Mammography dosimetry has evolved significantly during the past thirtyfive years. The dose to the ACR phantom is routinely evalutated during the medical physicist's annual equipment surveys. This evaluation is required by the Mammography Qualtiy Standards Act of 1992 and associated FDA Regulations. Presented is an overview of the evolution of mammography dosimetry since 1965. At present, mammography dose is typically calculated from the product of the entrance skin exposure (ESE) and normalized average glandular dose. Discussed are different approaches and associated errors in determining ESE and normalized average glandular dose. Also discussed is the dependence of average glandular and normalized average glandular dose on kVp, HVL, target/filter, breast thickness, breast composition and film density. In addition to determining the dose to the ACR phantom, the medical physicist also often presents dosimetry data for different breast thicknesses and clinical techniques. A time efficient approach for accomplishing this is presented. Also presented is a practical approach for using the ACR phantom dose to benchmark screen-film-processing performance.