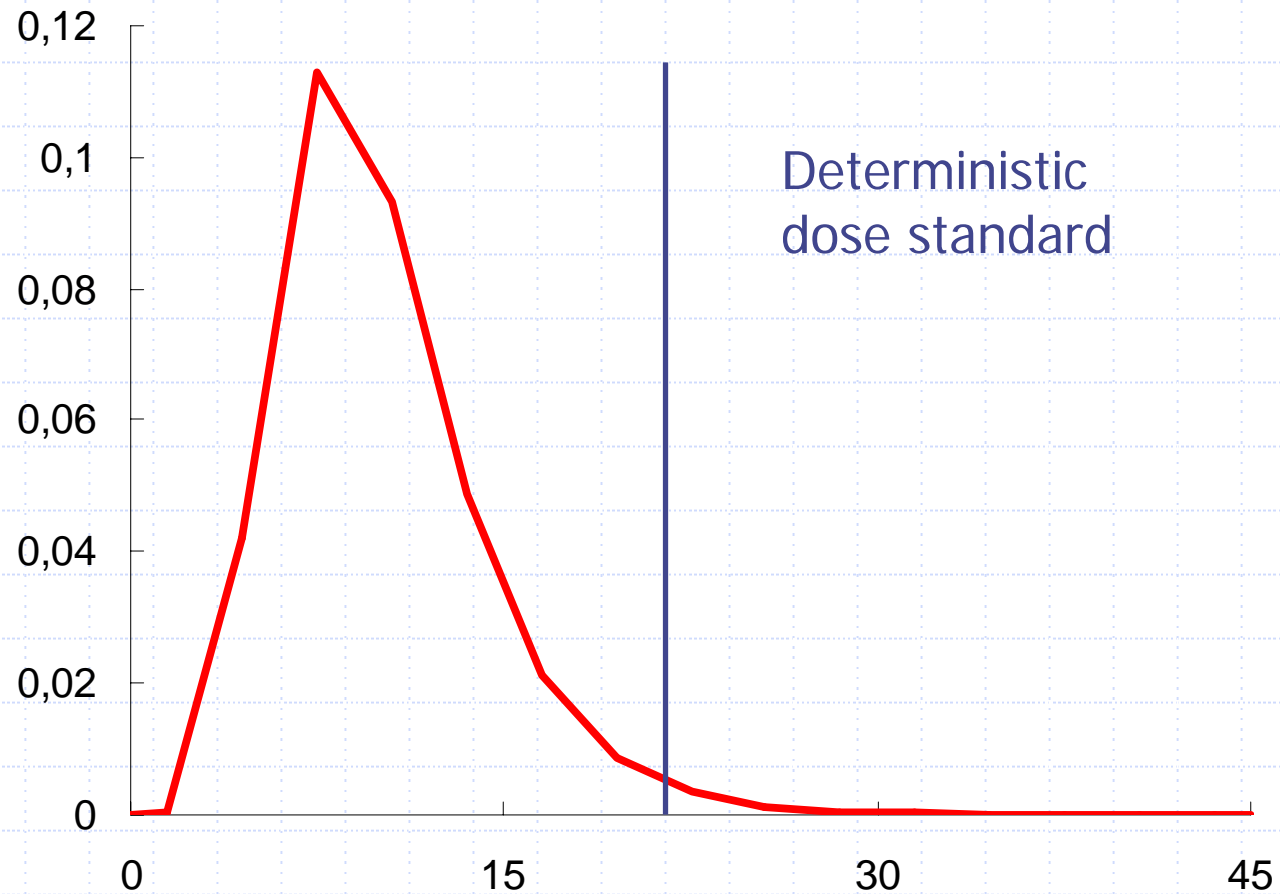


Risk to human health and the environment of a repository

Standards for risk measurement

Rodolfo Avila

