrative one. Georgia's approach of annual attestation with minimal documentation reduces compliance cycles from monthly to annual and minimizes the psychological burden of ongoing verification. Whatever the political motivations, the design has public health implications. Fewer stress activations mean less allostatic load accumulation. Less allostatic load means less health damage. The person who attests once per year instead of reporting monthly experiences less chronic stress regardless of whether they lose coverage.

Pre-population of verification forms from administrative data sources reduces cognitive load along with psychological burden. If the system already knows where someone works and how many hours they worked, asking them to re-enter that information imposes costs without benefit. Pre-population shifts the burden of accuracy from the beneficiary, who may worry about entering incorrect information, to the system, which can verify its own data quality. The beneficiary's stress response does not distinguish between completing a form correctly and confirming that a pre-populated form is correct, but the cognitive demands differ substantially.

Communication strategies matter for stress activation. A notice that says "ACTION REQUIRED: You must verify your work hours by the 15th or lose coverage" activates threat detection in ways that a notice saying "We've automatically verified your work hours for this month. No action needed" does not. Both may be accurate descriptions of administrative reality. They have entirely different physiological effects. Standard communication design focuses on clarity and completeness. Communication design informed by stress physiology would focus on minimizing threat activation while conveying necessary information.

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The Conscientious Complier Paradox

The cruelest irony may be that the most conscientious compliers bear the heaviest physiological burden from the worrying itself.

Consider two people subject to work requirements. One does not take the requirements seriously, makes no effort to comply, and loses coverage without experiencing significant stress about it. The other takes the requirements extremely seriously, worries constantly about compliance, checks and rechecks documentation, and maintains coverage successfully. Standard evaluation treats the second person as a policy success: requirements were met, coverage was maintained, objectives were achieved.

But which person accumulated more allostatic load? The person who lost coverage experienced acute stress around the loss but did not experience months of chronic anticipatory stress. The person who maintained coverage never experienced coverage loss but experienced months of sustained worry about the possibility. If stress-related physiological damage depends on duration and intensity of stress activation rather than on final coverage status, the conscientious complier may have worse health outcomes than the careless one.

This paradox illuminates a fundamental limitation of outcome-focused evaluation. If the metric is coverage maintenance, the anxious complier represents success. If the metric is health, the anxious complier represents a person whose health was damaged by the policy even though the policy "worked" by its own terms. The goal of health coverage is better health. A policy that maintains coverage while damaging health through stress has failed at the fundamental objective even if it has succeeded at the proximate metric.

The populations most likely to experience compliance anxiety may be precisely those whose conscientiousness makes them most likely to comply. They are people who take rules seriously, who fear consequences, who organize their lives around avoiding negative outcomes. They are also people who experience sustained stress when they perceive themselves to be under surveillance and judgment. Work requirements create conditions ideally suited to maximize their distress while having little effect on populations less inclined toward anxious conscientiousness.

This has equity implications. Research on personality and socioeconomic status finds that conscientiousness correlates with upward mobility and stable employment. But conscientiousness in a context of genuine threat produces anxiety. The working poor who take their responsibilities seriously may experience more compliance stress than the non-working population the requirements ostensibly target. The burden falls not on those who fail to work but on those who work and worry about proving it.

The systems designed to connect vulnerable people with healthcare may themselves be damaging their health. This is the conclusion that emerges when stress physiology meets administrative burden analysis. It is not a comfortable conclusion. It suggests that well-intentioned policies can cause harm through mechanisms that standard evaluation does not measure and policy design does not consider.

But discomfort is appropriate when confronting policies that may sicken the people they are supposed to help. Allostatic load is not abstract. It is measured in cortisol levels and inflammatory markers, in blood pressure readings and HbA1c values, in hippocampal volume and telomere length. These physiological parameters respond to psychological experience, including the experience of navigating bureaucratic systems that determine access to healthcare.

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Work requirements as currently conceived add administrative burden to populations already burdened by the cumulative stress of disadvantage. They create recurring compliance demands that maintain chronic stress activation rather than allowing recovery between episodes. They impose psychological costs that standard evaluation ignores while producing health effects that standard evaluation would capture only if it knew to look for them. The question is not whether these effects exist but whether we choose to see them.

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