

$$\begin{aligned}
& \mathbb{P} \left\{ A_{l,i} = d_{l,i} \left(\overline{O}_{l,i}, \overline{A}_{l-1,i} \right) \mid \overline{U}_{l,i} = \overline{1}, \overline{Y}_{l,i} = \overline{0}, \overline{Z}_{l,i} = \overline{0}, \overline{X}_{l,i}, C_{d,l-1,i} = 1 \right\} \\
&= \mathbb{P} \left\{ A_{l,i} = 1 \mid \overline{U}_{l,i} = \overline{1}, \overline{Y}_{l,i} = \overline{0}, \overline{Z}_{l,i} = \overline{0}, \overline{X}_{l,i}, C_{d,l-1,i} = 1 \right\}^{d_{l,i} \left(\overline{O}_{l,i}, \overline{A}_{l-1,i} \right)} \\
&\times \left[1 - \mathbb{P} \left\{ A_{l,i} = 1 \mid \overline{U}_{l,i} = \overline{1}, \overline{Y}_{l,i} = \overline{0}, \overline{Z}_{l,i} = \overline{0}, \overline{X}_{l,i}, C_{d,l-1,i} = 1 \right\} \right]^{1-d_{l,i} \left(\overline{O}_{l,i}, \overline{A}_{l-1,i} \right)} .
\end{aligned}$$