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Research Article

Who Gets to Coproduce? Frontline Discretion and the Interpretation of Client Performance Information

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Abstract: Coproduction is promoted in public administration for its potential to improve service experiences, client outcomes, and legitimacy, yet its implementation remains uneven. Existing research has identified client- and organizational-level factors that affect coproduction, but less attention has been paid to the provider-side judgments that precede it. Meanwhile, frontline workers increasingly rely on client-level performance information, which prior research shows is interpreted through professional norms, goals, and organizational context, and can influence how they allocate effort and engage with clients. The implications of these interpretive processes for coproduction remain underexamined. Thus, this study examines whether client performance information influences frontline workers' discretionary judgments about coproduction. The analysis focuses on primary care, where physicians routinely interpret clinical indicators and exercise discretion when involving patients in shared decision-making. Using a vignette experiment with 200 U.S. primary care physicians, the study isolates the effect of client-level performance information on perceived suitability for coproduction and expectations of coproduction. Respondents indicated that physicians would view a patient with poorer performance information as less suitable for coproduction and less likely to be engaged collaboratively. These findings show how performance information can influence how frontline workers interpret clients and form judgments about coproduction.

Keywords: Coproduction, street-level bureaucracy, frontline decision-making, discretion, performance information

Supplements: Open data, Open materials

Coproduction is widely promoted in public administration as a means of improving service quality, responsiveness, and government legitimacy (Bovaird & Löffler, 2012; Verschuere et al., 2012). Coproduction research highlights the collaborative potential of service delivery, in which clients are active participants who help define, shape, and implement public services alongside frontline workers (Brandsen & Honingh, 2016; Nabatchi et al., 2017; Ostrom, 1996; Parks et al., 1981). Despite its promotion, coproduction is unevenly implemented in practice (Voorberg et al., 2015).

Street-level bureaucracy research shows that frontline workers play a central role in variation in service delivery (Lipsky, 1980/2010). Operating under conditions of uncertainty and constraint, they rely on discretionary judgments to interpret clients and determine how to allocate attention and effort (Jilke & Tummers, 2018). These judgments are increasingly informed by client-level performance information, which provides standardized indicators of client outcomes (Moynihan, 2008).

While each of these literatures offers important insights, they are rarely brought together to explain how coproduction is initiated in practice. Coproduction research has examined client-side and organizational barriers but has paid less attention to the discretionary judgments of frontline workers that precede engagement. Street-

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level bureaucracy research focuses on how frontline workers interpret clients and allocate effort (e.g., Jilke & Tummers, 2018), with limited connection to coproduction (Dudau et al., 2019; Gofen et al., 2024). Research on performance information shows how poor performance influences frontline decision-making (Andersen & Nielsen, 2020; Bjørnholt et al., 2025; Mikkelsen et al., 2023), yet it remains largely disconnected from workers' judgments about whether to engage in coproduction. As a result, we know relatively little about how client-level performance information informs frontline workers' discretionary judgments about coproduction.

This study investigates this relationship using a vignette-based experiment with U.S. primary care physicians. Specifically, it asks how poor versus good performance information affects how frontline workers interpret clients and form discretionary judgments about coproduction. The study examines how performance information influences perceived urgency and perceptions of client capability, as well as perceptions of a client's suitability for coproduction and the extent to which coproduction is expected. This approach enables a direct test of how performance information enters frontline workers' discretionary reasoning about coproduction.

This study makes two primary contributions. First, it reframes coproduction as a process partially shaped by frontline workers' discretionary judgments about clients, offering an additional potential explanation for variation in implementation. Second, it identifies client-level performance information as a cue that influences these judgments, demonstrating how it can alter both how clients are interpreted and expectations about coproduction, thus connecting insights from coproduction, street-level bureaucracy, and performance information research.

Theory

Frontline Judgments about Coproduction

Coproduction, despite ongoing debate over its precise boundaries, is commonly defined as the collaborative and reciprocal production of public services through joint contributions from users and providers (Brandsen & Honingh, 2016; Nabatchi et al., 2017; Ostrom, 1996; Parks et al., 1981). It is widely promoted as a normative ideal in contemporary public administration because its implementation is associated with promises of greater service effectiveness, efficiency, and user satisfaction, as well as enhanced government legitimacy (Bovaird & Löffler, 2012; Brandsen & Honingh, 2016; Verschuere et al., 2012). Despite these promises, empirical evidence shows uneven implementation and mixed results, suggesting that context and facilitation matter greatly (Acar et al., 2025; Mortensen & Needham, 2023; Verschuere et al., 2012; Voorberg et al., 2015).

