Top 10 differential diagnoses in family medicine: Cough

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It has been widely accepted, since William Osler's time, that differential diagnosis represents a unifying concept in medical education. Indeed, as a student advances in knowledge and skill, the "differential" guides that student's history taking, physical examination, and investigational plan. A mature physician, in fact, often begins this process even before encountering individual patients, keeping a running list of likely diagnoses in mind. Each diagnosis becomes more or less likely according to the patient's presenting complaints; to the patient's age, sex, and general appearance; and finally to the individual historical, physical, and laboratory factors the patient reveals.

It is also now clearly established that most medical education in North America occurs in tertiary care settings and is often directed by specialists or subspecialists. Although this has led to an extremely current and well-informed curriculum, its applicability to primary care settings and to overall patient needs has
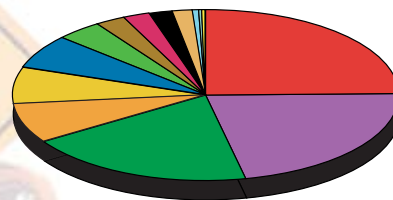
1. COUGH

Acute cough is usually readily diagnosed by clinical assessment, and usually represents a URTI, though pneumonia has to be ruled out.

Chronic cough is a diagnostic challenge. In the absence of red flags suggesting carcinoma or tuberculosis (weight loss, chronic night sweats, hemoptysis), common causes in the primary care setting are as follows:

- Post-viral cough can last up to 6 weeks after the acute infection, especially in the context of asthma;
- Post-nasal drip can be caused or exacerbated by sinusitis and seasonal allergies;
- Whooping cough usually necessitates culture or serologic diagnosis, and management would not be altered after 3 weeks into the illness (before this point, treatment would be offered to prevent spread to close contacts);
- GERD;
- COPD: and
- ACE-inhibitor induced cough.

Also consider aspirated foreign body in children and the debilitated. Certain authors suggest that an aural foreign body, even wax, can lead to chronic cough!

Under 45
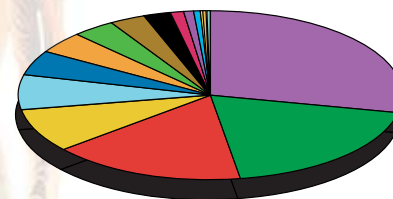
45 and Older

	AGE	
	Under 45	45 and Older
Acute Bronchitis	21.90 %	28.60 %
URI	25.00	16.40
Cough NYD	19.00	19.00
Acute Laryngitis/Tracheitis	6.90	8.30
Asthma	7.70	4.10
Sinusitis	3.80	3.70
Pneumonia	2.50	3.10
Influenza	2.00	2.20
COPD	0.60	6.70
Other Viral Disease	2.20	0.90
CHF	0.00	0.90
Allergic Rhinitis	0.40	0.20
Medication Side Effect	0.01	0.50
Lung Malignancy	0.01	0.40
Pertussis	1.70	0.20
Other	6.30	4.80

ACE—angiotensin-converting enzyme; CHF—congestive heart failure; COPD—chronic obstructive pulmonary disease; GERD—gastroesophageal reflux disease; NYD—not yet diagnosed; URI—upper respiratory infection; URTI—upper respiratory tract infection.

been in question for several decades.[1] Indeed, it is possible for a student to finish medical school without ever seeing and managing such common conditions as primary varicella or ingrown toenails.

For a pdf of the *Top Ten Differential Diagnoses in Family Medicine* pamphlet or to access the slide show on-line, go to **http://www.familymedicine. uottawa.ca/eng/TopTenDifferentialDiagnosisIn PrimaryCare.aspx**.

We have thus devised a guide—to be published here in the pages of *Canadian Family Physician* over the next 10 issues—to approaching the top 10 symptoms for which patients visit family doctors. These symptoms and the incidence of diagnoses emanating from them are taken from a unique, 4-year database created in the Netherlands: the Amsterdam Transition Project created by Drs Inge Okkes and Henk Lamberts.[2] They coordinated a team of dozens of primary care physicians who tracked symptoms until a diagnosis emerged. Further, this database is unique in that it uses the International Classification for Primary Care, which allows for undifferentiated and psychosomatic illness. Thus, this tool is designed for general practice. To our knowledge, no similar longitudinal data tool—with the ability to link presenting symptoms with eventual diagnosis in a primary care setting—exists, and certainly not in Canada.

Each guide to diagnosis also comes with a series of heuristic strategies to further develop an approach to diagnosing the symptom without missing rare but important diseases. These strategies are based on personal experience as well as standard texts[3,4] and will include differential diagnoses for acute and chronic presentations of symptoms, red flags, and reassuring features that can all guide your approach.

The biggest shortcoming of our project could be the assumption that primary care populations in the Netherlands and in Canada are comparable. We think that this is a reasonable assumption, and a necessary one until better Canadian data are collected.

We are hoping that the tool will be distributed and used widely (it is also available through the University of Ottawa's website at **http://www.familymedicine. uottawa.ca/eng/TopTenDifferentialDiagnosisInPrim aryCare.aspx)**, that you will give us feedback, and perhaps that it will encourage policy makers and others to devise a data-collection method capable of reproducing these results in Canada.

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