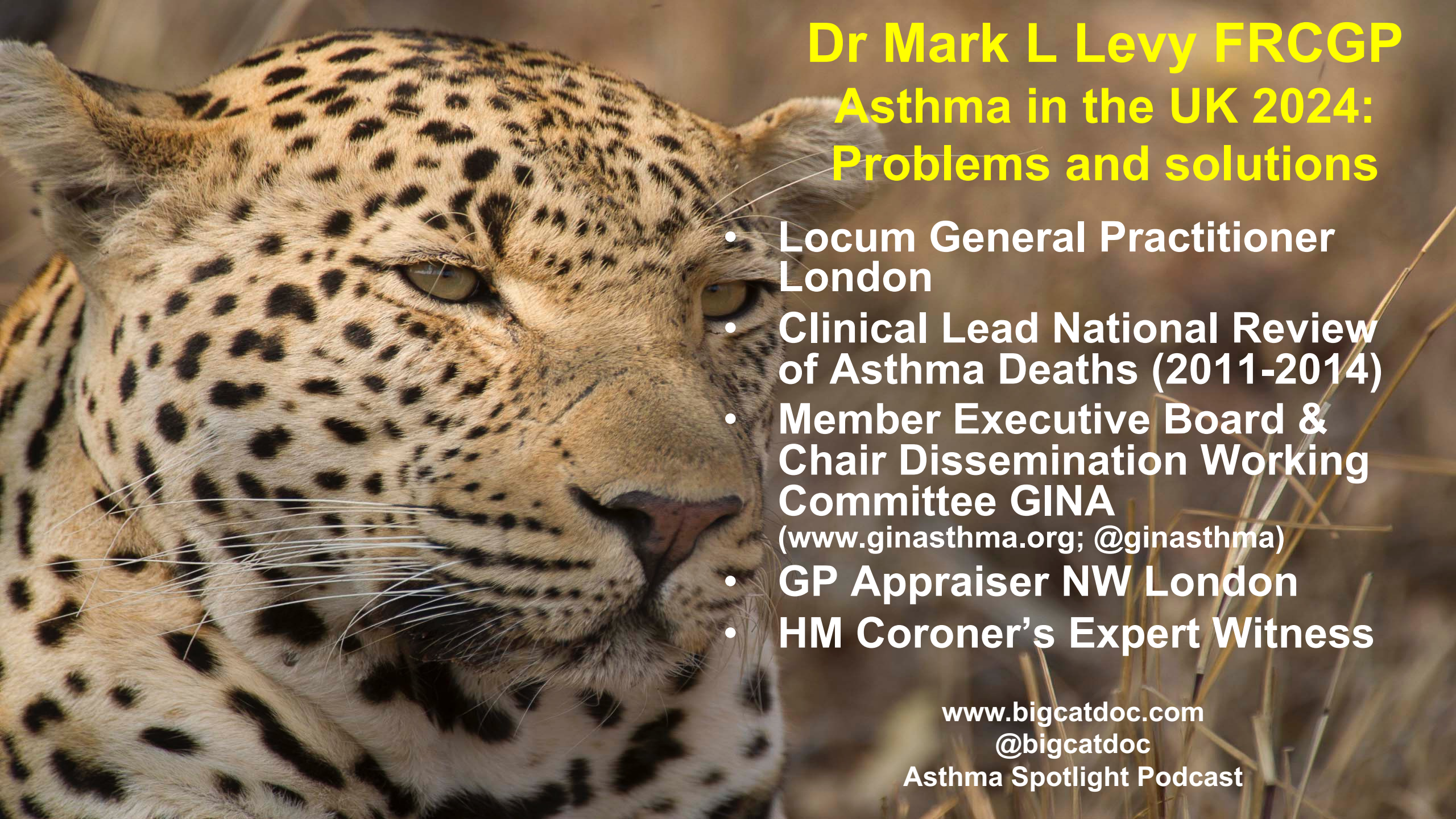


Dr Mark L Levy FRCGP

Asthma in the UK 2024: Problems and solutions

- Locum General Practitioner London
- Clinical Lead National Review of Asthma Deaths (2011-2014)
- Member Executive Board & Chair Dissemination Working Committee GINA (www.ginasthma.org; @ginasthma)
- GP Appraiser NW London
- HM Coroner's Expert Witness

www.bigcatdoc.com
@bigcatdoc
Asthma Spotlight Podcast

Inhaler devices & Asthma: what are the issues – clinical and environmental

Learning objectives:

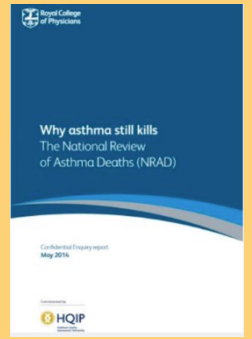
- To understand that asthma attacks shouldn't happen
- To understand why attacks occur
- To learn about ways to end asthma attacks (and reduce workload)

Please listen to my Asthma Spotlight Podcast and share and follow so you will be notified when new episodes are published

- Dr Mark L Levy
  - bigcatdoc@gmail.com ; mlevy1@nhs.net
  - @bigcatdoc and @ ginasthma
- Asthma Spotlight Podcast:
  - On my website
  - On Apple
  - On Spotify

UK National Review Asthma Deaths (NRAD) RCP 6.5.2014

- Confidential inquiry into all UK deaths between 1.2.2012 – 31.1.2013
- In depth analysis of 276 cases ICD-10-J459
- 37 Panel meetings (174 clinicians – 21 paediatricians and 24 secondary care specialist asthma nurses)
- Concluded 195/276 were asthma deaths
- Major preventable factors in >65%



Key findings:

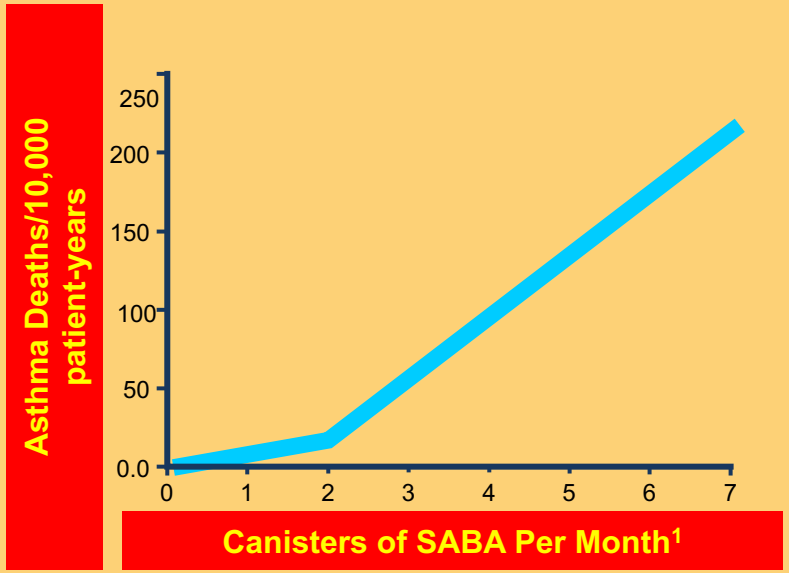
- Failure to recognise risk (past attacks/poor control)
- Failure to educate patients - 45% either had not sought medical assistance or died before emergency medical care could be provided (77% not provided with Personal Action Plans)
- Severity in 58% presumed by doctors as mild/moderate asthma

