

What's NEXT?

The Nationwide Evaluation of X-Ray Trends (NEXT) is a national program conducted annually to measure the x-ray exposure that a standard patient receives for selected x-ray examinations. This program is conducted jointly by the Conference of Radiation Control Program Directors (CRCPD), an association of state and local radiation control agencies, and the Food and Drug Administration's (FDA) Center for Devices and Radiological Health (CDRH).

Facilities are randomly selected and the surveys are performed by personnel from the participating states. Each projection is surveyed utilizing a clinically validated exposure equivalent phantom representing a standard reference patient. This standard NEXT patient stands 172 cm (5 ft, 8 in) in height, and weighs 74.5 kg (164 lbs). The phantom used for chest is equivalent to a patient thickness, measured P/A, of 23 cm (9 in).

In 1994 the selected examination was the P/A Chest. Over 300 facilities were surveyed, with the sample divided equally between hospitals and non-hospital facilities. Specific information was obtained pertaining to the equipment, facility work load, and radiographic technique. Information regarding such items as film/screen combination, grid type, and beam quality is also collected. X-ray output was determined for calculation of P/A entrance exposure using the NEXT phantom and film processing was evaluated. The procedure followed in 1994 was essentially the same as that used for the 1984-86 NEXT chest studies.

The information contained herein is for guidance. The implementation and use of the information and recommendations are at the discretion of the user. The mention of commercial products, their sources, or their use in connection with material reported is not to be construed as either an actual or implied endorsement by CRCPD or CDRH.

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SURVEY RESULTS

YOUR FACILITY

kVp _____
mAs _____
ESE _____
Processing speed _____
STEP* test result _____

1994 Survey Findings

mean ESE for kVp >90:
with grid = 17.1, non-grid = 10.7
mean ESE for kVp 60 - 90:
with grid = 26.1, non-grid = 10.5
mean kVp: hospitals = 110
private practice = 93
mean mAs: hospitals = 5.26
private practice = 10.3
mean HVL: hospitals = 4.1
private practice = 3.5
mean processing speed:
hospitals = 115
private practice = 107

Previous Findings

| | Hospitals 1984 | Private 1986 |
|-----------------------------|-------------------|-----------------|
| mean ESE with grid | 17.7 | 19.9 |
| non-grid | 10.1 | 13.7 |
| mean kVp | 104 | 87 |
| mean HVL | 4.1 | 3.4 |
| mean processing speed | 97 | 85 |

Nationwide Evaluation of X-Ray Trends

(NEXT)

1994 P/A Chest X-Ray Data

Conference of Radiation
Control Program Directors

and

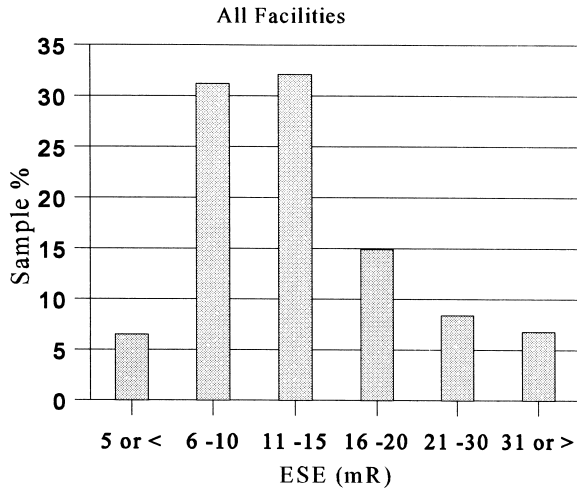
The Center for Devices and
Radiological Health

U.S. DEPARTMENT OF HEALTH
AND HUMAN SERVICES
Public Health Service
Food and Drug Administration

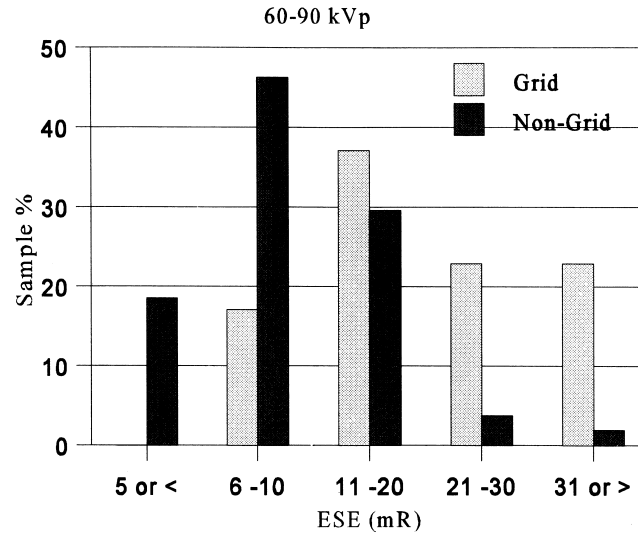
* Sensitometric Technique for the Evaluation of Processing

