A semigroup $\alpha = \{\alpha_t\}_{t \geq 0}$ of $*$-endomorphisms of $B(H)$ is called an $E_0$-semigroup if it is weakly continuous in $t$ and $\alpha_t(I) = I$ for all $t \geq 0$. We say $\alpha$ is prime if, whenever $\alpha$ is cocycle equivalent to $\beta \otimes \gamma$ for some $E_0$-semigroups $\beta$ and $\gamma$, it follows that $\beta$ or $\gamma$ is a semigroup of $*$-automorphisms. By considering $E_0$-semigroups constructed using Powers’ theory of CP-flows, we exhibit an uncountable family of $E_0$-semigroups of type II$_0$. This is joint work with Daniel Markiewicz and Robert Powers. (Received September 22, 2011)