



# An Interdisciplinary Model for Cough and Secretion Assessment in MND

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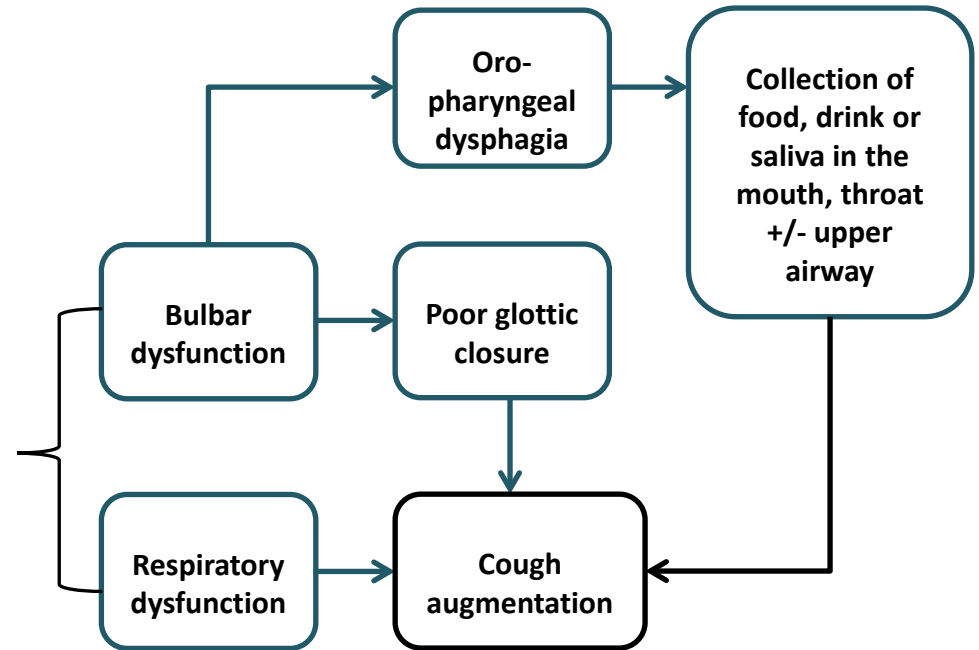
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# Cough and Secretion Management

*It's complex...*

- Cognitive and/or behavioural changes
- Pseudobulbar affect
- Neck weakness & altered posturing
- Upper limb dysfunction
- Loss of mobility
- NIV