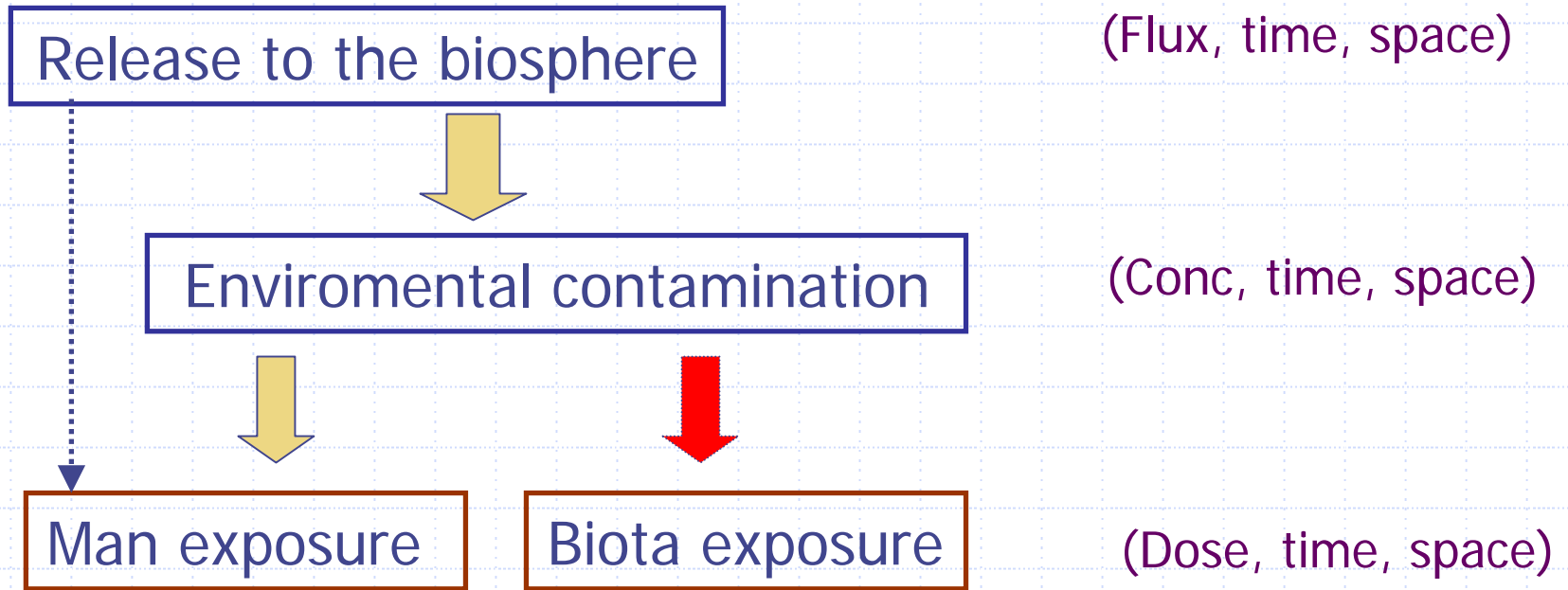
Comparison with a dose limit



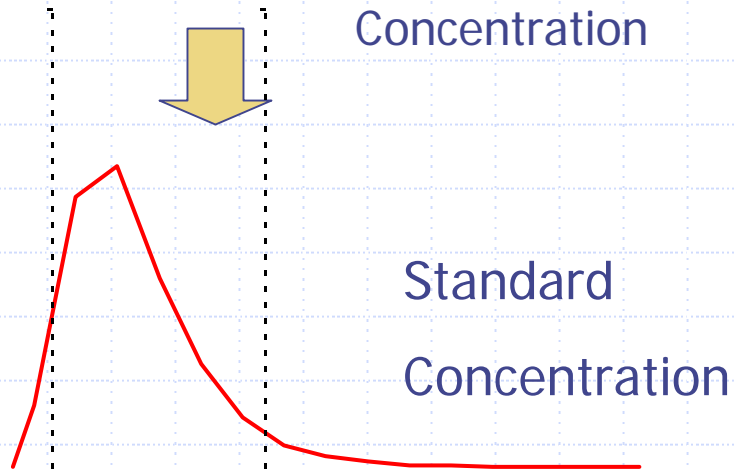
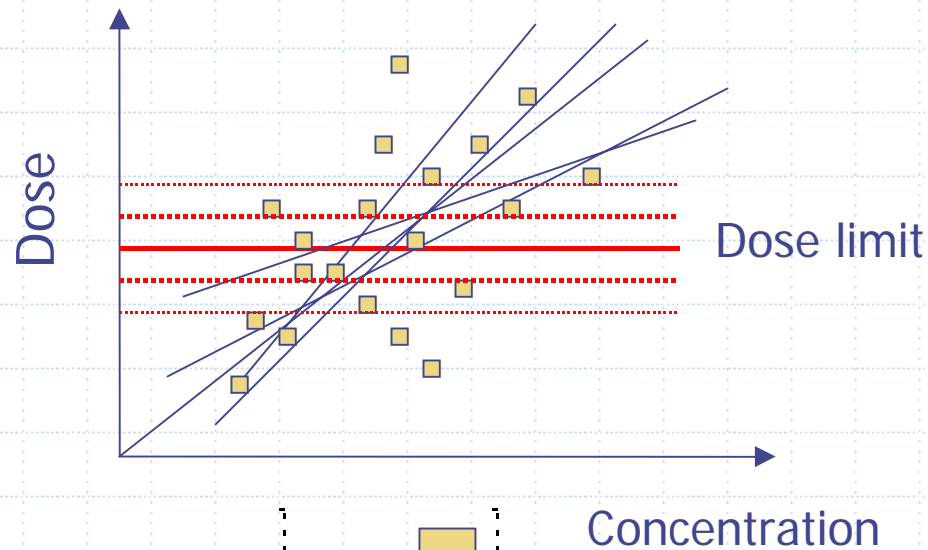
Critical group