Existing work has identified several barriers to coproduction on the client side, including capacity, motivation, and trust (Jakobsen, 2013; Thomsen, 2017). On the organizational side, resources, incentives, and a culture of risk aversion have been shown to matter (Bovaird & Löffler, 2012; Voorberg et al., 2015). While some scholars identify providers' attitudes toward and trust in clients as essential antecedents of coproduction (e.g., Voorberg et al., 2015), the discretionary behavior of frontline workers remains underexamined.

Coproduction ultimately requires mutual participation by both providers and clients, and efforts may fail even when it is formally encouraged or when only one party seeks to initiate it. Its realization depends in part on the discretionary judgments of frontline workers, who can influence whether and how coproduction is initiated (Dudau et al., 2019; Gofen et al., 2024). In this sense, discretion is a prerequisite for coproduction, and without frontline workers' willingness to collaborate, the promises of coproduction remain aspirational.

Street-Level Discretion

Street-level bureaucracy (SLB) theory provides a rich foundational lens for understanding how public services are delivered in practice. As Lipsky (1980/2010) famously observed, frontline public service workers, including teachers, police officers, social workers, and healthcare providers, consistently work in environments with heavy caseloads, limited resources, and ambiguous goals. These conditions do not just make discretion, or the ability to make decisions, possible; they demand it (Lipsky, 1980/2010). Rather than narrowly following fixed rules, frontline workers exercise discretion when interpreting policies and engaging with clients.

This discretion is not random. It is influenced by personal experience, professional norms, and organizational context (Maynard-Moody & Musheno, 2003; Sandfort, 2000; Zacka, 2017). It is also shaped by cognitive processes that simplify complex decisions, leading frontline workers to rely on intuitive, cue-based judgments, consistent with heuristic reasoning, to make quick assessments of clients (Kahneman, 2011; Moseley

& Thomann, 2020). Prior research shows that these judgments draw on a range of social and behavioral cues, including demographic characteristics, demeanor, language use, and performance relative to others (Bjørnholt et al., 2025; Döring & Jilke, 2023; Dubois, 2010; Jilke & Tummers, 2018; Maynard-Moody & Musheno, 2003; Prottas, 1979; Raaphorst & Van de Walle, 2018; van Oorschot, 2000; Zacka, 2017). Through these processes, clients are implicitly categorized in ways that influence how frontline workers interpret cases, including whether they are perceived as deserving, credible, and likely to succeed, and how effort is allocated (Jilke & Tummers, 2018; Maynard-Moody & Musheno, 2003). These judgments function as coping mechanisms that help workers manage workload and uncertainty (Brodkin, 2011; Edri-Peer & Cohen, 2025; Tummers et al., 2015), but they can also reinforce unequal treatment, including practices such as cream-skimming, in which resources are steered toward clients perceived as most likely to succeed (Döring & Jilke, 2023).

Performance Information as an Interpretive Input

Performance management systems generate standardized data about programs, organizations, and individual clients (Cantarelli et al., 2023). Consequently, frontline workers now routinely engage with performance information pertaining to their clients, such as test scores in education, risk scores in social services, or diagnostic results in healthcare. These data are designed to promote transparency and consistency by guiding decisions and reducing unwarranted variation (Moynihan, 2008; Nielsen, 2014). Yet empirical evidence demonstrates that performance information does not function as a neutral input, and whether and how it is used depends on how frontline workers interpret its relevance and implications, considering their goals, professional identities, and organizational context (de Boer et al., 2018; Destler, 2017; Mikkelsen et al., 2023; Moynihan et al., 2020; Petersen et al., 2019; Petersen, 2020).

In frontline work, these indicators can provide benchmarks that allow workers to evaluate client performance relative to their own past performance, other clients' performance, or externally defined standards, each of which influences how performance information is interpreted and used. For example, existing research finds that frontline workers may update their understanding of clients, prioritize attention differently, and adjust their responses upon receiving information about poor performance (Andersen & Nielsen, 2020; Bjørnholt et al., 2025; Mikkelsen et al., 2023). In this sense, performance information is best understood as part of discretionary reasoning rather than a replacement for it.

Integration of Perspectives

This study examines how poor versus good client performance information influences frontline workers' discretionary judgments about coproduction. Research shows that poor or worsening performance information is associated with an increased perceived need for action, in which frontline workers interpret such information as signaling problems that require attention (Bjørnholt et al., 2025; Jilke & Tummers, 2018; Mikkelsen et al., 2023). However, coproduction requires more than the identification of need. While poor performance information may signal that clients require attention, it may not increase—and may even reduce—frontline workers' discretionary judgments toward coproduction.