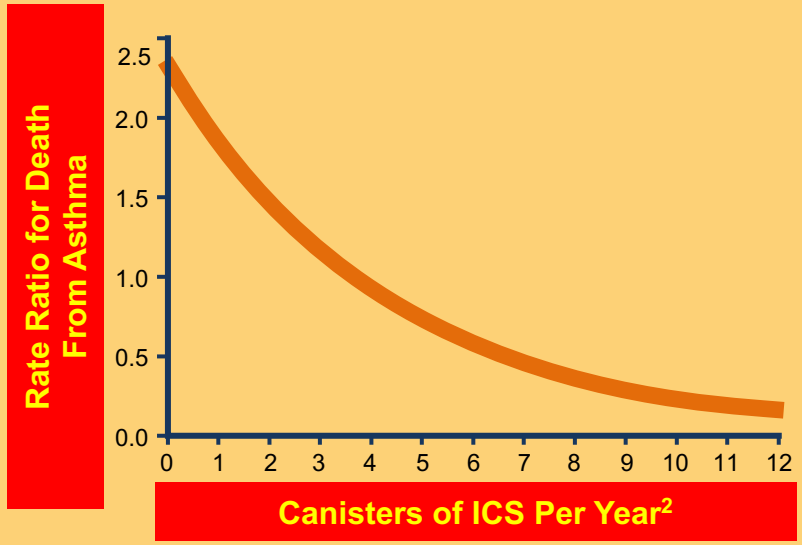
Overarching problem:...

- Prescriptions: Excess SABA insufficient ICS preventers

Royal College of Physicians. *Why asthma still kills: the National Review of Asthma Deaths (NRAD) Confidential Enquiry report.* London: RCP, 2014. Available at: http://bit.ly/1MhFvqv

Risks of overuse of SABAs and underuse of Inhaled Corticosteroids have been known for over 20 Years





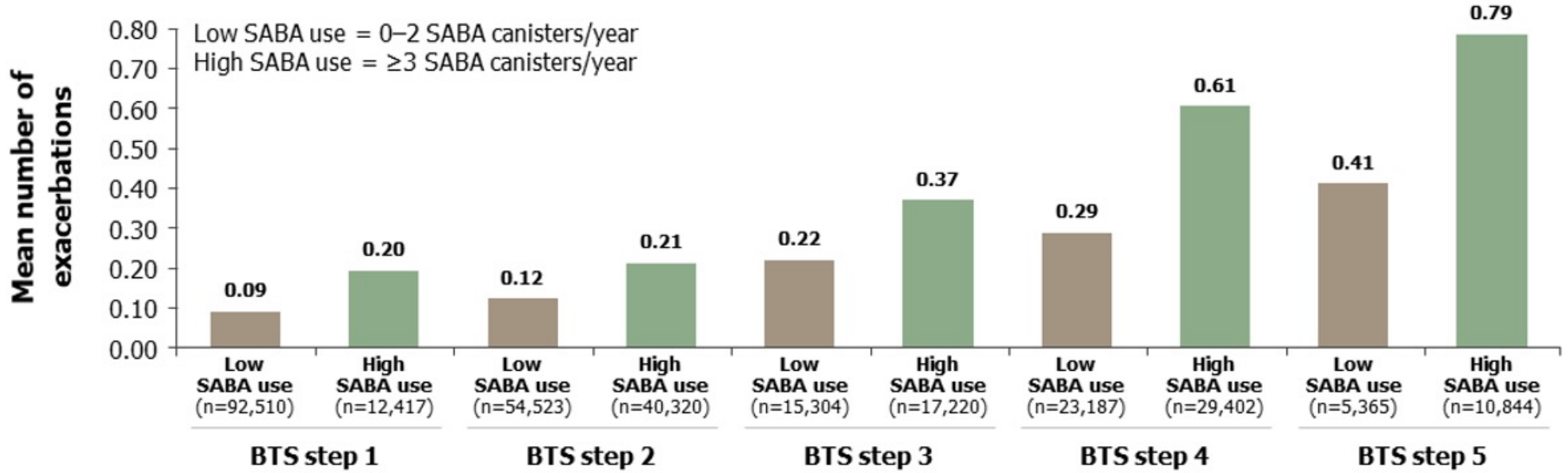
ICS, inhaled corticosteroid; SABA, short-acting β2-agonist.

1. Suissa S, *et al. Am J Respir Crit Care Med* 1994;149:604–10;
2. Suissa S, *et al. N Engl J Med* 2000;343:332–6;

Patients prescribed 3 or more SABA blue reliever inhalers a year are likely to have ~ 2x more asthma attacks than those prescribed less than 3 a year

SABINA I: SABA use and exacerbations

The mean number of exacerbations during the first year of follow-up was 1.7–2.2 times higher among high SABA users than among low SABA users across treatment steps



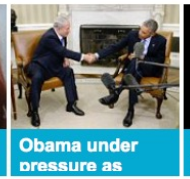
Graph has been adapted from Bloom et al.

1. Bloom et al https://doi.org/10.1007/s12325-020-01444-5.

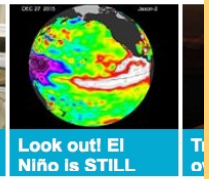
Lets look at some cases....

Bill Cosby appears in court to face sex assault charges: Comedian stumbles, carries a cane and is without his wife

Teenage Islamist 'poster girl' who



Obama under pressure as



Look out! El Niño is STILL

Schoolgirl, 13, who died of asthma attack was making regular trips to A&E and running out of medication - but was NEVER referred to a specialist even when her lips turned blue, mother tells inquest

- **Tamara Mills's asthma forced her to go to A&E department regularly**
- **But GPs did not increase her medication dose despite her struggles**
- **In April last year her grandfather found her having difficulty breathing and was unable to help her with inhalers**
- **Paramedics were called but the teenager died of cardiac arrest**

By HUGO GYE FOR MAILONLINE

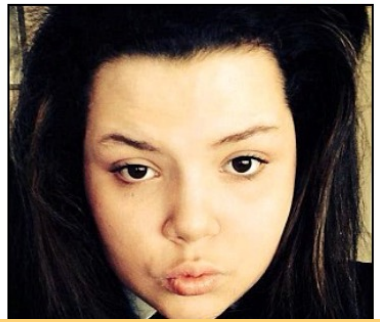
PUBLISHED: 08:13 EST, 13 October 2015 | **UPDATED:** 08:17 EST, 13 October 2015

A schoolgirl died from an asthma attack aged 13 after GPs decided not to refer her to a specialist even when her lips turned blue, an inquest has heard

Tamara Mills was regularly visiting A&E and ran out of medication unusually quickly in the months leading to her death, according to her mother.

