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**Title:** Complex Patients, Polypharmacy and Guidelines

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**Introduction:**

Guidelines for disease management recommend when to use medications to treat health problems and what medications to use. Guidelines usually focus on starting medications for single diseases and few guidelines recommend when to stop medications or how to treat people with multiple medical problems. Patients with multiple problems are increasingly complex as there are many guidelines that could be applied. Complex patients usually take multiple medications (polypharmacy) and are at increased risk of adverse drug effects and drug interactions. This study explores if applying guidelines to these patients increases polypharmacy.

**Aims:**

To investigate the difference between the medications prescribed to complex patients and those recommended by guidelines.

**Methods:**

Eighty-nine consecutive patients acutely admitted to Christchurch Hospital under two general medicine teams were studied. For each patient the clinical notes were reviewed to compile lists of current medical problems and “current medications” at discharge.

For each medical problem the appropriate local, national or international management guideline was selected with the advice of relevant specialists and used to compile a list of “recommended medications” for each patient. The lists of current and recommended medications for each patient were compared to create three medication lists: taken and recommended; taken but not recommended; recommended but not taken.

**Results:**

One patient died while in hospital leaving 88 patients: 51 male, 36 female, and 1 transgender. Their average age was 71 years and the average number of current medical problems was 8, of which 6 were amenable to treatment with medication.

The average number of medications taken was 9 and the average number of medications recommended by guidelines was 10. On average one medication (95%CI 0.75-1.19) was taken but not recommended, most commonly vitamin D, benzodiazepines or proton pump inhibitors. Conversely, on average two medications (95%CI 1.57-2.41) were recommended but not taken, most commonly cholesterol lowering medications, blood pressure medications, and fibre for constipation.

**Conclusion:**

Application of the guidelines would have resulted in adding two medications and stopping one on average in this group. This was less than expected but was statistically and clinically

significant. Existing guidelines should be applied to complex patients with caution and future guidelines should include recommendations for stopping medications and adaptations for patients with multiple medical problems.

**Comment [MD1]:** Already stated in background...