One reason is that poor performance information may increase perceived urgency. It is well established that frontline workers operate in environments with limited resources, so they must cope to complete their tasks (Lipsky, 1980/2010; Tummers et al., 2015). Thus, performance information that signals increased risk or deterioration may be interpreted as requiring more immediate attention, shifting focus toward more directive forms of intervention and away from effort-intensive, deliberative coproduction.

Simultaneously, research highlights that effective coproduction depends in part on clients' ability and motivation (Jakobsen, 2013; Thomsen, 2017). However, these characteristics are not directly observable in most interactions. Instead, frontline workers must infer them from available cues, and performance information provides one such cue. When clients perform poorly relative to expected standards, frontline workers may interpret this as lower self-management capability, including limited knowledge, low motivation, or inconsistent follow-through. Consequently, poor performance information may lead frontline workers to view clients as less suitable partners for coproduction.

To better understand these potential mechanisms, this study explores the following hypotheses:

H1: Frontline workers will be more likely to perceive clients with poor performance information as requiring more urgent intervention.

H2: Frontline workers will be less likely to perceive clients with poor performance information as capable of effectively engaging in the service process.

These mechanisms may have important implications for coproduction. Coproduction is inherently effort-intensive, requiring communication, deliberation, and mutual engagement between frontline workers and clients. Thus, its feasibility depends in part on whether sufficient time and attention can be devoted to the effort and on whether clients are perceived as capable partners. Heightened urgency may reduce time for coproduction, while negative perceptions of clients' capabilities may reduce the perceived value or feasibility of coproduction. As a result, the same information that signals a need for action may simultaneously reduce the likelihood of discretionary judgments toward coproduction.

Consequently, this study explores two components of frontline discretion regarding coproduction. The first is whether clients are perceived as suitable partners for coproduction, and the second is how frontline workers form expectations about the unfolding of client interactions. The following hypotheses are proposed:
H3: Frontline workers will be less likely to perceive clients with poor performance information as suitable candidates for coproduction.
H4: Frontline workers will be less likely to expect coproduction in interactions with clients with poor performance information.

The study focuses specifically on frontline workers' discretionary judgments and does not examine clients' responses. Isolating these provider-side decisions helps clarify how frontline discretion shapes the conditions under which coproduction is initiated in everyday service interactions.

Methods

Case Selection

Primary care offers a compelling setting for examining frontline worker discretion and coproduction. Although physicians operate within a mixed public-private system, nearly 40% of Americans receive health insurance through publicly financed programs (U.S. Census Bureau, 2025). Moreover, most physicians, including primary care physicians (PCPs), accept new patients covered by these programs (Medicaid and CHIP Payment and Access Commission, 2021), making routine primary care a major site of publicly financed service delivery.

PCPs also occupy a classic street-level role. They regularly interact face-to-face with patients, exercise wide professional discretion, and make frequent, consequential decisions under time pressure and uncertainty. Because primary care is central to prevention, chronic disease management, and population health, these decisions carry implications for core public values, including equity, stewardship of public resources, and the collective well-being of communities.

Health services research conceptualizes shared decision-making (SDM) as a domain-specific form of coproduction in which physicians and patients jointly deliberate on treatment options (Batalden et al., 2016; Braddock et al., 1999). Despite broad professional support, SDM, like other forms of coproduction, is unevenly implemented, prompting extensive inquiry into its variation (Caverly & Hayward, 2020; Gravel et al., 2006; Joseph-Williams et al., 2014; Légaré & Witteman, 2013; Scholl et al., 2018).

Diabetes care exemplifies a setting where SDM is particularly important. Clinical decisions involve multiple reasonable treatment options that vary in ways patients experience quite differently, including side effects, cost, and treatment burden (Tamhane et al., 2015). Because clinical evidence alone cannot determine the "best" option, effective management requires integrating medical information with the patient's values, goals, and life circumstances. Moreover, individuals with long-standing type 1 diabetes often possess extensive experiential knowledge, making SDM both clinically appropriate and professionally encouraged. Therefore, diabetes management provides a clear opportunity to examine how client performance information shapes frontline workers' discretion.

Research Design

To test the hypotheses, I conducted a between-subjects, vignette-based experiment with U.S. PCPs. Vignettes are a well-established method in behavioral public administration research for isolating the effect of a manipulated condition while holding all other information constant (James et al., 2017). They enable

researchers to gain insight into how specific attributes influence frontline perceptions, particularly in contexts where real-world observation is challenging or ethically constrained, as in healthcare delivery.