- ◆ If doses to the critical group are below the dose limit, then it can be affirmed that there is low probability (less than 1% or 5%) that an individual of the population will receive a dose above the dose limit.

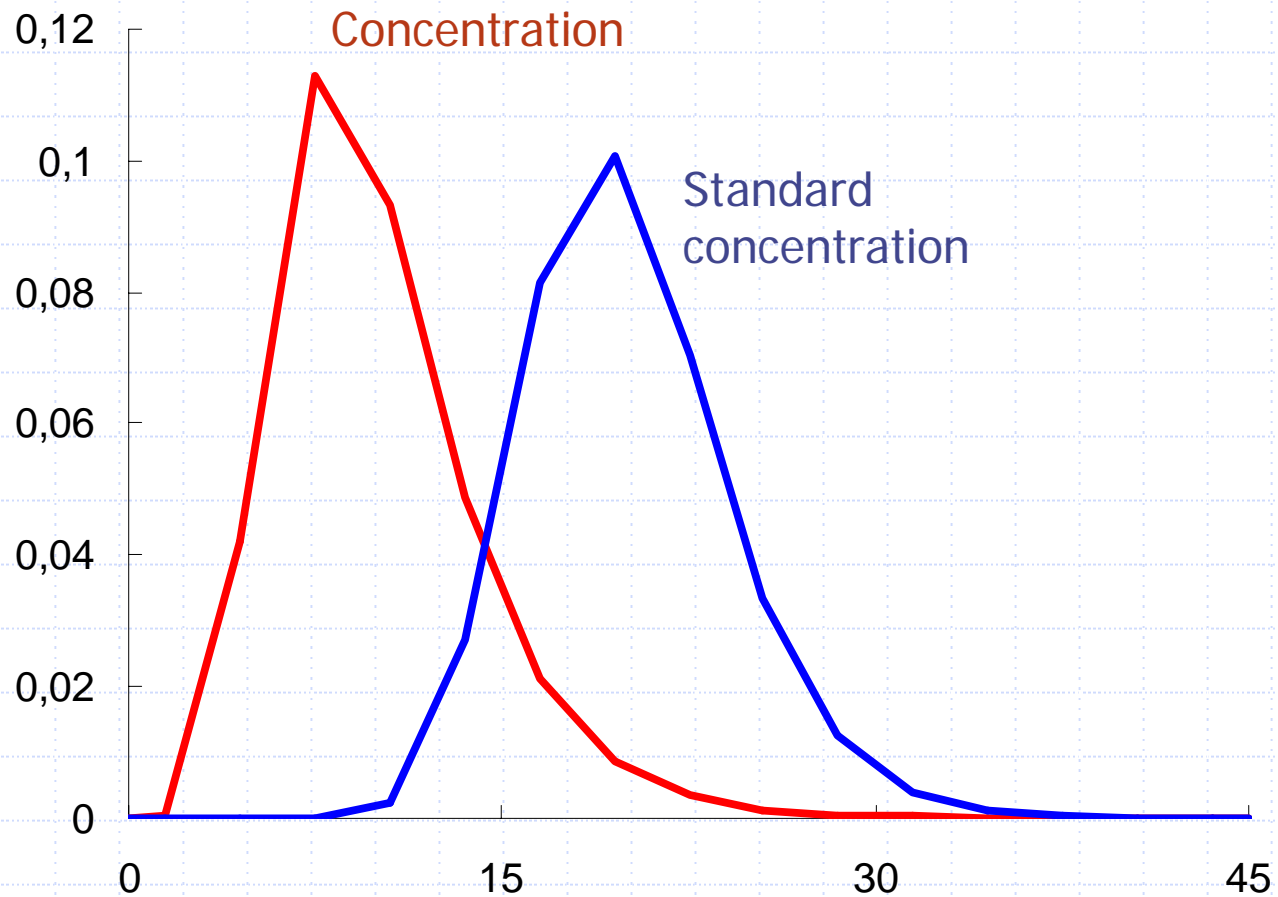
Assessment process



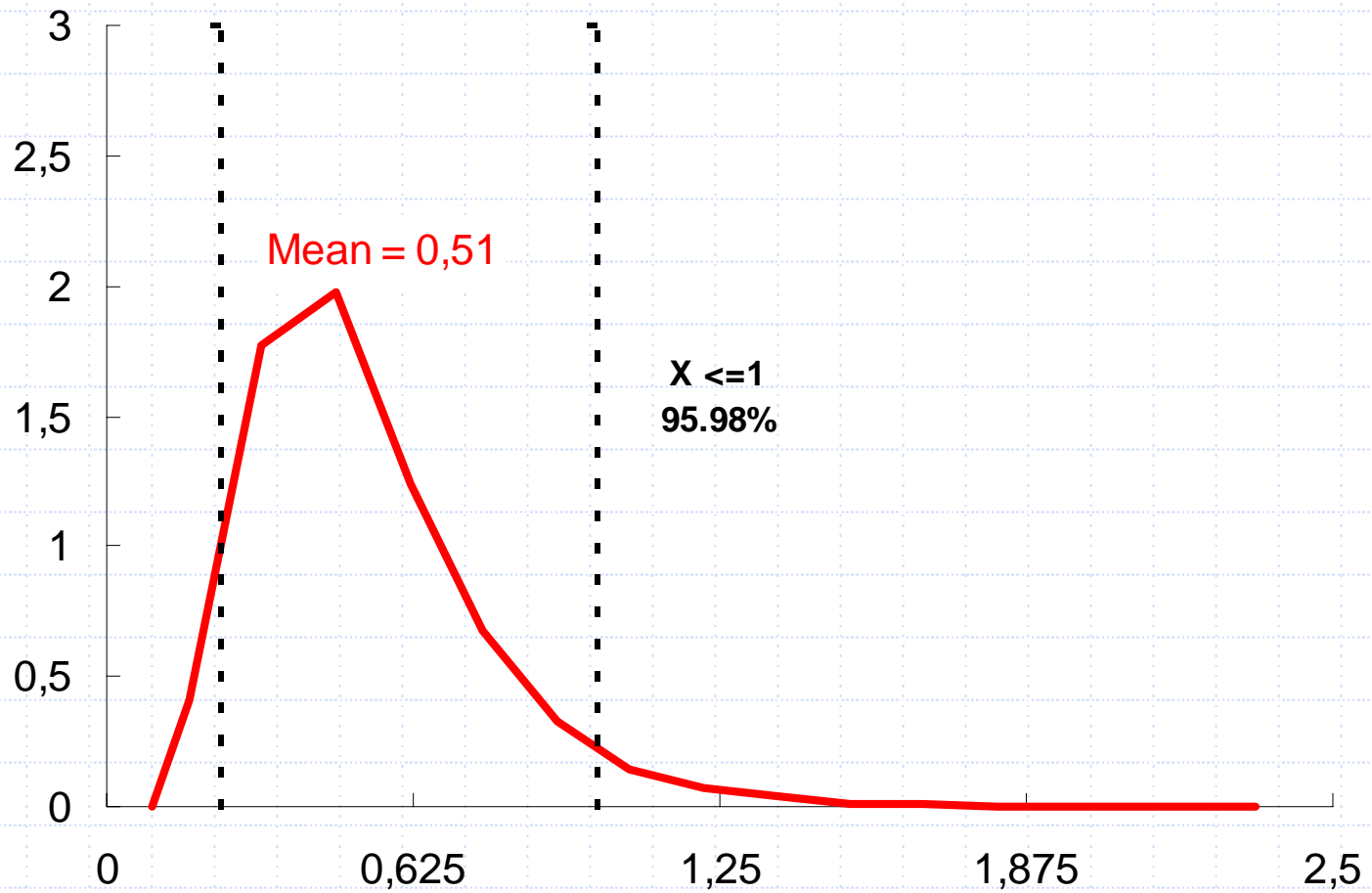
Derivation of a secondary standard



Risk characterisation



Risk profile



Interpretation

- ◆ If there is low probability that the concentrations are above the standard concentrations, then it can be affirmed that there is low probability (less than 1% or 5%) that an individual of the population will receive a dose above the dose limit.

Conservative vs probabilistic

STANDARD (S)

LOAD (L)

	99%	95%	50%
1%	1,44	1,41	0,81
5%	1,26	1,24	0,71
50%	0,89	0,87	0,50
1%	99,6	99,5	89,3
5%	98,8	98,7	82,1
50%	93	92,5	54,7

Suggestions

- ◆ Abandon the critical group concept!
- ◆ Consider the use of probabilistic standards
- ◆ Consider the use of secondary standards, like concentrations, as a way of simplifying (make possible?) demonstration of compliance