Exploring the NRAD report in the context of uncertainty 1: interventions to prevent asthma deaths

In addition to assessing published Cochrane Reviews for updating, we explored the National Review of Asthma Deaths for research uncertainties that could be explored with a Cochrane Review (Levy 2015).

Levy identified 6 areas for change for the provision of asthma care, that have been used to structure our thinking: systems for provision of care; diagnosis; identifying risk; implementation of guidelines; improved patient education and self-management; improved quality of completion of medical; certificates of the cause of death.

Quote from Levy 2015	PICO	Action
1. Systems for provision of care		
"…overall care (primary and secondary care) was poor in over 80% of those who died from asthma. In the UK, and probably in other countries, more and more patient care is being devolved into the primary care sector, without the necessary resources and training." "46% of general practice nurses doing asthma reviews had no training in this field, and none as far as we were aware had any paediatric training" "It may be necessary to revert back to a system where specialists have more involvement in the care of people with asthma, particularly after attacks."	Education for HCPs (including doctors, nurses and receptionists) in primary care.	Scoping search report
	Specialist involvement in asthma care during or after an asthma attack	Scoping search report
	There may be scope for qualitative reviews about what resources doctors and nurses in primary care feel they are lacking, and what patients think of nurse and doctor care.	No action from the Cochrane Airways team, but we would be open to submission of review proposals.
2. Diagnosis		
"Systems for early, accurate diagnosis of asthma need to be reviewed and revised if necessary... This may include more joint specialist clinics for assessing patients with breathing problems (e.g. cardiologists and respiratory clinicians) and also joint asthma clinics for patients in transition from paediatric to adult medicine." "Doctors responded by saying their patient, despite having asthma on the MCCD, actually had chronic obstructive pulmonary disease (COPD) and was being treated as such. In fact, a number of these patients had evidence of longstanding, chronic asthma and had developed fixed airflow obstruction"	Asthma/cardiac specialists/joint specialist clinics for diagnosing asthma.	
	Specialist involvement during hospital admission or ED visit for people experiencing an asthma attack.	See above
	Joint clinics for easing the transition from teenage to adult years for teenagers with asthma.	Scoping search report for all interventions aimed at adolescents
	Specialist review of diagnosis for older patients with asthma (who may have	Scoping search report for interventions aimed at people with ACOS

"Some of those NRAD cases who died were prescribed long-acting β-agonist therapy as monotherapy; perhaps because they were considered to have COPD."	ACOS i.e. development of fixed airflow obstruction)	
"erroneous death certification due to asthma"	Beyond the scope of Cochrane Airways	
3. Identification of risk		
"Excess SABA usage has been clearly identified in the past as a risk factor for asthma attacks and death [2, 34, 53]. Yet, the NRAD identified that a significant proportion of patients were prescribed more than 12 SABA inhalers in the year before they died with correspondingly low prescriptions for preventer (controller) medication (on average, less than four controller inhalers in the previous year)." "Clinicians need to prescribe more responsibly, patients need to be more involved in their care, risks need to be recognised and exposure to triggers (such as cigarette smoke) should be avoided."	P: people who are overusing SABA, underusing ICS, or both; I: MART inhalers (formoterol and ICS combined inhaler); C: usual care.	Scoping search report
	Post asthma-attack specialist involvement.	See above
"The NRAD panellists commented on the poor quality of medical records…"	Beyond the scope for Cochrane Airways	
4. Implementation of guidelines		
"The NRAD identified potentially avoidable factors related to non-implementation of asthma guidelines (table 3) in about half of the deaths. In the opinion of the NRAD panels half the deaths occurred in cases where the guidelines had been implemented in an appropriate manner. However, the fact that half of the deaths occurred despite implementation of the guidelines possibly suggests that guidelines alone don't address all of the issues related to care of people with asthma."	Implementation of guidelines	No action from the Cochrane Airways team, but we would be open to submission of review proposals.
5. Patient education and provision of PAAPs		
"just under half of those who died from asthma either failed to call for or receive medical assistance during their final fatal attack. It might be that many of these cases had sudden severe attacks and didn't have time to call for help. A more likely explanation is that they did not recognise the danger signs leading to, or during, their final attack because they had never been taught about the signs. 77% of those who died had no evidence in their medical records of being	Existing review: Personalised asthma action plans for adults with asthma	One small study identified in scoping search report. No update planned. Assess for updating in 2023
	There may be value in a systematic review exploring the implementation of PAAPs in a health care system	No action from the Cochrane Airways team, but we would be open to submission of review proposals.

provided with a PAAP or a self-management plan, detailing how their medication was to be taken, how to recognise danger signals and when to call for help."		
6. Improve quality of MCCD and post mortem reports		
"There is a clear need for better education on completion of MCCDs and how the information is used to determine the underlying cause of death…"	Beyond the scope of Cochrane Airways.	

Abbreviations: ACOS: asthma-COPD overlap syndrome; C: control; COPD: chronic obstructive pulmonary disease; ED: emergency department; HCP: healthcare professional; I: intervention; ICS: inhaled corticosteroid; MCCD: medical certificate of cause of death; MART: Maintenance and Reliever Therapy (fast-acting bronchodilator plus steroid in a combined inhaler); NRAD: National Review of asthma deaths (in the UK); P: participants; PAAP: personalised asthma action plan; SABA: short-acting $beta_2$-agonists.

Reference

Levy ML. The national review of asthma deaths: what did we learn and what needs to change? Breathe (Sheff). 2015 Mar;11(1):14-24. doi: 10.1183/20734735.008914. Review. https://www.ncbi.nlm.nih.gov/pubmed/26306100