Each respondent was randomly assigned to read one of two nearly identical patient profiles. The only manipulated variable was the patient's hemoglobin A1c (HbA1c) level, a standardized clinical metric. HbA1c reflects a patient's average blood glucose levels over the past two to three months and is widely used in diabetes management to assess how well patients adhere to and manage their treatment plans (American Diabetes Association, n.d.). As such, in frontline interpretation, it functions as institutionalized performance information.

The vignette (see Appendix A) described a 30-year-old woman with type 1 diabetes presenting for routine care. In the low-HbA1c control group, the patient's most recent HbA1c level was 7.2% (well-controlled), and in the high-HbA1c treatment group, the patient's most recent HbA1c level was 9.6% (poorly controlled). All other information was identical.

Outcome Measures

After reading the vignette, respondents completed a set of survey items about the physician-patient interaction. To capture respondents' discretionary judgments, four related outcomes were measured. Two measures assess potential interpretive responses to performance information, and two capture coproduction-related judgments.

1. Perceived Urgency

Perceived urgency is measured using respondents' recommended follow-up time for the patient. Specifically, respondents were asked: "For when is the average primary care physician likely to recommend a follow-up appointment with this patient?" Responses were recorded as continuous values in months, with ranges coded at the lower bound. This measure captures perceived urgency as reflected in clinical prioritization decisions; shorter recommended intervals indicate higher perceived urgency.

2. Perceived Capability for Effective Engagement

Perceived capability for effective engagement is measured using a composite index (Cronbach's alpha = 0.85) based on respondents' agreement with statements about how the average primary care physician would evaluate the patient's knowledge of their condition and treatment options, level of control over management, compliance with recommended practices, motivation to follow those practices, and truthfulness in reporting their behavior. Responses were recorded with a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). Full item wording is provided in Appendix B.

3. Perceived Candidacy for Coproduction

Perceived candidacy for coproduction is measured by respondents' assessments of how the average primary care physician would respond to the statement: "The patient is a good candidate for shared decision-making." Responses were recorded with a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). This measure has high face validity as an indicator of discretionary client categorization because it captures whether the respondent perceives the patient as someone with whom coproduction is appropriate, a prerequisite for coproduction in practice. This item appeared after the coproduction expectation items (described next) so that explicit SDM language in that item did not prime responses to the preceding items.

4. Coproduction Expectations

Coproduction expectations are measured using respondents' ratings of how likely the average primary care physician would be to:

1. Weigh treatment or management options together with the patient
2. Select a treatment or management option jointly with the patient
3. Reach an agreement with the patient about how to proceed.

Responses were recorded with a five-point Likert scale (1 = very unlikely, 5 = very likely) and formed a reliable composite scale ($\alpha = 0.79$). These items were adapted from validated SDM instruments (e.g., OPTION-5

[Elwyn et al., 2013]; SDM-Q-9 [Kriston et al., 2010]) and incorporate components of coproduction without invoking the term "shared decision-making."

All outcome measures used indirect questioning by asking respondents how they believed the *average* primary care physician *would* respond to the patient. This technique is widely used in social psychology and behavioral research to reduce social desirability bias (Fisher, 1993). SDM is promoted as a professional ideal in medicine, taught during training, embedded in quality metrics, and normatively framed as the "right" way to practice. Thus, direct self-reports risk eliciting normatively desirable but behaviorally inflated responses.

Indirect questioning also elicits perceptions of professional norms, which meaningfully shape frontline discretion (Maynard-Moody & Musheno, 2003). Under conditions of uncertainty or time pressure, workers often anchor their judgments to what they believe peers typically do as they make sense of their work (Sandfort, 2000; Zacka, 2017). Furthermore, research on the false consensus effect shows that individuals' expectations of peer behavior strongly predict their own behavioral intentions (Ross et al., 1977). Taken together, these considerations suggest that responses about what "average PCPs would do" provide a conservative but theoretically grounded proxy for respondents' own discretionary judgments.

Analytical Approach

Causal identification is based on the random assignment of participants to one of two vignette conditions. I first estimated the average treatment effect of HbA1c manipulation on each outcome using independent-samples *t*-tests, which constitute the primary hypothesis tests. I then estimated ordinary least squares regression models including physician- and practice-level covariates to assess robustness and improve precision. Full descriptions and coding details for these covariates are available in Appendix C. All models were estimated in Stata 18, and statistical significance was evaluated using two-sided tests ($p < .05$; $p < .01$; $p < .001$).

Sample and Recruitment

Between January and April 2023, I invited 3,384 U.S. PCPs to participate via personalized email. Contact information was sourced from publicly available directories. Because such lists disproportionately represent academic institutions, a sizable portion of recruitment emails were sent to physicians affiliated with academic medical centers.

