In any quantum field theory, the energy flux at a point of spacetime can be negative. This would produce a repulsive gravitational field causing nearby light rays to defocus. This in turn threatens to produce a variety of exotic phenomena including traversable wormholes, warp drives, time machines, and evasion of singularity theorems. I will describe a new "quantum focusing conjecture" that prevents such pathologies. In the flat spacetime limit it reduces to a novel lower bound on the energy density, which can be proven for several classes of field theories.