However, doctors never suggested increasing her dose, and did not intervene after her condition appeared to worsen, the hearing was told.

Tamara died in April last year after she struggled to breathe in the middle of the



Terence Carney
Solicitor
Senior Coroner
Gateshead & South Tyneside.

35 Station Road
Hebburn
Tyne & Wear
NE31 1LA
Tel: 0191 483 8771
Fax: 0191 428 6699

Regulation 28 – Report to Prevent Future Deaths

This Report is being sent to:
Professor Sir Bruce Keogh, National Medical Director, NHS England, Rm 504 Richmond House, 79 Whitehall, London SW1A 2NS
Professor Ian Cummings OBE, Health Education England, 1st Floor, Blenheim House, Duncombe Street, Leeds LS1 4PL.
Sir Andrew Dillon CBE , National Institute for Clinical Excellence, Midcity Place, 71 High Holborn, London WC1V 6NA
Farnham Medical Centre, 435 Stanhope Road, South Shields, Tyne and Wear NE33 4QY
South Tyneside NHS Trust, Harton Lane, South Shields, Tyne & Wear NE34 0PL
Newcastle NHS Trust, Royal Victoria Infirmary, Queen Victoria Road, Newcastle upon Tyne NE1 4LP
Sunderland NHS Trust, Kayll Road, Sunderland SR4 7TP
Newcastle & Gateshead Clinical Commissioning Group, Riverside House, Goldcrest Way, Newcastle upon Tyne NE15 8NY
South Tyneside Clinical Commissioning Group, Monkton Hall, Monkton Lane, Jarrow, Tyne & Wear NE32 5NN

1 **Coroner**
I am Terence Carney, Senior Coroner for Gateshead & South Tyneside.

2 **Coroner's Legal Powers**

I make this report under paragraph 7, Schedule 5, of the Coroners and Justice Act 2009 and regulations 28 and 29 of the Coroners (Investigations) Regulations 2013.

http://www.legislation.gov.uk/ukpga/2009/25/schedule/5/paragraph/7
http://www.legislation.gov.uk/uksi/2013/1629/regulation/28/made
http://www.legislation.gov.uk/uksi/2013/1629/regulation/29/made

3 **Investigation & Inquest**

On 12th April 2014 I commenced an investigation into the death of Tamara Mills aged 13. The investigation concluded at the end of the inquest on 15th October 2015. The conclusion of the inquest was
A premature death contributed to by a lack of appreciation and/or reaction to the deteriorating nature of her chronic respiratory condition and the absence of any planning to direct, monitor, manage and co-ordinate her care, improvement, its sustainability and prevent her death.

4 **Circumstances of the Death**

https://www.judiciary.gov.uk/?s=tamara

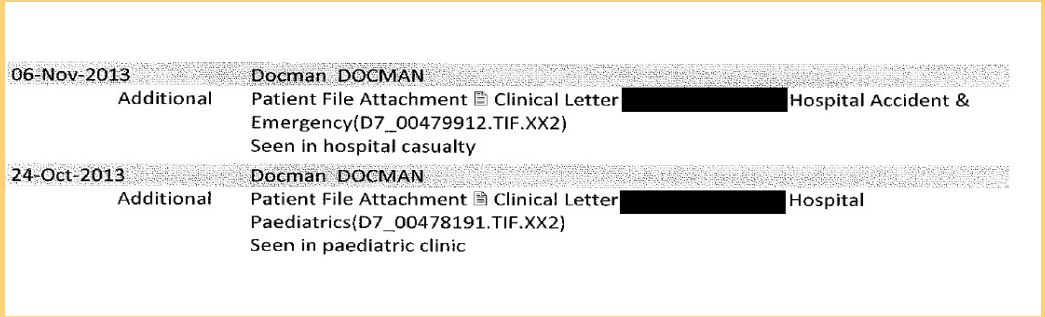
Permission given to Dr Mark Levy to share this information from Tamara's mother

Tamara Mills 13y (Deceased 2014)

- In her final 4 ½ years:
- 47 asthma attacks/flare ups
  - 24 ED attendances; 21 admissions
  - 19 GP attendances
  - 20 re-attendances shortly after treatment

Without referral to specialist

- Tamara was prescribed 50 Salbutamol inhalers in her last year of life
- GP record entries:



06-Nov-2013	Docman DOCMAN
Additional	Patient File Attachment Clinical Letter [redacted] Hospital Accident & Emergency(D7_00479912.TIF.XX2) Seen in hospital casualty
24-Oct-2013	Docman DOCMAN
Additional	Patient File Attachment Clinical Letter [redacted] Hospital Paediatrics(D7_00478191.TIF.XX2) Seen in paediatric clinic

The term 'Asthma Attack' was not included with scanned hospital correspondence, onr in GP records

Permission given to Dr Mark Levy to share this information from Tamara's mother

December 12, 2023

William Gray: Prevention of future deaths report

Child Death (from 2015) | Hospital Death (Clinical Procedures and medical management) related deaths

Skip to related content

Date of report: 08/12/2023

Ref: 2023-0511

Deceased name: William Gray

Coroner name: Sonia Hayes

Coroner Area: Essex

Category: Child Death (from 2015) | Hospital Death (Clinical Procedures and medical management) related deaths

This report is being sent to: Mid and South Essex NHS Foundation Trust | Ambulance Service NHS Trust | East of England Ambulance Service NHS Trust | Department of Health and Social Care | Essex Partnership University NHS Foundation Trust

	REGULATION 28 REPORT TO PREVENT FUTURE DEATHS
	THIS REPORT IS BEING SENT TO: Chief Executive Officer Mid & South Essex NHS Foundation Trust [REDACTED] Chief Executive Association of Ambulance Chief Executives [REDACTED] Chief Executive East of England Ambulance Service NHS Trust Victoria Atkins Secretary of State for Health [REDACTED] Chief Executive Officer Essex Partnership University NHS Foundation Trust
1	**CORONER** I am Sonia Hayes, Area Coroner, for the coroner area of Essex
2	**CORONER'S LEGAL POWERS** I make this report under paragraph 7, Schedule 5, of the Coroners and Justice Act 2009 and regulations 28 and 29 of the Coroners (Investigations) Regulations 2013.
3	**INVESTIGATION and INQUEST** On 9 June 2021 an investigation was commenced into the death of WILLIAM BRIAN KIN GRAY age 10. The investigation concluded at the end of the inquest on 22 November 2023. The conclusion of the inquest was 1a Cardiac Arrest Secondary to Respiratory Arrest 1b Acute Asthma Secondary to Chronically Very Under controlled Asthma. William Gray died as a consequence of failures by healthcare professionals to recognise the severity and frequency of his asthma symptomatology and the consequential risk to his life that was obvious. William's death was contributed to by neglect. William's death was avoidable. There were multiple failures to escalate and treat William's very poorly controlled asthma by healthcare professionals that would and should have saved William's life.
4	**CIRCUMSTANCES OF THE DEATH**

"William Gray died as a consequence of failures by healthcare professionals to recognise the severity and frequency of his asthma symptomatology and the consequential risk to his life that was obvious. William's death was contributed to by neglect. William's death was avoidable. There were multiple failures to escalate and treat William's very poorly controlled asthma by healthcare professionals that would and should have saved William's life."