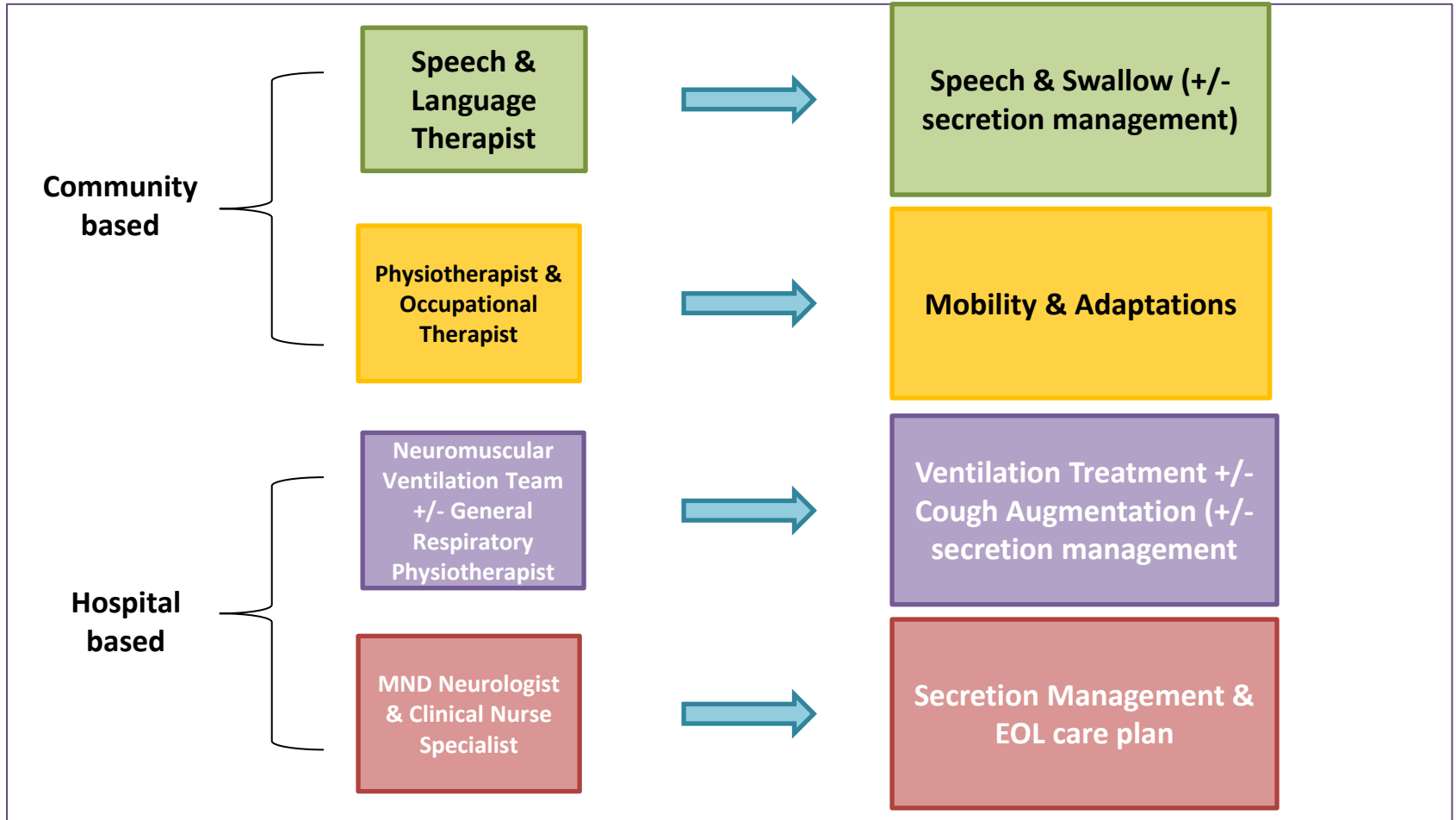


# Presentation Aims

- 1) Introduce our interdisciplinary model for cough and secretion assessment & management
- 2) Outline the use and benefits of this model for patients living with MND



# Traditional Models of Working



# Respiratory Muscle Weakness

# Bulbar Weakness

Hypoventilation

Weak cough

Weak cough & dysphagia

Dysphagia

Dysarthria

## Symptoms

Breathlessness  
Orthopnoea  
Morning headaches  
Night waking  
Nightmares  
Daytime fatigue

## Symptoms

Unable to clear secretions  
Chest infections  
Persistent coughing  
Phelgm

## Symptoms

Chest infections  
Persistent coughing  
Phelgm  
Sticking in throat  
Inability to clear

## Symptoms

Chest infections  
Persistent Coughing  
Sticking in the throat  
Weight loss  
Dehydration  
Saliva management issues