An a priori power analysis conducted using G*Power 3 (Faul et al., 2007) indicated that approximately 200 completed responses were required to detect a small-to-moderate treatment effect (Cohen's $d = 0.40$) with 80% power at $\alpha = 0.05$. Recruitment continued until this target was reached; no responses were excluded to meet this target. In total, 200 physicians provided completed responses and were included in the final sample (≈6% response rate). Respondents represented 29 U.S. states across all four Census regions: Northeast (27.5%), West (26.5%), Midwest (24%), and South (22%).

Although this sampling approach limits claims about population representativeness, random assignment within the experiment supports internal validity. In the final sample, participants were evenly distributed across conditions (102 in the low-HbA1c group and 98 in the high-HbA1c group). A balance table (Table 1) confirms that randomization was successful and that the groups did not differ meaningfully in demographic, professional, or attitudinal characteristics prior to exposure. Descriptive statistics for the full sample are provided in Appendix D.

The study was reviewed by the University of Washington Human Subjects Division and determined to qualify for exempt status under Category 2 (STUDY00015730). The study was not preregistered.

Table 1. Balance Table

Variable	Low HbA1c (n = 102)	High HbA1c (n = 98)	Mean Difference
Perceived discretion, *M* (SD)	2.61 (0.51)	2.54 (0.59)	-0.07
Perceptions of SDM, *M* (SD)	3.84 (0.69)	3.81 (0.70)	-0.03
Burnout, %	20%	20%	0.01
Close friend with T1D, %	31%	37%	0.06
Relative with T1D, %	18%	20%	0.03
Housemate with T1D, %	2%	2%	0.00
Respondent with T1D, %	2%	0%	-0.02
Tenure in years, *M* (SD)	16.91 (11.30)	16.89 (11.18)	-0.02
Female, %	56%	48%	-0.08

Note: SDM = shared decision-making; T1D = Type 1 diabetes. Percentages are rounded to the nearest whole number; mean differences are calculated using unrounded values.

Results

Perceived Urgency (H1)

Consistent with H1, respondents indicated that the average PCP would recommend a shorter (i.e., more urgent) follow-up for the high-HbA1c patient ($M = 2.57$ months, $SD = 1.10$) than for the low-HbA1c patient ($M = 3.34$ months, $SD = 1.32$). This difference was statistically significant, $t(198) = 4.48$, $p < .001$.

Perceived Capability for Effective Engagement (H2)

Consistent with H2, respondents indicated that the average PCP would perceive the high-HbA1c patient as less capable of effective engagement ($M = 2.95$, $SD = 0.65$) than the low-HbA1c patient ($M = 3.60$, $SD = 0.63$). This difference was statistically significant, $t(198) = 7.21$, $p < .001$.

While these hypotheses provide insight into potential interpretive mechanisms, the study does not formally test mediation, and results should be interpreted accordingly.

Perceived Candidacy for Coproduction (H3)

Consistent with H3, respondents indicated that the average PCP would be more likely to view the low-HbA1c patient as a good candidate for shared decision-making (M = 4.26, SD = 0.82) than the high-HbA1c patient (M = 3.97, SD = 1.00). This difference was statistically significant, $t(198) = 2.29$, $p = .023$.

