$$adm_{pop} = \sum adm_{age\text{-}grp} * pop\ prop_{age\text{-}grp}$$

$$= adm_1 * p_1 + adm_2 * p_2 + \dots$$

we have ratios $\frac{adm2}{adm1}$, $\frac{adm3}{adm1}$ etc. call

$$\therefore = adm_1 (p_1 + p_2 * ratio_2 + \dots)$$

$$\frac{adm1}{adm_{pop}} = \frac{1}{p_1 + p_2 * ratio_2 + \dots}$$

$$\downarrow$$

$$\frac{adm2}{adm\ pop} = ratio_2 * \frac{adm1}{adm\ pop}$$