## Symptoms

Altered speech

## Assessment

FVC  
SNIP/MIP  
Blood gas  
Sleep study

## Assessment

FVC  
SNIP/MIP  
PCF

## Assessment

VFS  
FEES  
BFS  
Clinical Ax

## Assessment

BFS  
Clinical Ax

## Treatment

NIV

## Treatment

Cough augmentation  
MI:E  
Breathstack  
LVR

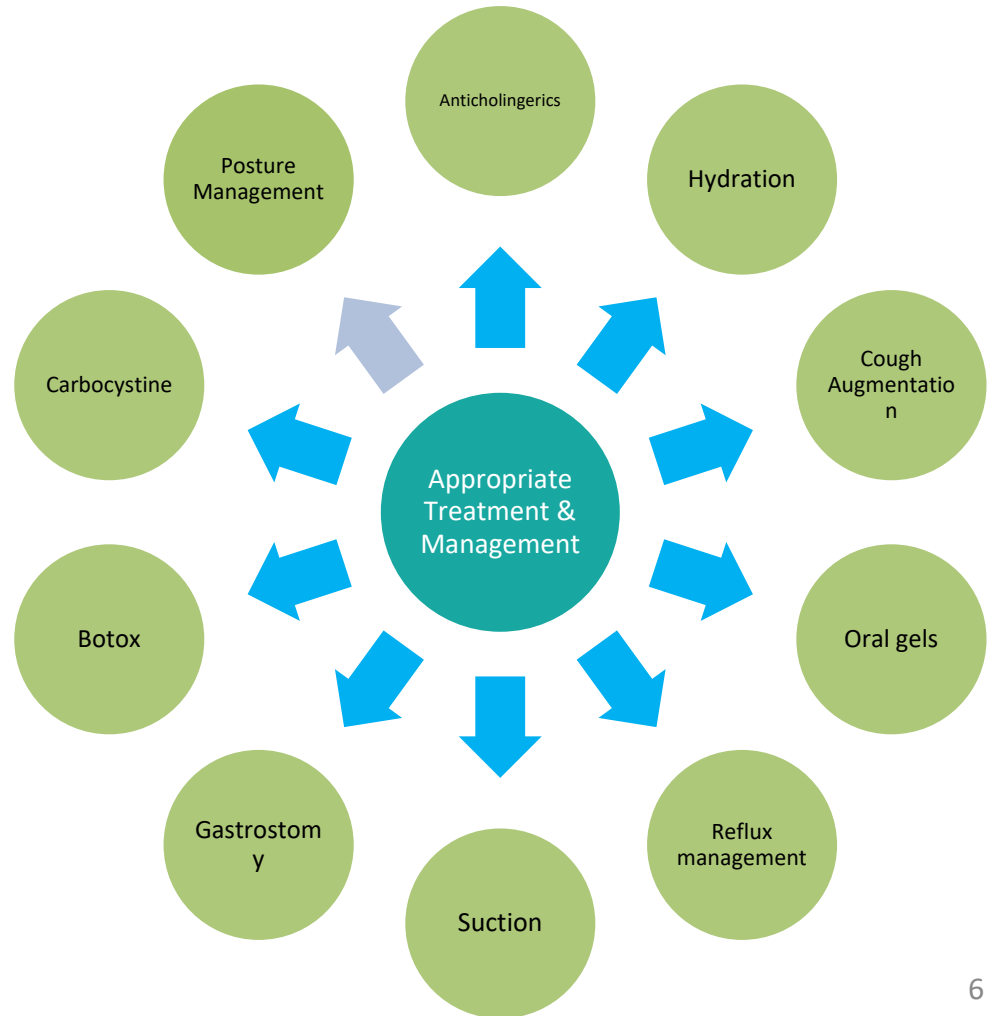
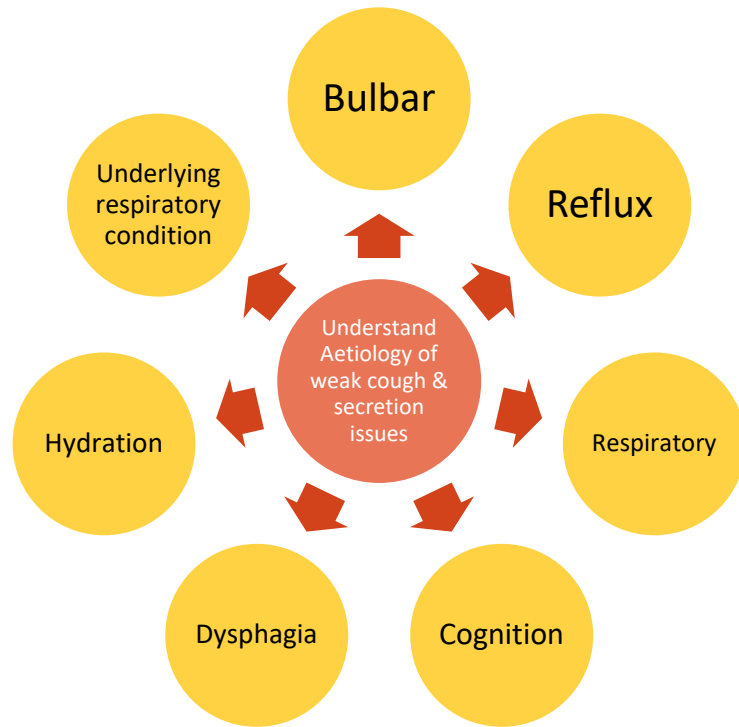
## Treatment