"GP prescribed four short doses of oral steroids for exacerbations of his asthma in December 2020, February, April and 19 May 2021 that were insufficient to effectively manage obviously poorly controlled asthma in a picture of vastly excessive reliever inhaler prescriptions and the absence ongoing of preventer medication."

https://www.judiciary.uk/prevention-of-future-death-reports/william-gray-prevention-of-future-deaths-report/

International comparisons of health and wellbeing in adolescence and early adulthood - Nuffield Trust
Rakhee Shah, Ann Hagell and Ronny Cheung (Feb 2019)

- **the highest asthma death rate for those aged 10–24 among all 19 countries apart from Australia, New Zealand and the United States (US)**

Table S.1: Summary of the results

Indicator (and age range)	The UK relative to comparator countries (unless otherwise specified)	The UK trend over the past decade (unless otherwise specified)
Young people as a proportion of the total population (10–24)	Similar	Stable
Obesity prevalence (15–19)	Worse	Worsening
Longstanding illness (16–24)	Worse	Worsening
Exercise (England and Wales) (11)	Worse**	Worsening
Severe material deprivation (15–24)	Worse	Worsening
Adolescent birth rate (15–19)	Worse	Improving
Asthma death rate (10–24)	Worse	Improvement halted
Adolescent all-cause DALY rate (10–24)	Worse*	Improvement halted
Diabetes DALY rate (10–24)	Worse*	Stable
Not in education, employment or training (15–19)	Worse*	Improving
All-cause cancer mortality rate (10–24)	Similar	Improving
Daily smoking (18–24)	Similar	Improving
Alcohol consumption at least once a week (15)	Similar**	Improving
Cannabis use in the past 30 days (15)	Similar**	Improving
Suicide death rate (15–24)	Similar	Improvement halted
Adolescent mortality rate (10–19)	Better	Improvement halted
Road traffic injury death rate (10–24)	Better	Improvement halted
Road traffic injury DALY rate (10–24)	Better	Improving

https://www.nuffieldtrust.org.uk/files/2019-02/1550657729_nt-ayph-adolescent-health-report-web.pdf (accessed 1.3.2019)

~10 years on from NRAD, what has changed?

> ***Deaths from asthma attacks are the highest they have been in the last decade, increasing by more than 33%.[1]***
>
> For England and Wales. Asthma UK, 2019

> ***UK paediatric asthma mortality rates are highest in Western Europe[2]***

> ***Highest rate of hospital admissions for adult asthma across 'Big Five' European countries[3]****
>
> OECD, 2018

*Hospital admissions rate measured by hospital discharge rate

1. Asthma UK. Press Release. August 2019. https://www.asthma.org.uk/about/media/news/press-release-asthma-death-toll-in-england-and-wales-is-the-highest-this-decade (Accessed June 2023); 2. Wolfe I, et al. Lancet 2013; 381: 1224–34; 3. OECD Statistics. Health Care Utilization: Hospital discharges by diagnostic category. Asthma. Available at: https://stats.oecd.org/Index.aspx?ThemeTreeId=9 (Accessed June 2023).

Key action # 1 to prevent asthma attacks & Deaths

- Remove SABA (salbutamol/ terbutyline) from repeat prescribing
- If someone requests a SABA – they need an asthma review!
- Count SABA inhalers every time you prescribe an inhaler .....

.... IF ≥3 have been prescribed in the last 12 months ....

..... DO AN URGENT ASTHMA REVIEW

- ≥ 2 attacks in a year – REFER to Asthma Specialist
- Do Not delegate to anyone without sufficient training

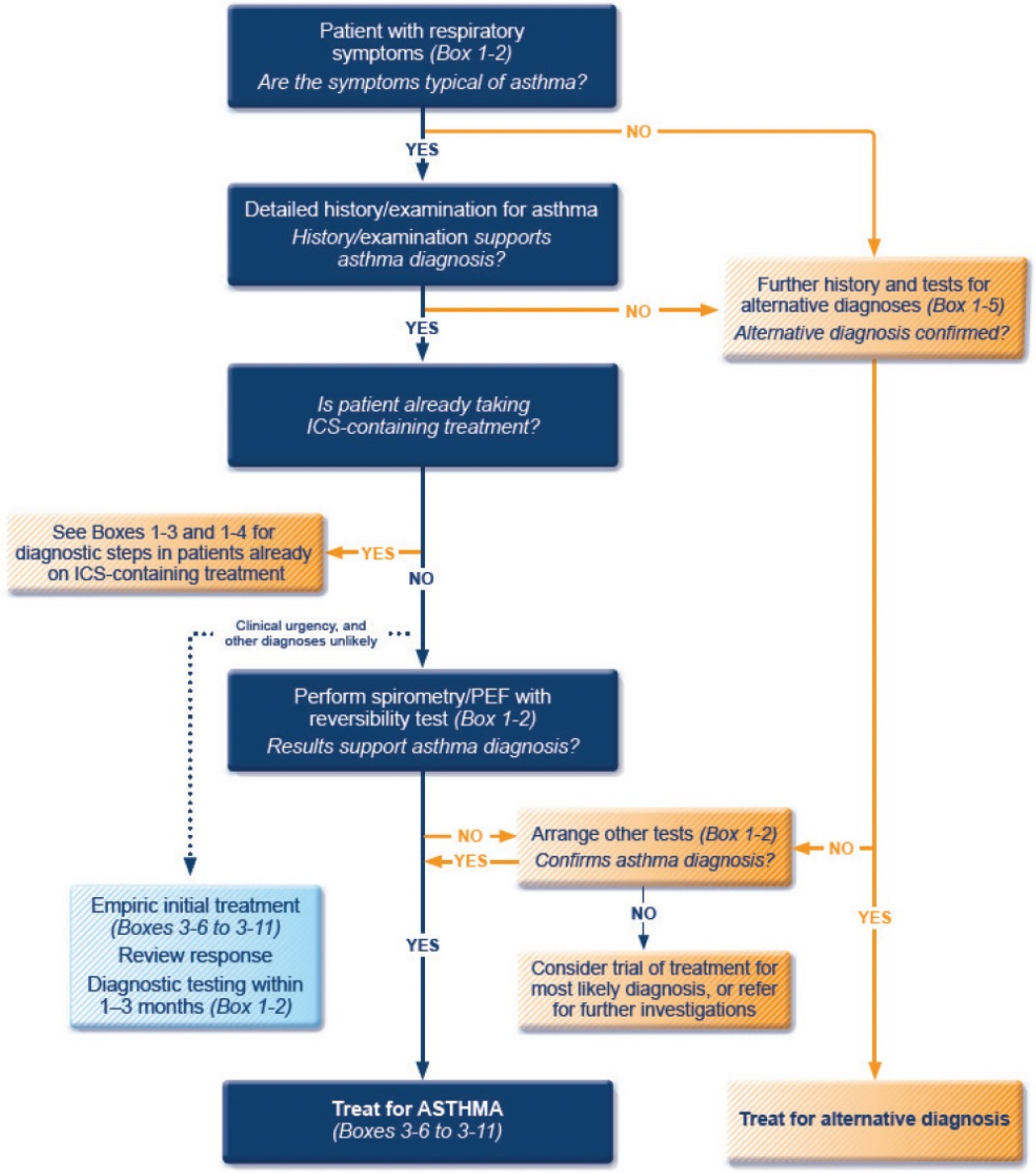
*SABA = Short acting beta-2-bronchodilator reliever

