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## FAX COVER SHEET

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RE: 1981 NKF Fluoridation Stance

MEMO:

Position paper is attached.

**POSITION PAPER ON FLUORIDATION**

**National Kidney Foundation**

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Fluoridation of community water supplies to an "optimal" concentration is assumed to be a practical public health measure resulting in a substantial reduction in the incidence of dental caries.<sup>1</sup> Because of the important role of the kidney in the excretion of ingested fluoride, serious questions regarding the safety of fluoride for patients with renal insufficiency, particularly for patients on maintenance dialysis, have arisen in recent years.

Studies indicate that during the advanced stages of renal failure, blood and bone fluoride concentrations increase. However, only seven cases of fluorosis have been reported in the medical literature and all of these occurred in patients with renal disease who were exposed to naturally occurring fluoride concentrations exceeding recommended levels over a prolonged period. The possible role of fluoride in modifying the evolution of bone disease before the initiation of hemodialysis is not clear, although fluoride does not appear to be a major factor. Patients on maintenance dialysis who drink fluoridated water and are treated with the artificial kidney using dialysate prepared with fluoridated water receive much more fluoride than normal persons. Despite this, no cases of typical skeletal fluorosis have been reported in a large population of patients who have undergone this form of treatment worldwide for prolonged periods during the past decade.<sup>2</sup>

In certain centers there appears to be an increase in a form of bone disease leading to spontaneous fractures and an increase in unmineralized bone in patients who are exposed to fluoride which has been prepared with tap water that has not been further purified. However, tap water frequently contains a number of substances which may have a skeletal effect, including aluminum.<sup>3</sup> The only prospective controlled study failed to demonstrate a statistically significant fluoride effect on bones over a period of 2.5 years.<sup>4</sup>

Nine accidents involving the introduction of excess fluoride into community water supplies in the United States have been reported during the last decade. In all but one of these accidents, only a small proportion of the population became ill with mild transient gastrointestinal symptoms. After a spillage accident in Annapolis, Maryland in 1979, in which the fluoride concentration of tap water reached 50 times the recommended level, only a small percentage of the total population exposed became ill with gastrointestinal symptoms. However, for eight persons who were undergoing artificial kidney treatments at the time, the use of the high-fluoride water in preparation of the dialysate resulted in a marked elevation of serum concentrations of fluoride and symptoms of fluoride intoxication. In addition, one patient suffered a cardiorespiratory arrest which was reversible and another patient died within 24 hours of exposure, which presumably also was related to acute fluoride intoxication.<sup>5</sup>

It is recommended that (1) for patients undergoing long term dialysis, water used for preparation of dialysate be treated and appropriately monitored according to the AAMI proposed standards for hemodialysis systems.<sup>6</sup> In addition, (2) water treatment officials should develop and maintain emergency plans so that susceptible individuals and health officials are promptly notified of the occurrence of any situations involving water used for dialysis which may pose a major health risk. (3) Fluoride concentration monitoring at water treatment plants should be capable of detecting the actual fluoride levels directly. (4) It would also seem prudent to monitor the fluoride intake of patients with chronic renal impairment, particularly those living in areas of high naturally occurring fluoride, children, those with excessive fluoride intake, and those with prolonged disease. There is insufficient evidence at this time to recommend the use of fluoride-free drinking water for all patients with renal disease.

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