Diet modification  
Postural adjustments  
Gastrostomy  
Anticholinergics

## Treatment

Voice banking  
AAC

# Cough & Secretion Challenges





# A Model of Working

## Bulbar assessment

Patient report  
Clinical assessment

Is there a bulbar impairment?

Yes

No

Cough Peak Flow  
Symptoms of Respiratory Failure?

## Respiratory assessment

Patient report  
FVC/SNIP/PCF +/- blood gas

Is there a respiratory impairment?

Yes

No

Evidence of speech impairment?

Bulbar impairment  
AND  
Respiratory Impairment

**INTERDISCIPLINARY  
COUGH & SECRETION  
CLINIC**

Bulbar impairment  
BUT No  
Respiratory Impairment

**Management**  
Provide dysphagia management plan  
Provide secretion management plan  
Respiratory monitoring

Respiratory Impairment  
BUT no Bulbar impairment

**Management**  
Provide respiratory management plan  
Bulbar monitoring

No Bulbar impairment  
AND No  
Respiratory Impairment

**Management**  
Respiratory monitoring  
Bulbar Monitoring  
Voice banking



# The Patient with Bulbar & Respiratory Failure

## *An Example*

- 47 year old lady
- Diagnosis of ALS end 2018
- Referred to interdisciplinary clinic with recent chest infection and difficulty clearing sticky phlegm.
- Prescribed Carbocysteine

### Clinical Assessment:

Very mild mixed dysarthria  
No drooling or saliva management issues  
Eating & drinking with some adaptation  
Difficulty generating volitional cough  
c/o dry mouth

ALS FRS-R	17/48
Mobility	Wheelchair for longer distances
Brooke Upper Limb	6
Weight (kg)	58.5kg
Functional Oral Intake Scale	5
Bulbar Function Scale	53 (Saliva 7, Speech 21, Swallowing 25)
Non-invasive Ventilation (NIV)	None
Peak Cough Flow (PCF)	160l/min

### Treatment:

- Prescription of PPI
- Thrush treatment
- Referral for gastrostomy (hydration management)
- Cease Carbocysteine
- Cough assist trial & traffic light alert system

**Patient Aim:** 1) A strategy to clear phlegm 2) A plan for chest infections over the winter (requesting a cough assist)





# Asking the Right Questions

## What are the priorities for treatment?

Uncontrolled saliva

Weak cough

Dysphagia

Chest infections

Sticky phlegm

Stridor

Cause of cough symptoms  
Respiratory vs bulbar  
Voluntary vs reflexive  
Chronic respiratory condition  
Mobility & activity

Dysphagia management  
Reflux management  
Breath stacking  
Cough assist  
Suction  
Neuro vs resp chest mgmt plan

Hydration  
Reflux  
Pharyngeal weakness  
Weak cough

Gastrostomy support  
PPI/Gaviscon  
Nebulisers/Steaming  
Carbocysteine  
Cough assist



