$$\hat{\mu}'(0) \mid \hat{\Theta} = k$$

$$\hat{\Theta} = k \iff \hat{\mu}'(\hat{\Theta}) = 0.$$

so $\hat{\mu}'(0) \mid \hat{\Theta} = k$

$$=_d \ \hat{\mu}'(0) \mid \hat{\mu}'(\hat{\Theta}) = 0$$
$$\hat{\mu}'(k) = 0.$$

$$\frac{\hat{\mu}'(0)}{\hat{\mu}''(0^*)} \qquad \left(\begin{matrix} \hat{\mu}'(0) \\ \hat{\mu}'(k) \end{matrix} \right) \sim N \left(\begin{matrix} \mu'(0) \\ \mu'(k) \end{matrix} \overset{=0 \ \text{interesting}}{,} \Sigma \right)$$

$$= N(\overset{\circ}{\mu'(k)}, \Sigma)$$

$$\Rightarrow \hat{\mu}'(0) \mid \hat{\mu}'(k) = 0$$

$$\quad = \ \sim \ \underline{\text{normal distribution}}$$

$$\text{or cond}^n \text{ on}$$
$$\hat{\mu}'''(\hat{\Theta})) \qquad \text{sort of indep of } \underline{\mu'(0)}!$$
$$\text{as } \mu'' \perp \mu' \ \underline{(\text{pairwise})}$$