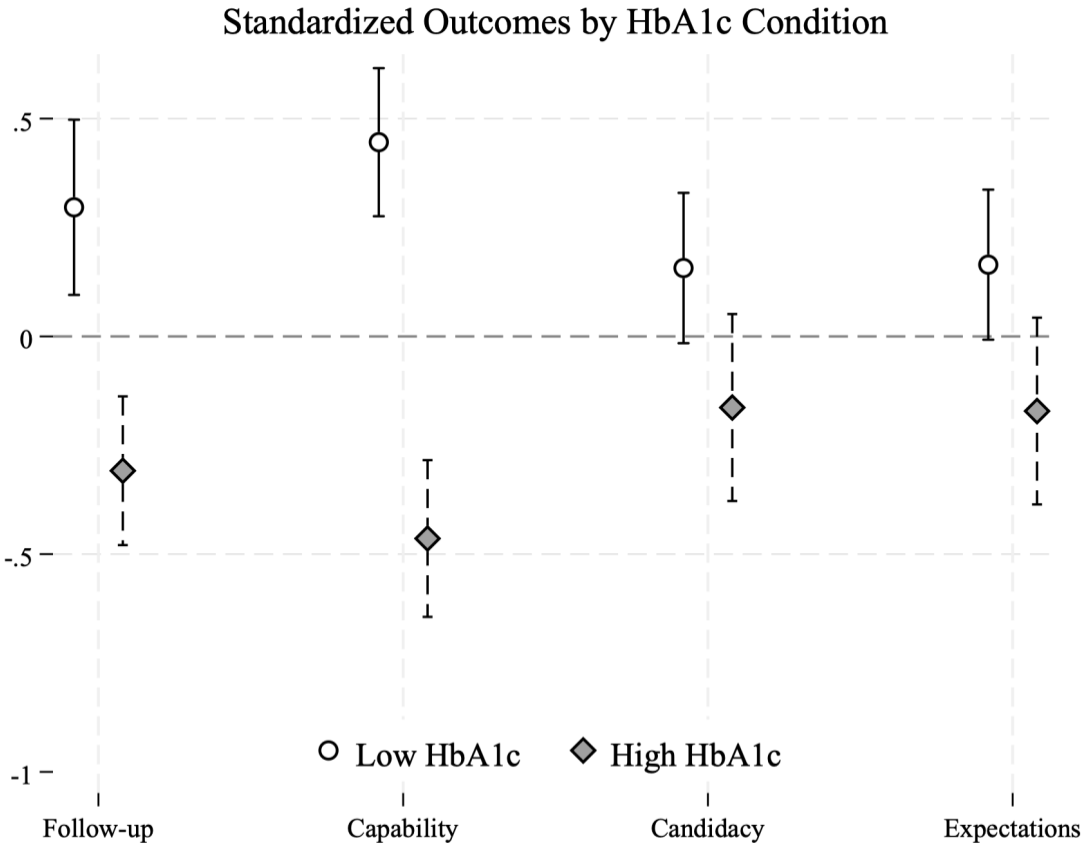
Coproduction Expectations (H4)

Consistent with H4, respondents indicated that the average PCP would be more likely to engage in coproduction with the low-HbA1c patient (M = 3.70, SD = 0.68) than with the high-HbA1c patient (M = 3.44, SD = 0.83). This difference was statistically significant, $t(198) = 2.40$, $p = .017$.

Together, these results reveal a consistent pattern. Poor performance information increases perceived urgency while simultaneously worsening perceptions of clients' capability to engage effectively. Consistent with the proposed mechanisms, these shifts are accompanied by reductions in both perceived candidacy for coproduction and expectations that coproduction will occur. In other words, the same performance information that signals a need for intervention may also shift frontline workers' discretionary judgments away from coproduction.

As shown in Figure 1, these effects are largest for perceived capability, followed by perceived urgency, with smaller but consistent differences for perceived candidacy and coproduction expectations. Across all outcomes, effects persist in regression analyses and remain significant after adjustment for relevant physician- and practice-level covariates (see Appendices E–H).

Figure 1. Standardized Outcomes by HbA1c Condition



Note: Error bars show 95% confidence intervals. Lower follow-up values indicate greater perceived urgency.

Discussion and Conclusion

This study examined how client performance information influences frontline workers' discretionary judgments about coproduction. The results show that a single piece of performance information can meaningfully alter both how frontline workers interpret a case and how they expect to engage with the client. Poor performance information increases perceived urgency and leads to more negative evaluations of the client's capability to engage effectively in the service process. Additionally, it reduces perceived suitability for coproduction and lowers expectations that coproduction will occur. These findings contribute to public administration scholarship by reframing coproduction as a process shaped by frontline workers' interpretations of clients and their discretionary judgments about how to engage with them. While coproduction requires mutual participation, whether it occurs in practice is partially shaped by how frontline workers evaluate clients. These results identify performance information as one cue in this process.

This pattern is consistent with multiple interpretive processes, two of which are explored here. First, poor performance information may prompt more time-sensitive action, leading frontline workers to adopt more directive approaches. Second, respondents may interpret poor performance information as reflecting lower client capability to engage effectively in the service process, making coproduction appear less feasible or effective. Coproduction requires communication, deliberation, and sustained engagement, while frontline workers face competing demands and limited resources. This pattern echoes mechanisms documented in existing research, where clients perceived as difficult, noncompliant, or unlikely to succeed receive fewer resources or opportunities (Maynard-Moody & Musheno, 2003; Raaphorst & Van de Walle, 2018). It may also reflect a version of cream-skimming, in which coproduction is selectively extended to clients perceived as more likely to succeed (Döring & Jilke, 2023). Together, these processes may shift discretionary judgments away from coproduction. Importantly, these dynamics may run counter to the goals of coproduction, since clients with poor performance information may be the ones most likely to face underlying barriers that coproduction is designed to identify and address (Jakobsen & Andersen, 2013). In this sense, the very clients for whom coproduction is discouraged may also be those who stand to benefit most from it.