Tailored management programme



# Clinical Outcomes

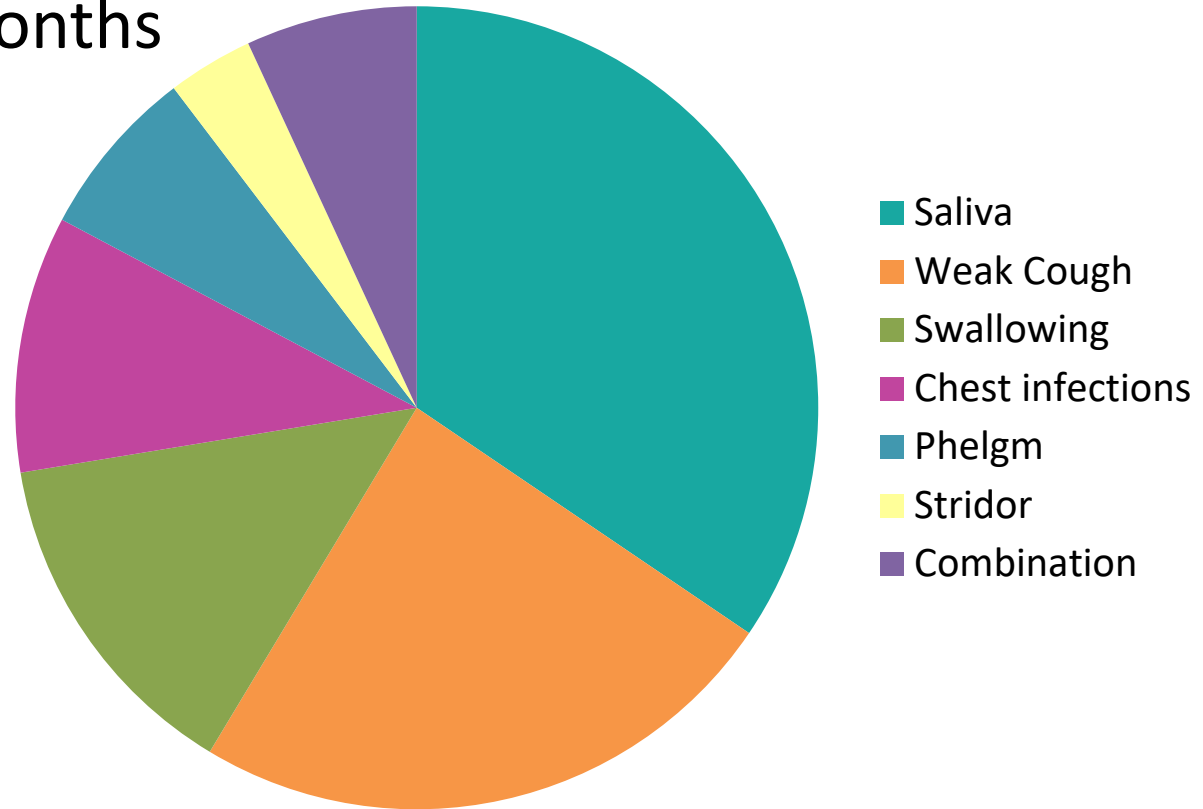
n = ~~59~~ 28 in 12 months

n = 10 ALS

n = 9 bulbar onset

n = 7 PLS

n = 1 FTD



PCF range 60 – 410l/min (5 unable)

Gastrostomy n = 10

NIV n = 7

Primary symptom



# Interdisciplinary Management

## Nasendoscopy assessment (n = 5):

- Presence of (silent) aspiration as contributor to chest infections
- Understand throat sensitivity and impact of reflux
- Support set-up of MI-E
- Quantity and viscosity of secretions
- Explore vocal fold movement and stridor

## Altered Management Programmes:

Change in

**Additional Management**

- Treatment for oral candida
- Salvia gels
- Neck collars
- Voice banking
- Humidification
- Chin Straps
- Referrals for AAC, OT wheelchair services
- Respiratory Assessment
- Ventilator Setting Change

n = 1 no change in baseline management



# Patient Satisfaction

## **1. In general, how would you rate your experience in clinic?**

90% rated highest possible score.

## **2. Do you feel all your swallowing, cough and secretions issues were addressed?**

90% reported all their needs were met, two thirds felt management went 'above and beyond.'

## **3. Did you feel that your views and opinions were listened to in the clinic?**

All patients felt that all their views were listed too, with 94% giving highest possible score.

## **4. Do you feel that this clinic appointment has added value to your care?**

All felt that the clinic added value to their care, with 94% giving highest possible score.

