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N01-Anesthetics

PP-022

Background



In the pediatric surgery unit, low doses of IV analgesic and anaesthetic drug are daily used for anesthesia. Thus, stock solution (SS) syringes are prepared each morning in post anesthesia care units, resulting from a 10-fold dilution of commercial products. SS syringes are then extemporaneously diluted all day long by a factor of 2, 2.5, 5 and 10 to obtain serial dilution (SD) syringes administered in the operating ward.

Purpose

In the frame of the assessment of professional practices, concentrations of ketamine (Ket), remifentanil (Rem) and sufentanil (Suf) were quantified in prepared syringes in order to evaluate the preparation accuracy of the anesthetist staff before injection to children.

Material and methods

Care unit

- Over a one-month period, Ket, Rem and Suf samples were collected from SS and SD syringes

Pharmacy

- Samples were quantified

- Results were expressed by bias (%)

SS and SD syringes

Ketamine

Sufentanil

Remifentanil

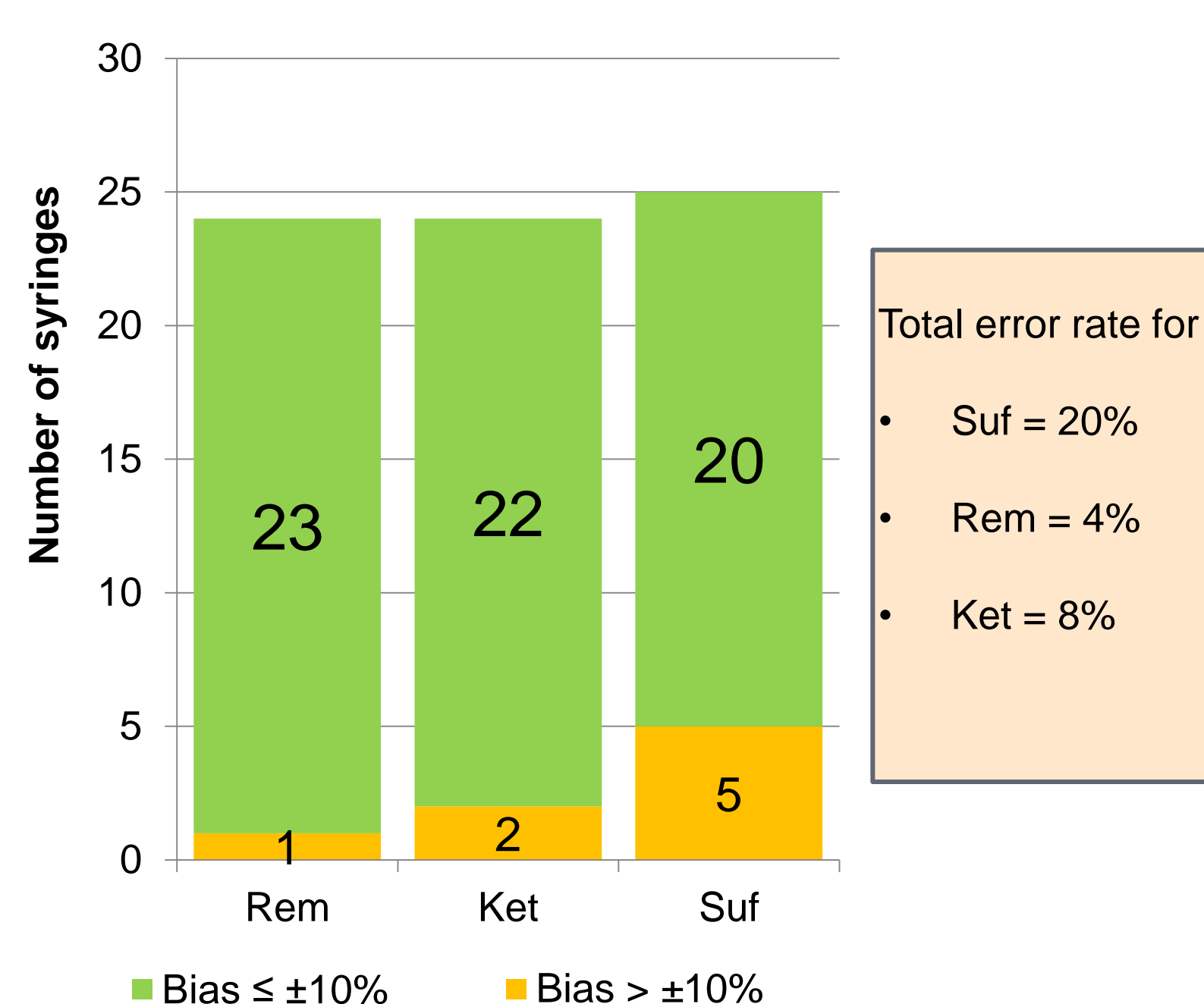
HPLC-UV-DAD method

Acceptance limits : biases of $\pm 10\%$ of theoretical concentration

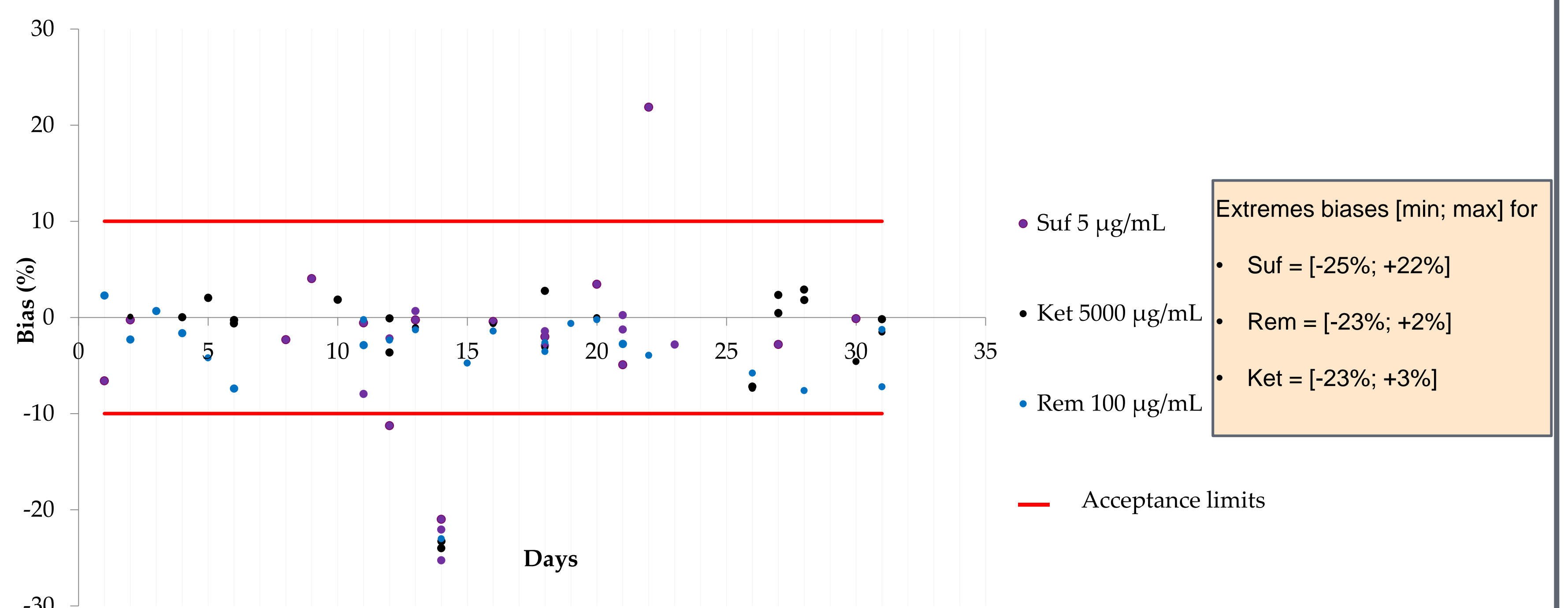
Results

STOCK SOLUTION SYRINGES

73 SS syringes



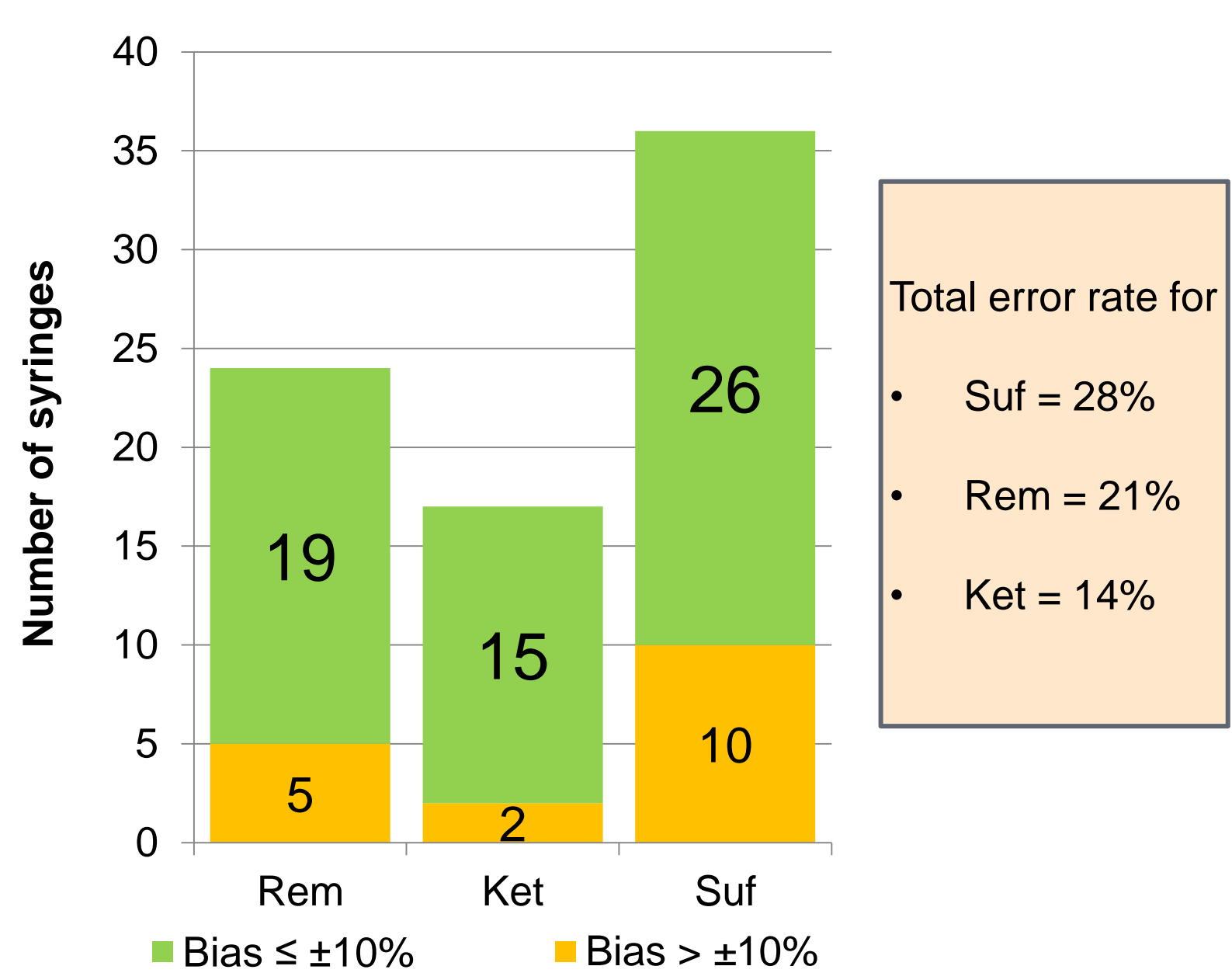
=> 8/73 syringes were not acceptable (11%)