Several limitations should be acknowledged. First, vignette-based designs offer strong internal validity but cannot fully replicate the complexity of real interactions. Second, this study relies on indirect questioning to reduce social desirability bias. Although theoretically justified, the outcomes capture respondents' perceptions of typical professional behavior rather than direct self-reports. Finally, generalizability may be limited to contexts where client-level performance information is a central feature of frontline work. However, similar dynamics may arise in other contexts; for example, teachers assess test scores, caseworkers interpret employment histories, and judges consider algorithmic risk scores. In these contexts, client-level performance information may influence discretionary decisions about coproduction.

Despite these limitations, these findings underscore how a single piece of performance information can quietly alter the terms of engagement between frontline workers and clients. As public administration continues to promote coproduction as a strategy for improving service quality and responsiveness, it must also account for the discretionary processes through which opportunities for coproduction are allocated. Understanding how performance information is interpreted and how it impacts frontline judgments offers a more realistic account of when and for whom coproduction is initiated.

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Appendix A: Patient Vignette Used in Experiment

The patient is a 30-year-old female with Type 1 diabetes mellitus who was diagnosed at age 7. She currently uses a fingerstick glucometer between 1 and 3 times a day. Her most recent hemoglobin A1C is 7.2%/9.6%*, with multiple daily injections (including long-acting insulin analogues).

The patient says she counts carbs at each meal but sometimes rounds down or artificially decreases the carbohydrate content to prevent lows. She has a history of non-proliferative diabetic retinopathy and hypoglycemic unawareness. She had a severe episode of hypoglycemia two years ago while driving, which required intervention by paramedics. She tried insulin pump therapy 1.5 years ago, but the trial was unsuccessful as she found it too intrusive.

The patient lives with her spouse and works in an office setting. She walks outside for 30 minutes a day and does yoga once a week. She is here for routine care and has had a relationship with her current primary care physician for the last 5 years.

*Note: * indicates experimentally manipulated information. Respondents saw either 7.2% or 9.6%, depending on experimental condition.*

Appendix B: Additional Outcome Measure Details

Perceived capability of effective engagement in the service process is measured using a composite index (Cronbach's alpha = 0.85) based on respondents' agreement with statements about how the average primary care physician would respond (on a five-point Likert scale from 1 = strongly disagree to 5 = strongly agree) to the following statements:

1. The patient is knowledgeable about the short-term complications of diabetes.
2. The patient is knowledgeable about the long-term complications of diabetes.
3. The patient is knowledgeable about recommended diabetes self-management practices.
4. The patient is knowledgeable about their treatment and management options.
5. The patient is in control of their diabetes management.
6. The patient is complying with recommended diabetes self-management practices.
7. The patient is motivated to self-manage their diabetes.
8. The patient is truthful about their diabetes self-management.

Appendix C: Covariates

Perceived discretion was measured using a four-item composite scale ($\alpha = 0.69$) that measured the extent to which respondents felt they had control over how they did their work and the pace at which they did their work, as well as a say in choosing who they worked with, and a say in which patients they saw, with responses on a four-point Likert scale (1 = not at all, 4 = to a great extent). Perceptions of SDM were measured using a four-item composite scale ($\alpha = 0.78$) that measured the respondents' perspectives on physician familiarity with, support of, and implementation of SDM, as well as their perspectives on whether SDM is easy to understand for physicians, with responses on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). Burnout symptoms were operationalized using three items reflecting emotional exhaustion, depersonalization or cynicism toward patients, and a reduced sense of personal accomplishment (Maslach & Jackson, 1981). Respondents were coded as exhibiting symptoms of burnout if they scored above the sample median on emotional exhaustion and cynicism and below the median on personal accomplishment. Additional covariates included tenure in medicine (in years), self-reported gender identity, practice type, U.S. state of practice, and proximity to type 1 diabetes (defined as whether the respondent or a close friend, family member, or housemate had the condition).

