

Purpose: Flat panel detector failure in digital mammography systems can result in significant added operating expense, clinical down-time and added personnel time for trouble-shooting and acceptance testing prior to clinical use. The purpose of this study is to review modes of full-field digital mammography detector failure and detector lifetime encountered in a clinical setting.

Methods: Mammography detector history was maintained over 6 years for 3 facilities. When detector failure occurred, the reason for detector rejection and duration of detector lifetime were determined.

Results: Out of the 11 digital mammography units followed during the review period, a total of 15 detector failures occurred. All rejected detectors and failure modes were verified by the manufacturer. Detector failure modes included dead pixel clusters (10), excessive ghosting (3), gate failure (1), detector crystallization (1) and charge build-up defect (1) (One detector exhibited 2 different failure modes). Detector lifetime ranged from a minimum of 1 month (gate failure) to a maximum of 36 months (detector still in clinical use). The mean detector lifetime was 15 months.

Conclusions: Data from multiple digital mammography units and facilities collected over 6 years show that relatively short detector lifetime is common. Compiled detector failure data is useful for comparing ownership expense expected for different digital mammography models and to assist in determination if service contract coverage of detector replacement is advisable.