1994 P/A Chest X-Ray Data

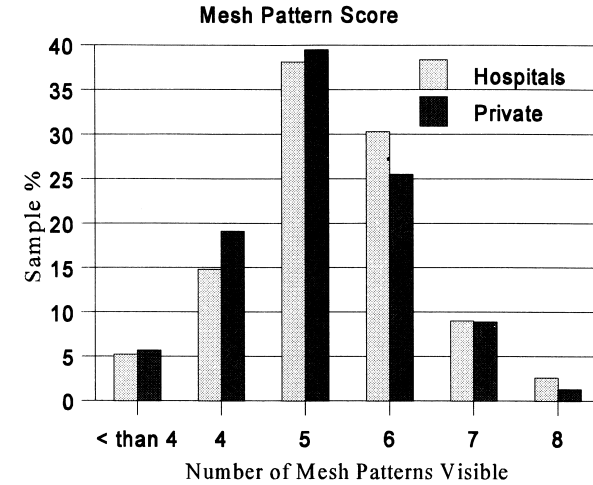
ESE Distribution



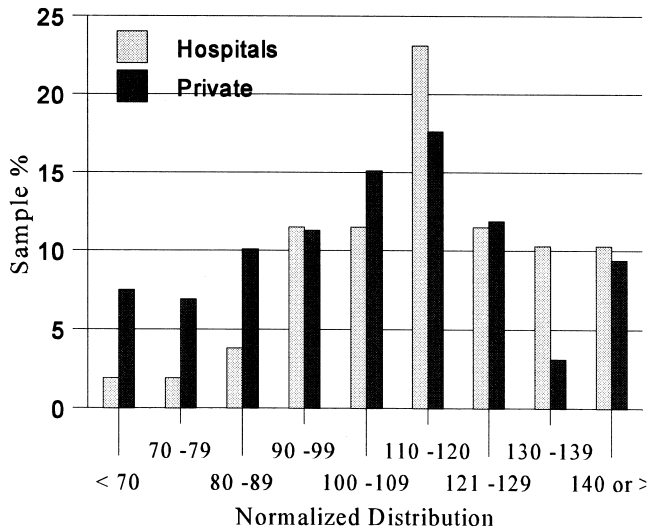
ESE Grid/Non-Grid



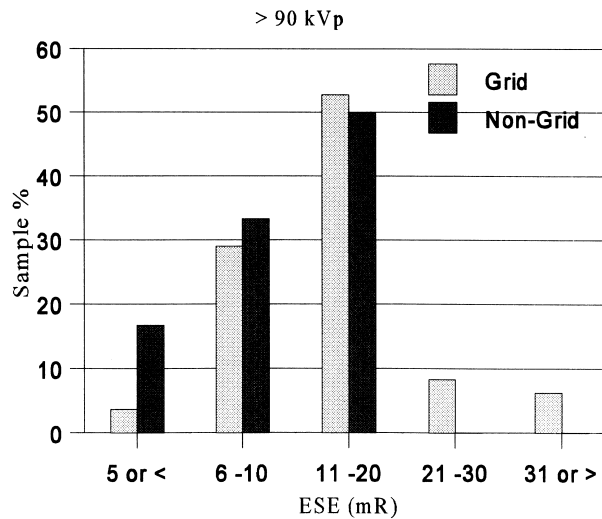
High Contrast Resolution



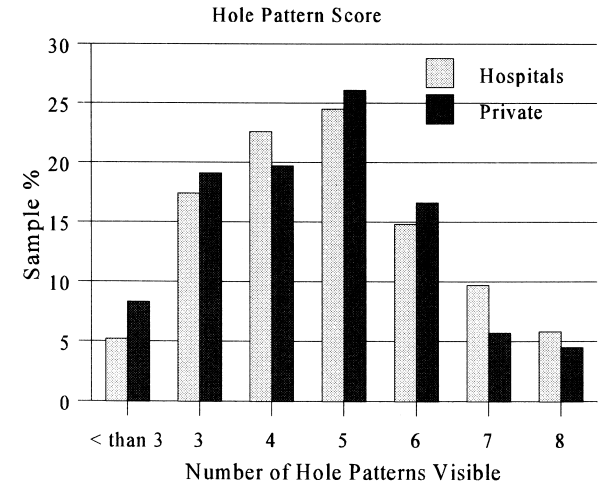
Film Processing Speed



ESE Grid/Non-Grid



Low Contrast Sensitivity



Normal Processing Speed = 80-120