## **5. Would you recommend this clinic to other patients?**

All patients said they would recommend the clinic to others (97% gave the highest possible score).

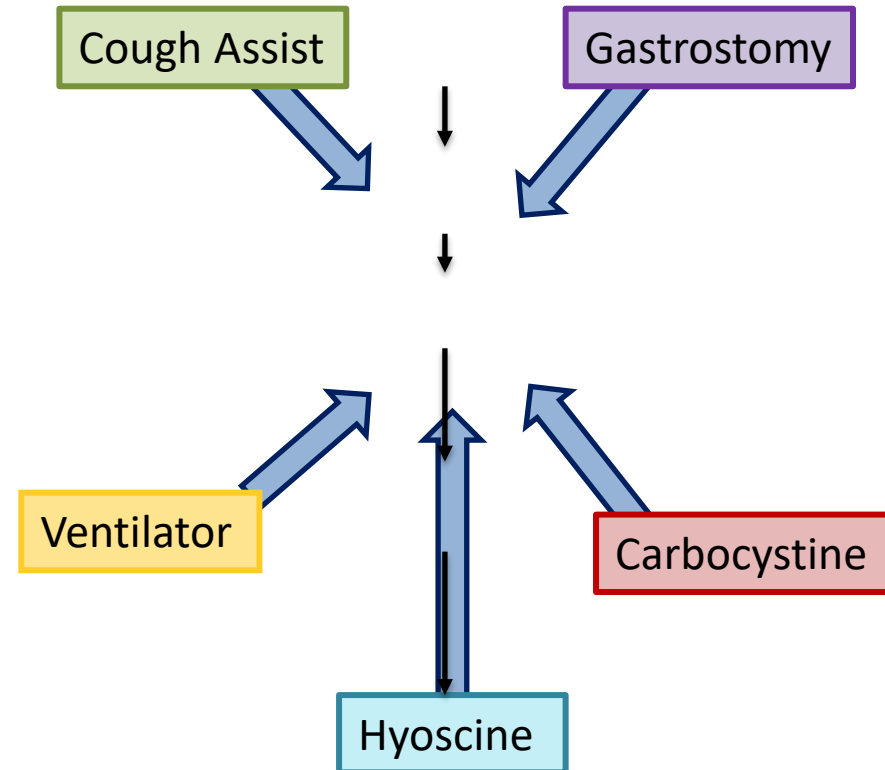


# Patient Feedback

“This is probably the most professionally run, **informative and useful** NHS clinic that I have ever attended.”

“Very positive appt with **plan of action** that was clear, **sensitive to my needs** with regard to treatment [**no intrusive tests** unless absolutely necessary] but clinically correct.”

“Thoroughly impressed with the level of service and attention provided... [they]... **took time to identify ongoing problems** and **seek solutions** where possible. Coming here today has been very supportive, beneficial, thank-you.”





# Recommendations to the Field

## Take Home Messages

- The multifaceted nature of cough & secretion management requires a comprehensive interdisciplinary approach.
- Our interdisciplinary model allows for contemporaneous, responsive and bespoke patient management programmes.
- This has demonstrated patient satisfaction, efficiency and quality care.



# Key References

Chatwin, M; Toussaint, M; Gonçalves, MR et al., (2018) Airway clearance techniques in neuromuscular disorders: A state of the art review. *Respiratory Medicine* 136: 98-110

Anderson T, Sandnes A, Brekka A, Hilland M, Clemm H, Fondenes O, Tysnes O, Heimdal JH, Vollsaeter M and Roksund O (2018) Laryngeal response patterns influence the efficacy of mechanical assisted cough in amyotrophic lateral sclerosis. *Thorax online*.

Allen, J & O'Leary, E (2018) Considerations for chest clearance and cough augmentation in severe bulbar dysfunction: a case study. *Can J Respir Ther* 2018;54(3):66–70. doi: 10.29390/cjrt-2018-014.

NICE Guidelines: Motor Neurone Disease: Assessment and management (2016)  
<https://www.nice.org.uk/guidance/ng42>



# Contact Information

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