Think of asthma if anyone consults with respiratory symptoms (Check past records)

Symptom	Features that support the diagnosis
Wheeze, shortness of breath, chest tightness and cough (Descriptors may vary between cultures and by age)	➢ Generally more than one type of respiratory symptom ➢ Symptoms occur variably over time and vary in intensity ➢ Symptoms are often worse at night or on waking ➢ Symptoms are often triggered by exercise, laughter, allergens, cold air ➢ Symptoms often appear or worsen with viral infections ➢ Eczema, Allergic Rhinitis, Nasal Polyps
Family History	Asthma, Allergy, Atopy

GINA 2023 ; SIGN/BTS 2019 ; NICE 2017/21

Box 1-1. Diagnostic flowchart for clinical practice



*Box numbers refer to main report
www.ginasthma.org/reports

PEF: peak expiratory flow (highest of three readings) - use the same meter each time as the value may vary by up to 20% between different meters.

Adults: 10% variation
Children 13%

Bronchodilator responsiveness (reversibility) may be lost during severe exacerbations or viral infections, and in long-standing asthma, and it usually decreases with inhaled corticosteroid treatment. If bronchodilator responsiveness is not found at initial presentation, the next step depends on the availability of tests and the clinical urgency of need for treatment.

Asthma is a dynamic condition that changes from time to time – sometimes very rapidly

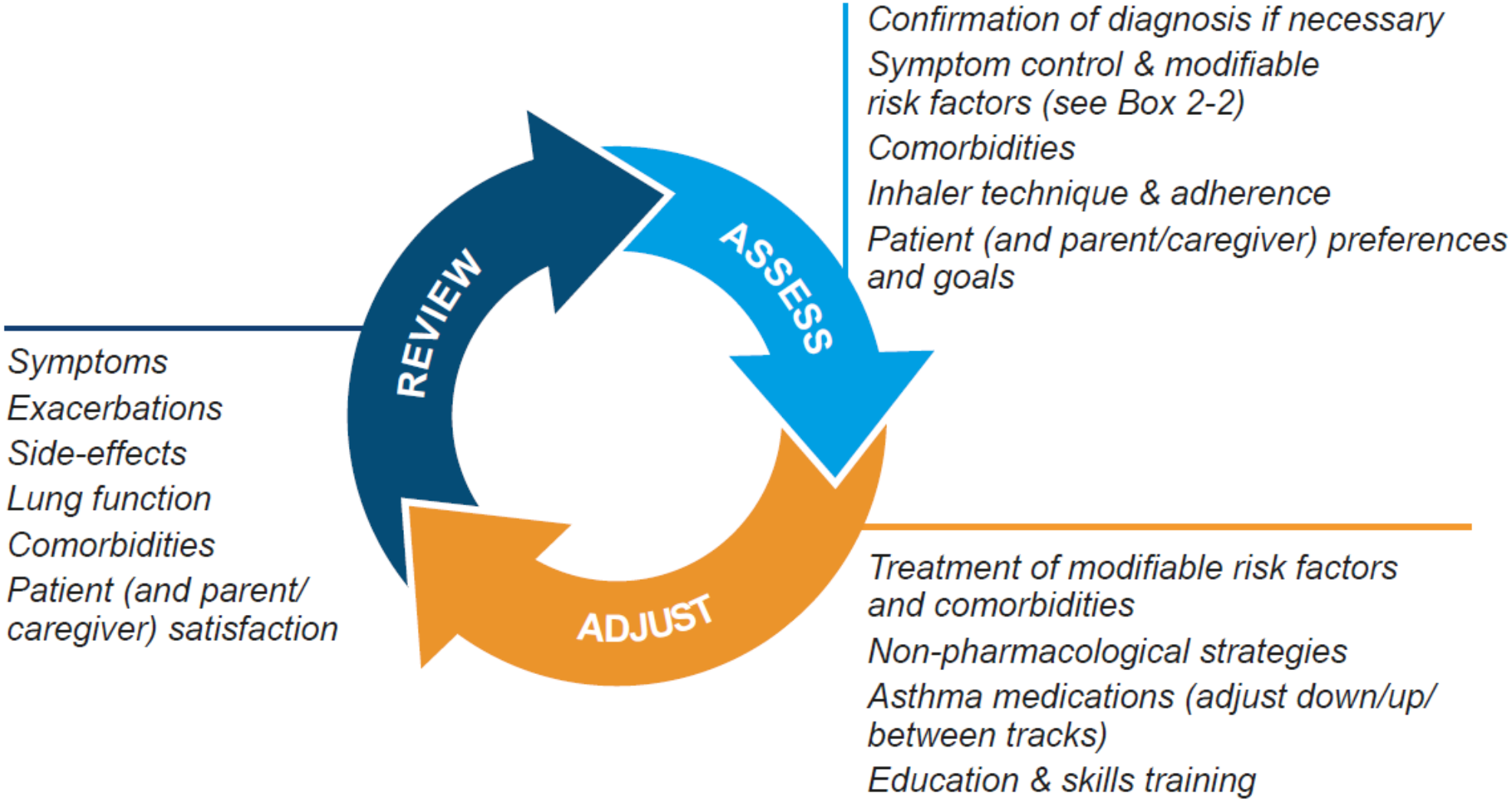
So therefore it is pretty useless simply doing one review/ check-up a year to assess asthma control –
this should be done opportunistically whenever someone with asthma consults or requests a repeat prescription

Key action # 2 to prevent asthma attacks & Deaths:Listen to my Podcast No 58 published on Sat 16th March 24 : https://bigcatdoc.com/prevent-asthma-attacks-and-asthma-deaths/

- Anyone who had an attack:
  - Admission; ED; OOH; High dose salbutamol
- Anyone prescribed ≥3 SABAs in last 12 months
- Anyone not collecting Inhaled Corticosteroids ... if it's a child – consider safeguarding referral!
- Do a review there and then!

Asthma Spotlight Podcast: Spotify ; Apple

Personalized asthma management



- NOT just about medications, NOT one-size-fits-all

Asthma Control is defined in two domains – Symptoms and Risk

Box 2-2. GINA assessment of asthma control in adults, adolescents and children 6–11 years

A. Asthma symptom control

In the past 4 weeks, has the patient had:		Well controlled	Partly controlled	Uncontrolled
• Daytime asthma symptoms more than twice/week?	Yes☐ No☐	None of these	1–2 of these	3–4 of these
• Any night waking due to asthma?	Yes☐ No☐			
• SABA* reliever for symptoms more than twice/week?	Yes☐ No☐			
• Any activity limitation due to asthma?	Yes☐ No☐			

B. Risk factors for poor asthma outcomes

Assess risk factors at diagnosis and periodically, particularly for patients experiencing exacerbations.

