

# Exploring the Certainty of Evidence Over Time in a Living Systematic Review

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## BACKGROUND

Evidence-based practice states that effect estimates are closer to the truth when based on higher certainty evidence (CoE). Therefore, even if there is new evidence, the best estimates of treatment effects are less likely to change if they are based on high or moderate CoE, than if they are based on low or very low CoE.

## OBJECTIVE

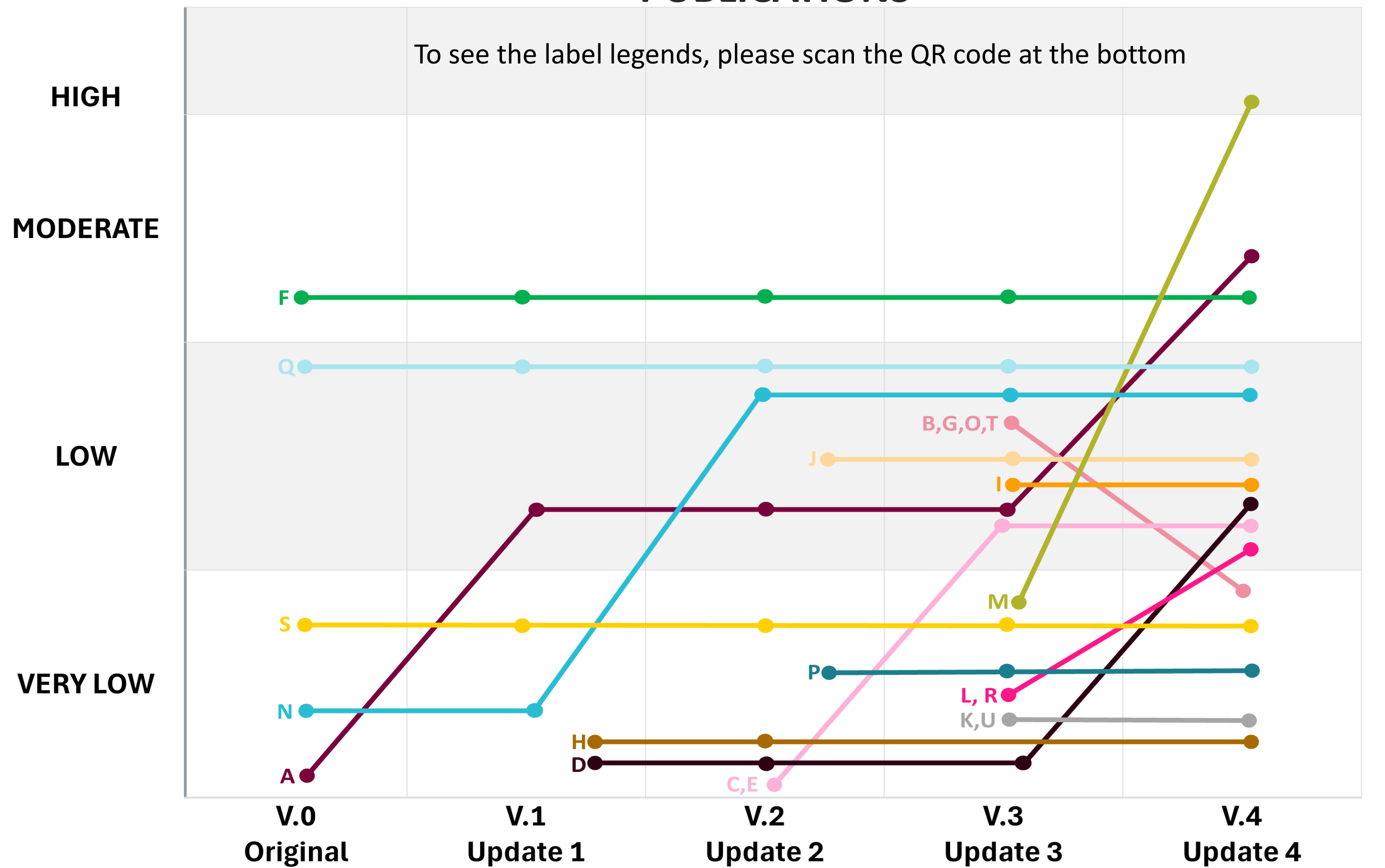
To describe how the CoE and the direction of effect estimates evolve as evidence accumulates in a living systematic review and network meta-analysis (LSRNMA).

## RESULTS

In total, 151 observations reported data for consecutive time points for the same outcome and comparison.

OUTCOME	v0-v1 Number obs (%)	v1-v2 Number obs (%)	v2-v3 Number obs (%)	v3-v4 Number obs (%)
Mechanical Ventilation	2(6.5%)	4(12.9%)	8(25.8%)	17(54.8%)
Duration hospitalization	1 (8.3%)	3 (25%)	8(66.7%)	0(0%)
Duration of MV	0(0%)	0(0%)	2 (40%)	3(60%)
Time to symptom resolution	2 (9.5%)	3(14.3%)	7(33.3%)	9(42.9%)
Viral clearance	3(27.3%)	3(27.3%)	5(45.5%)	0(0%)
Admission hospital	0(0%)	1(10%)	1(10%)	8(80%)
Adverse events	2(11.8%)	2(11.8%)	2(11.8%)	11(64.7%)
Mortality	5(11.4%)	7(15.91%)	11(25%)	21(47.7%)
TOTAL	15(9.9%)	23(15.2%)	44(29.1%)	69(45.7%)