Appendix D: Descriptive Statistics for Survey Respondents (N = 200)

Variable	Mean	SD	Min	Max
Perceived discretion	2.58	0.55	1.25	4
Perceptions of SDM	3.82	0.69	1.75	5
Burnout, %	20%			
Tenure in years	16.90	11.21	1	55
Age in years	46.49	11.13	30	81
Female, %	52%			
Close friend with T1D, %	34%			
Relative with T1D, %	19%			
Housemate with T1D, %	2%			
Respondent with T1D, %	1%			
Region of Residence				
Northeast	28%			
West	27%			
Midwest	24%			
South	22%			
Main Medical Practice				
Academic Medical Settings	56%			
Hospital and Related Services	17%			
Group Practices	15%			
Veterans Affairs (VA)	6%			
Primary Care Facilities	2%			
Federally Qualified Health Centers	2%			
Independent Practices	1%			
Managed Care Organizations	1%			
Other	1%			
Missing	1%			

Note: SDM = shared decision-making; T1D = Type 1 diabetes; region categories come from the U.S. Census Bureau; percentages may not sum to 100 due to rounding.

Appendix E: Linear Regression Estimates Predicting Perceived Urgency (H1)

Variable	Model 1	Model 2	Model 3
High HbA1c (ref. = Low)	-0.77*** (0.17)	-0.83*** (0.18)	-0.83*** (0.18)
Tenure (years)		-0.00 (0.01)	-0.00 (0.01)
Perceived discretion		-0.13 (0.16)	-0.11 (0.18)
Perceptions of SDM		0.16 (0.13)	0.16 (0.14)
Burnout		-0.04 (0.23)	-0.02 (0.24)
Proximity to T1D	No	Yes	Yes
Practice type and region controls	No	No	Yes
Constant	3.34*** (0.12)	3.09*** (0.74)	2.86*** (0.78)
R^2	0.09	0.12	0.17
N	200	198	198

Note: Standard errors in parentheses. Models 2 and 3 exclude two observations with missing covariate data. T1D = Type 1 diabetes. * $p < .05$; ** $p < .01$; *** $p < .001$.

Appendix F: Linear Regression Estimates Predicting Perceived Capability for Effective Engagement (H2)

Variable	Model 4	Model 5	Model 6
High HbA1c (ref. = Low)	-0.65*** (0.09)	-0.65*** (0.09)	-0.61*** (0.09)
Tenure (years)		-0.01 (0.00)	-0.01 (0.00)
Perceived discretion		-0.02 (0.09)	0.05 (0.09)
Perceptions of SDM		0.17* (0.07)	0.16* (0.07)
Burnout		0.06 (0.12)	0.14 (0.12)
Proximity to T1D	No	Yes	Yes
Practice type and region controls	No	No	Yes
Constant	3.60*** (0.06)	3.11*** (0.39)	2.90*** (0.41)
R^2	0.21	0.25	0.30
N	200	198	198

Note: Standard errors in parentheses. Models 5 and 6 exclude two observations with missing covariate data. T1D = Type 1 diabetes. * $p < .05$; ** $p < .01$; *** $p < .001$.

Appendix G: Linear Regression Estimates Predicting Perceived Candidacy for Coproduction (H3)

Variable	Model 7	Model 8	Model 9
High HbA1c (ref. = Low)	-0.30* (0.13)	-0.28* (0.13)	-0.26* (0.13)
Tenure (years)		0.00 (0.01)	-0.00 (0.01)
Perceived discretion		-0.03 (0.12)	0.07 (0.12)
Perceptions of SDM		0.36*** (0.09)	0.32** (0.10)
Burnout		0.16 (0.17)	0.18 (0.17)
Proximity to T1D	No	Yes	Yes
Practice type and region controls	No	No	Yes
Constant	4.26*** (0.09)	3.07*** (0.54)	2.99*** (0.55)
R^2	0.03	0.13	0.24
N	200	198	198

Note: Standard errors in parentheses. Models 8 and 9 exclude two observations with missing covariate data. T1D = Type 1 diabetes. * $p < .05$; ** $p < .01$; *** $p < .001$.

Appendix H: Linear Regression Estimates Predicting Coproduction Expectations (H4)

Variable	Model 10	Model 11	Model 12
High HbA1c (ref. = Low)	-0.26* (0.11)	-0.22* (0.10)	-0.22* (0.10)
Tenure (years)		0.01* (0.00)	0.01 (0.00)
Perceived discretion		0.02 (0.09)	0.08 (0.10)
Perceptions of SDM		0.46*** (0.07)	0.47*** (0.08)
Burnout		0.07 (0.13)	0.17 (0.13)
Proximity to T1D	No	Yes	Yes
Practice type and region controls	No	No	Yes
Constant	3.70*** (0.07)	1.74*** (0.42)	1.63*** (0.44)
R^2	0.03	0.21	0.28
N	200	198	198

Note: Standard errors in parentheses. Models 11 and 12 exclude two observations with missing covariate data. T1D = Type 1 diabetes. * $p < .05$; ** $p < .01$; *** $p < .001$.