Measure FEV_1 at start of treatment, after 3–6 months of ICS-containing treatment to record the patient's personal best lung function, then periodically for ongoing risk assessment.

a. Risk factors for exacerbations

Uncontrolled asthma symptoms		Having uncontrolled asthma symptoms is an important risk factor for exacerbations.[98]
Factors that increase the risk of exacerbations *even if the patient has few asthma symptoms*†	*Medications*	High SABA use (≥3 x 200-dose canisters/year associated with increased risk of exacerbations, increased mortality particularly if ≥1 canister per month)[74,75,99,100]
		Inadequate ICS: not prescribed ICS, poor adherence,[101] or incorrect inhaler technique[102]
	Other medical conditions	Obesity,[103,104] chronic rhinosinusitis,[104] GERD,[104] confirmed food allergy,[105] pregnancy[106]
	Exposures	Smoking,[107] e-cigarettes,[108] allergen exposure if sensitized,[107] air pollution[109-112]
	Psychosocial	Major psychological or socioeconomic problems[113,114]
	Lung function	Low FEV1 (especially <60% predicted),[107,115] high bronchodilator responsiveness[104,116,117]
	Type 2 inflammatory markers	Higher blood eosinophils,[104,118,119] elevated FeNO (in adults with allergic asthma taking ICS)[120]
	Exacerbation history	Ever intubated or in intensive care unit for asthma,[121] ≥1 severe exacerbation in last 12 months[122,123]

b. Risk factors for developing persistent airflow limitation

History	Preterm birth, low birth weight and greater infant weight gain,[124] chronic mucus hypersecretion[125,126]
Medications	Lack of ICS treatment in patient with history of severe exacerbation[127]
Exposures	Tobacco smoke,[125] noxious chemicals; occupational or domestic exposures[49]
Investigation findings	Low initial FEV^1,[126] sputum or blood eosinophilia[126]

c. Risk factors for medication side-effects

Systemic	Frequent OCS, long-term, high-dose and/or potent ICS, P450 inhibitors[128]
Local	High-dose or potent ICS,[128,129] poor inhaler technique[130]

See list of abbreviations (p.21). *Based on SABA (as-needed ICS-formoterol reliever not included); see page 36; excludes reliever taken before exercise. †'Independent' risk factors are those that are significant after adjustment for the level of symptom control. Cytochrome P450 inhibitors such as ritonavir, ketoconazole, itraconazole may increase systemic exposure to some types of ICS and some LABAs; see drug interaction websites and p.111 for details. For children 6–11 years, also refer to Box 2-3, p.39. See Box 3-17, p.85 for specific risk reduction strategies.

~ 30% of people who die from asthma are believed to have mild asthma*

... So 'Mild Asthma does not mean 'No Risk'

... Don't use this term! (Use terms Either Severe Asthma or Asthma)

... For those with symptoms less than twice a week and NO attacks in previous year .. Call it ..'so called mild asthma'

* National Review of Asthma Deaths (NRAD), 2014

GINA's 2019 update was a landmark change in asthma management

- ✖ For safety, GINA no longer recommends SABA-only treatment for asthma in adults and adolescents
- ✖ SABA is no longer the preferred reliever treatment across all severities
- ✖ Over-reliance of SABA (≥3 inhalers in a year) is recognised to be associated with an increased risk of severe exacerbations
- ✔ **As-needed low dose ICS-formoterol is the preferred reliever in GINA steps 3-5 with background maintenance therapy[1]**
- ✔ **ICS/formoterol is the preferred maintenance therapy in steps 3-4 and should be considered in step 5 over another ICS/LABA[1]**

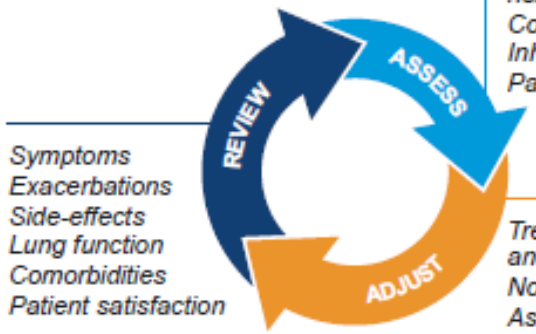
> **"There is a *lack* of evidence for the safety or efficacy of SABA-only treatment"**

GINA, Global Initiative for Asthma; ICS, inhaled corticosteroids; LABA, long-acting ß-agonist; SABA, short acting β2-agonist.

1. Global Initiative for Asthma (GINA). 2023 GINA Report, Global Strategy for Asthma Management and Prevention. Available at: http://www.ginasthma.org. (Accessed June 2023).

GINA 2023 – Adults & adolescents 12+ years

Personalized asthma management
Assess, Adjust, Review
for individual patient needs



Confirmation of diagnosis if necessary
Symptom control & modifiable risk factors (see Box 2-2)
Comorbidities
Inhaler technique & adherence
Patient preferences and goals

Symptoms
Exacerbations
Side-effects
Lung function
Comorbidities
Patient satisfaction

Treatment of modifiable risk factors and comorbidities
Non-pharmacological strategies
Asthma medications (adjust down/up/between tracks)
Education & skills training

TRACK 1: PREFERRED CONTROLLER and RELIEVER
Using ICS-formoterol as the reliever* reduces the risk of exacerbations compared with using a SABA reliever, and is a simpler regimen

STEPS 1 – 2	STEP 3	STEP 4	STEP 5
As-needed-only low dose ICS-formoterol	Low dose maintenance ICS-formoterol	Medium dose maintenance ICS-formoterol	Add-on LAMA Refer for assessment of phenotype. Consider high dose maintenance ICS-formoterol, ± anti-IgE, anti-IL5/5R, anti-IL4Rα, anti-TSLP

RELIEVER: As-needed low-dose ICS-formoterol*

TRACK 2: Alternative **CONTROLLER and RELIEVER**
Before considering a regimen with SABA reliever, check if the patient is likely to adhere to daily controller treatment

STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
Take ICS whenever SABA taken*	Low dose maintenance ICS	Low dose maintenance ICS-LABA	Medium/high dose maintenance ICS-LABA	Add-on LAMA Refer for assessment of phenotype. Consider high dose maintenance ICS-LABA, ± anti-IgE, anti-IL5/5R, anti-IL4Rα, anti-TSLP

RELIEVER: as-needed SABA, or as-needed ICS-SABA*

See GINA severe asthma guide

Other controller options (limited indications, or less evidence for efficacy or safety – see text)	*Low dose ICS whenever SABA taken*, or daily LTRA, or add HDM SLIT*	*Medium dose ICS, or add LTRA, or add HDM SLIT*	*Add LAMA or LTRA or HDM SLIT, or switch to high dose ICS*	*Add azithromycin (adults) or LTRA. As last resort consider adding low dose OCS but consider side-effects*

*Anti-inflammatory relievers (AIR)

How certain are you that the patient will adhere to a daily treatment regime??

