C Additional Modeling Notes

C.1 Solving the Utility Maximization Problem

In the final choice stage of the model, households choose medical spending m^*_{it} based on the realization of their acute shocks $\{\lambda_{it}, m^{\text{CH}}_{ft}\}$ and their type parameters $\{p_{it}, \omega\}$. Their expected utility is given by

$$\begin{aligned} u_{it}(m_{it}) = p &\left[(\alpha_1 m_{it} + \alpha_2 m^{\text{CH}}_{ft} - \lambda_{it}) - \frac{1}{2\omega}(\alpha_1 m_{it} + \alpha_2 m^{\text{CH}}_{ft} - \lambda_{it})^2 - c_j(m_{it})\right] \\ &+ (1-p)\left[(m_{it} - \lambda_{it}) - \frac{1}{2\omega}(m_{it} - \lambda_{it})^2 - c_j(m_{it})\right] + \varepsilon_{ijt}. \end{aligned} \tag{1}$$

Ignoring the idiosyncratic shock ε_{ijt}, the first order condition for utility maximization implies that optimal spending is given by:

$$m^*_{it} = \frac{1}{1 + p_{it}(\alpha_1 - 1)}\left[\lambda_{it} + \omega(1 - c'_j(m_{it}) + p_{it}\left((\alpha_1 - 1)\omega - \alpha_2 m^{\text{CH}}_{ft}\right)\right]. \tag{2}$$

Without the expected utility framework or allowing for state-dependent utility across states, this reduces to the typical solution of $m^*_{it} = \lambda_{it} + \omega(1 - c'_j(m_{it})$. Here, $c'_j(m_{it})$ depends on the optimal level of spending, with $c' = 1$ when households choose a level of spending below the deductible, and then declining to $c' = c < 1$ when OOP spending is between the deductible and the OOP max, and $c' = 0$ otherwise. The piecewise linear structure of the cost-sharing scheme does not yield a closed form solution for m^*_{it}, but rather implies a discrete set of possible solutions that must be evaluated.

C.2 Alternate Interpretations of p

The evidence presented in Section 3 of the main text suggests that health events generate spending responses as household members reevaluate their health risks. This leads to the simple interpretation of the dynamic learning parameter p_{it} as a probability of an adverse health event occurring. However, to the extent that other informational effects affect spending choices in ways that are separate from health risk information, moral hazard effects, or salience effects, these effects may "load" onto the estimated p_{it} parameter, affecting its interpretation. These informational effects may include physician relationship building, increased comfort obtaining care covered by an insurer, or other, more general health information effects, which alter consumer *preferences* for health care rather than their *beliefs* about risk.

The transition probability parameter p_{it} can therefore be interpreted, in part, as an adjustment to consumer preferences for care in addition to risk beliefs. Consider equation 1. If we assume that $\alpha_1 \approx 1$, as estimated in Section 5 of the text, the equation reduces to:

$$u_{it}(m_{it}) = m_{it} - \lambda_{it} - c_j(m_{it}) + p_{it}\alpha_2 m_{ft}^{\mathrm{CH}} - \frac{p_{it}}{2\omega}(m_{it} + \alpha_2 m_{ft}^{\mathrm{CH}} - \lambda_{it})^2 - \frac{1-p_{it}}{2\omega}(m_{it} - \lambda_{it})^2. \quad (3)$$

Hence, p_{it} can be construed, together with the estimated parameter α_2, to be representative of the preference weight individuals place on chronic care, relative to all non-chronic care. In this setting, the informational effect of health shocks increases individual preferences for chronic care.