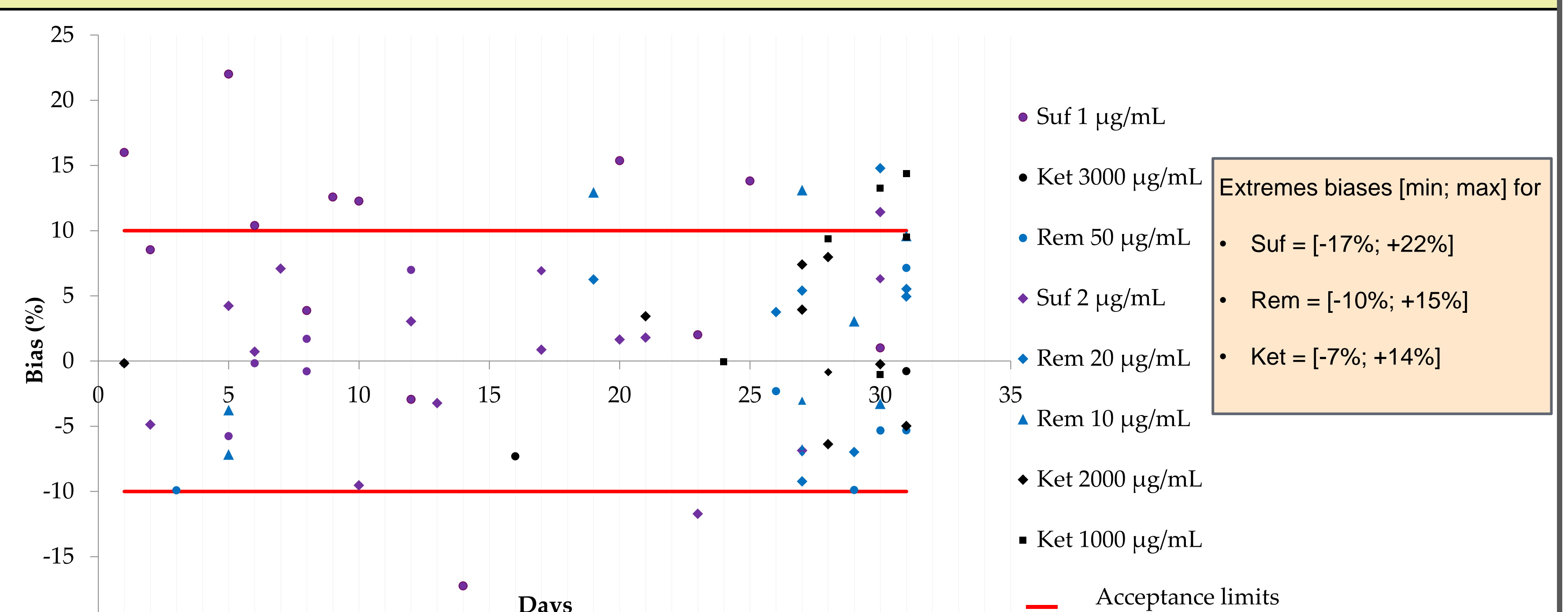
=> Biases were out of acceptance limits for 3 days

SERIAL DILUTION SYRINGES

77 SD syringes



=> 17/77 syringes were not acceptable (22%)



=> Biases were out of acceptance limits for 13 days

In total, 150 samples were collected on 31 days and biases were out of acceptance limits for 15 days.

Conclusion

22% syringes administered to children were out of acceptance limits. In order to reduce the occurrence of preparation error in the ward, a preparation procedure has to be defined and its impact will be further assessed.