British Journal of General Practice
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Analysis

A simple and effective evidence-based approach to asthma management: ICS-formoterol reliever therapy

Mark L Levy, Richard Beasley, Bev Bostock, Toby GD Capstick, Michael G Crooks, Louise Fleming, Daryl Freeman, Viv Marsh, Hitasha Rupani, Andy Whittamore, Peter J Barnes and Andrew Bush

British Journal of General Practice 2024; 74 (739): 86-89. **DOI:** https://doi.org/10.3399/bjgp24X736353

https://bjgp.org/content/74/739/86 for this Open access article

- **Anti-Inflammatory Reliever Therapy (AIR) – prescribed in two ways:**
  - **Maintenance and Reliever Therapy (MART)**
  - **As needed ICS-Formoterol for Mild Asthma (Symbicort 200/6 licenced in the UK)**

- **MART reduces severe exacerbations compared with ICS or ICS/LABA plus SABA reliever, with similar symptom control.**
- **ICS-formoterol reliever 'as needed' for 'mild asthma' reduces severe exacerbations compared with SABA monotherapy in mild asthma**
- **ICS-formoterol reliever alone in mild asthma compared with maintenance ICS plus SABA in two separate inhalers reduced severe exacerbations by 21% and an asthma-related hospital admission or emergency department or urgent care visits by 37%**

Levy ML, Beasley R, Bostock B et al: British Journal of General Practice. 2024;74(739):86-9.

Track 1 ‘as needed treatment’ for steps 1 & 2 licenced in UK for one product as at March 2024

- Symbicort 200/6 (Budesonide/formoterol) is now licenced in the UK for treatment ‘as needed’ for people ≥ 12 years with ‘Mild Asthma’
- No clear definition for ‘Mild Asthma’
- Consider in:
  - Those only on Salbutamol
  - Symptoms less than 3-4 times a week AND NO attacks in last 12 months

Single Maintenance and Reliever Treatment (S)MART

- Inhaled Corticosteroid combined with Formoterol (a rapid acting, long-acting Beta-agonist Bronchodilator)
- Take 1-2 puffs regularly OD or BD
- Use this same medication as needed for relief of symptoms
- Prescribe only one Salbutamol for emergency use and remove this from repeat prescription

- Symbicort 160/4.5 (≥ 12 years)
- Symbicort 80/4.5 (≥ 12 years)
- Fostair pMDI or Nexthaler 80 / Form 4.5 (≥18 years)
- Spiromax 160/Form 4.5 (≥ 18 years)
- Fobumix 160/Form 4.5 (≥ 18 years)

READ the manufacturers instructions because they differ in maximum doses before help is sought

Key action # 3 to prevent asthma attacks & Deaths:

- **Anyone who has asthma should be prescribed an inhaled corticosteroid either as needed or regularly**
- **No one should ONLY be taking SABA – rather prescribe either licenced product 'as needed' ICS/Formoterol or ICS/Formoterol as MART**

https://bjgp.org/content/74/739/86 Open access article

Interview with Professor Beasley on AIR treatment
https://open.spotify.com/episode/7sf4NgmgUiJTqVxFxltDvi?si=cef800ecfe814d6c

Asthma Spotlight Podcast: Spotify ; Apple

Acute Asthma

Acute attacks are a signal that something serious has gone wrong ... So its important to diagnose and code attacks and to identify modifiable risk factors and deal with these urgently

Clinical signs in acute asthma: Table 17: SIGN/BTS 158, 2019

Anyone with asthma or treated with inhalers (and not diagnosed) who consults with Cough, Wheeze or Shortness of Breath

Ensure reception staff are trained to alert doctor immediately if a patient is short of breath

It is very important to identify those who have features of Acute Severe or Life-threatening asthma – and refer them to ED

SIGN/BTS 158, 2019

Table 17: Levels of severity of acute asthma attacks in children[639]

Moderate acute asthma	Able to talk in sentences SpO_2 ≥92% PEF ≥50% best or predicted Heart rate ≤140/min in children aged 1–5 years ≤125/min in children >5 years Respiratory rate ≤40/min in children aged 1–5 years ≤30/min in children >5 years	
Acute severe asthma	Can't complete sentences in one breath or too breathless to talk or feed SpO_2 <92% PEF 33–50% best or predicted Heart rate >140/min in children aged 1–5 years >125/min in children >5 years Respiratory rate >40/min in children aged 1–5 years >30/min in children >5 years	
Life-threatening asthma	Any one of the following in a child with severe asthma:	
	Clinical signs	**Measurements**
	Exhaustion	SpO_2 <92%
	Hypotension	PEF <33% best or predicted
	Cyanosis	
	Silent chest	
	Poor respiratory effort	
	Confusion	

Clinical signs in acute asthma:
Table 15: Adults
SIGN/BTS 158, 2019

Table 15: Levels of severity of acute asthma attacks in adults[566-571]

Moderate acute asthma	Increasing symptoms PEF >50–75% best or predicted No features of acute severe asthma
Acute severe asthma	Any one of: - PEF 33–50% best or predicted - respiratory rate ≥25/min - heart rate ≥110/min - inability to complete sentences in one breath
Life-threatening asthma	Any one of the following in a patient with severe asthma:

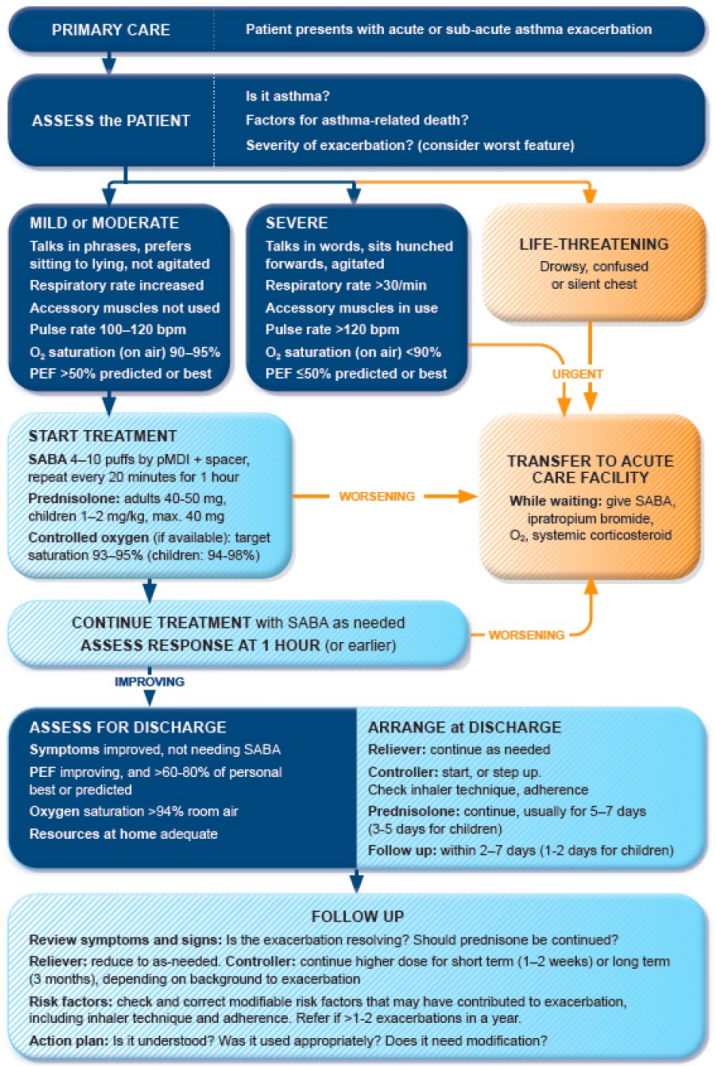
Clinical signs	**Measurements**
Altered conscious level	PEF <33% best or predicted
Exhaustion	SpO_2 <92%
Arrhythmia	PaO_2 <8 kPa
Hypotension	'normal' $PaCO_2$ (4.6–6.0 kPa)
Cyanosis	
Silent chest	
Poor respiratory effort	

