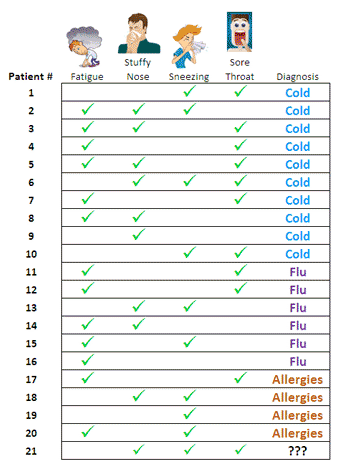
**April 2010 - Patient 21**



Making a correct diagnosis on a patient is a very challenging task for a doctor.  A complex disease can manifest through any number of symptoms which often leaves ‘trial and error’ as the only method for arriving at the correct diagnosis.  To aid doctors in this daunting task, mathematical modeling can be used to help guide a diagnosis.

Table 1 shows 20 patients with varying symptoms and corresponding diagnoses.  For example, Patient #1 reported symptoms of sneezing and a sore throat and was found to have a Cold.  Patient #20 exhibited symptoms of fatigue and sneezing which was found to be allergies.  All diagnoses were confirmed through lab tests.

**Question:  Patient 21 has not been diagnosed yet but is exhibiting symptoms of stuffy nose, sneezing, and sore throat.  Using only the data in Table 1, rank the three diagnoses (Cold, Flu, and Allergies) in order of how likely Patient 21 has each.**