(a) Key events Molecular Adverse outcomes Chemicals initiating event (KEs) (AOs) (MIE) Cellular Organ Molecular Tissue Organism interaction response response response response Key event relationship (KER) (b) AOP 1 MIE 1 KE 1 KE 2 **KE 3** AO 1 AOP 2 MIE 2 KE 2 KE 4 AO 2 **AO 2** AOP 1 MIE 1 **KE 1 KE 2 KE 3 AO** 1 AOP 2 MIE 2 KE 4