Near-fatal asthma	Raised $PaCO_2$ and/or requiring mechanical ventilation with raised inflation pressures[555-557]

SIGN/BTS 158, 2019

www.ginasthma.org

Box 4-3. Management of asthma exacerbations in primary care (adults, adolescents, children 6–11 years)



O_2: oxygen; PEF: peak expiratory flow; SABA: short-acting beta$_2$-agonist (doses are for salbutamol).

Confirm diagnosis

↓

Determine Severity

↓

Treatment and assessment

↓

Admit discharge and arrange follow -up

& use own clinical judgement

www.sign.ac.uk

Age >5 years

ASSESS AND RECORD ASTHMA SEVERITY

Moderate asthma	Acute severe asthma	Life-threatening asthma
• SpO_2 ≥ 92% • Able to talk • Heart rate ≤125/min • Respiratory rate ≤30/min • PEF ≥50% best or predicted	• SpO_2 <92% • Too breathless to talk • Heart rate >125/min • Respiratory rate >30/min • Use of accessory neck muscles • PEF 33–50% best or predicted	SpO_2 <92% plus any of: • Silent chest • Poor respiratory effort • Agitation • Confusion • Cyanosis • PEF <33% best or predicted
	• Oxygen via facemask to maintain SpO_2 94–98% if available	
• β_2 bronchodilator: - via spacer* • Consider oral prednisolone 30–40 mg	• β_2 bronchodilator - via nebuliser (preferably oxygen-driven), salbutamol 5 mg - *or*, if nebuliser not available, via spacer* • Oral prednisolone 30–40 mg **Assess response to treatment 15 mins after** β_2 bronchodilator	• β_2 bronchodilator with ipratropium: - via nebuliser (preferably oxygen-driven), salbutamol 5 mg and ipratropium 0.25 mg every 20 minutes - *or*, if nebuliser and ipratropium not available, β_2 bronchodilator via spacer* • Oral prednisolone 30–40 mg *or* IV hydrocortisone 100 mg if vomiting
IF POOR RESPONSE ARRANGE ADMISSION	**IF POOR RESPONSE REPEAT β_2 BRONCHODILATOR AND ARRANGE ADMISSION**	**REPEAT β_2 BRONCHODILATOR VIA OXYGEN-DRIVEN NEBULISER WHILST ARRANGING IMMEDIATE HOSPITAL ADMISSION**

GOOD RESPONSE

- Continue β_2 bronchodilator via spacer or nebuliser, as needed but not exceeding 4 hourly
- **If symptoms are not controlled repeat β_2 bronchodilator and refer to hospital**
- Continue prednisolone until recovery (minimum 3-5 days)
- Arrange follow-up clinic visit within 48 hours
- Consider referral to secondary care asthma clinic if 2nd attack within 12 months.

POOR RESPONSE

- Stay with patient until ambulance arrives
- Send written assessment and referral details
- Repeat β_2 bronchodilator via oxygen-driven nebuliser in ambulance

LOWER THRESHOLD FOR ADMISSION IF:

- Attack in late afternoon or at night
- Recent hospital admission or previous severe attack
- Concern over social circumstances or ability to cope at home

NB: If a patient has signs and symptoms across categories, always treat according to their most severe features

Annex 6

Key Message

- Do NOT prescribe so called salbutamol (SABA) weaning plans:
  - No evidence
  - Unlicenced
  - Dangerous
- Ideally prescribe an Anti-inflammatory Reliever (AIR) with MART & with safety netting advice!

Post asthma attack review (< 2 days)

Is the attack over?

Yes

Why did the attack happen

- Poor symptom control
- Failure to recognise risk

No

ACTION

Admit to Hospital

Optimise treatment

Review again

Action

- Optimise treatment
- Personal Asthma Action Plan

Key action # 4 to prevent asthma attacks & Deaths:

- Do a proper post attack review – ideally before the Oral Corticosteroids run out
- So a practice should have a system to code asthma attacks – and delegate someone who is appropriately trained to perform this
- Ideally keep one appointment free every day for asthma review

Asthma Spotlight Podcast: Spotify ; Apple

Key action # 5 to prevent asthma attacks & Deaths: Implement Mark Levy's 7-Step Plan to end asthma attacks

Mark Levy's 7-Step Plan for GPs to prevent future asthma attacks

1. Agree a regular meeting to discuss at risk patients (e.g 2 weekly) *(Ideally chaired by someone with some asthma expertise)*
2. Establish a system to Identify patients for review
3. Use or adapt a structured template for review
4. Identify any modifiable risk factors
5. Agree a process to address those problems that can be dealt with
6. Refer those to asthma specialists who may have severe asthma
7. Agree who will review the patient to implement the agreed changes

www.bigcatdoc.com for Asthma Spotlight Podcasts and 7-Step Plan https://bigcatdoc.com/2024/01/10/2024-identify-that-an-asthma-attack-is-a-red-flag/

Resources:

www.ginasthma.org : www.bigcatdoc.com

@ginasthma ; @ bigcatdoc

Asthma Spotlight Podcast on SPOTIFY and APPLE Podcasts

Asthma is the commonest Chronic Childhood disease and accounts for a large proportion of a GP's work – so in my view every GP should be up to date and competent to manage asthma

Key messages- Asthma is a Chronic Disease!

- Assess severity of attacks objectively, admit if severe, Prescribe enough Oral Corticosteroids – i.e. UNTIL RESOLVED
- Ensure post attack reviews are done < 2 days
  - Code people who had asthma attacks (Rxed in practice/ED/Admission)
    - Practice Manager / Doctors
    - Block one appointment a day for asthma review
  - Trained person does the review
  - Check Inhaler Technique / agree personal action plan
- Identify those at risk of asthma attacks/death
  - Previous attacks
  - Past life-threatening attack
  - SABA prescriptions (≥ 3 a year)
  - ICS Prescriptions (none or ≤ 75% collected)
  - REFER anyone who had ≥ attacks in last 12 months