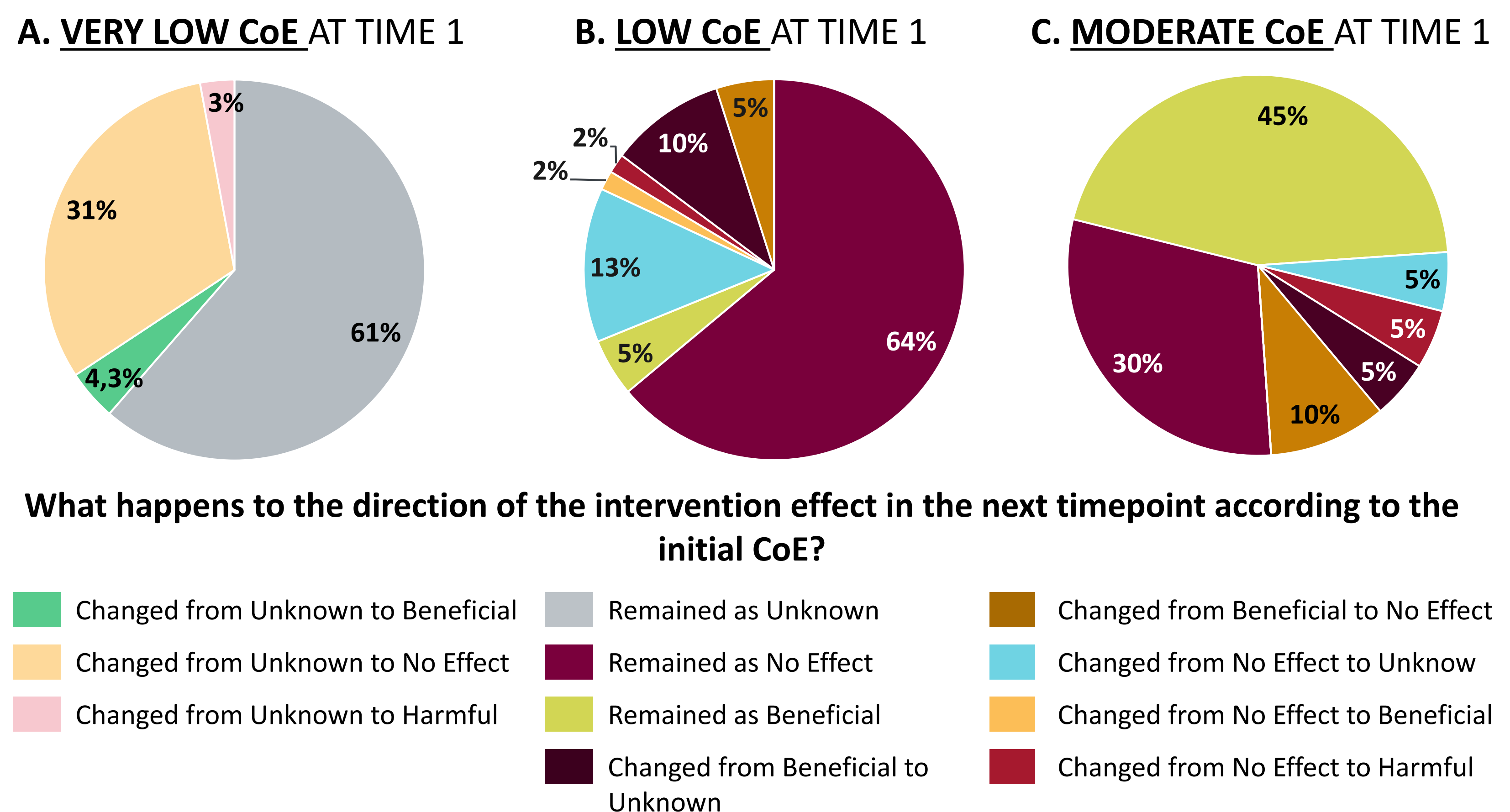
### 1. TRENDS IN CoE FOR MORTALITY FOR DIFFERENT DRUGS ACROSS PUBLICATIONS



### 2. FREQUENCY OF CONCORDANCE AND DISCORDANCE IN CoE FOR ALL OUTCOMES AT TWO CONSECUTIVE TIMEPOINTS

TIME2	TIME1			
	VERY LOW	LOW	MODERATE	HIGH
HIGH	1.4%	1.6%	10.0%	0.0%
MODERATE	4.3%	13.1%	65.0%	0.0%
LOW	32.9%	62.3%	15.0%	0.0%
VERY LOW	61.4%	23.0%	10.0%	0.0%

### 3. BEHAVIOUR OF THE DIRECTION OF INTERVENTION EFFECTS AT TWO TIME POINTS ACCORDING TO THE INITIAL CoE



## METHODS

We used **direct estimates** and **GRADE assessments** from five iterations of our LSRNMA of COVID-19 treatments.

V.0	V.1	V.2	V.3	V.4
Original publication	Update 1	Update 2	Update 3	Update 4
20-07-2020*	10-08-2020*	12-11-2020*	12-11-2020*	03-12-2021*

\*Search until (date)

Data included comparisons between drug treatments and standard care/placebo **with results from at least two iterations (two time points)**

- Mortality
- Mechanical ventilation
- Adverse events
- Hospital admission
- Viral clearance
- Duration of mechanical ventilation
- Hospital length of stay
- Time to symptom resolution.

## CONCLUSIONS

As **evidence accumulates**, CoE more often **remained stable or increases**.

In this sample:

- **When CoE is moderate**, the **direction of the effect remained stable in 75% of cases**, with 45% showing a sustained beneficial effect.
- **When CoE is low**, the **intervention effect remains stable in 69% of cases**, with 64% consistently showing "no effect."
- Despite accumulating evidence, interventions initially classified as **very low CoE** are likely to remain as such, leaving the effect unknown.

