MULTI-MORBIDITY AND THE IMPLICATIONS OF OVER-DIAGNOSIS, UNDER-DIAGNOSIS, TREATMENT BURDEN AND IATROGENESIS

PROFESSOR KAMILA HAWTHORNE (UNIVERSITY OF SWANSEA)

INTRODUCTION

Multimorbidity is defined as the presence of two or more chronic medical conditions in an individual and is an important topic as it is associated with decreased quality of life, functional decline, and increased healthcare utilization, including emergency admissions (1).

Treatment burden and iatrogenesis is the management of multi-morbidity with drugs is often complex, resulting in poly-pharmacy, and medication side effects and interactions. These patients account for 30% of the population but use 70% of NHS funds. The overall iatrogenic harm to patients in medical care settings has been calculated (from case record studies) as 12%, of which a half (6%) is preventable, with incidents related to drugs and other treatments accounting for the largest proportion of preventable patient harm (2).

Over-diagnosis defined as the diagnosis of a condition that, if unrecognized, would not cause symptoms or harm a patient during his or her lifetime. More broadly, it refers to the related problems of overmedicalisation, and subsequent overtreatment, diagnosis creep and shifting thresholds.

It is increasingly acknowledged as a consequence of screening for cancer (e.g. indolent breast, prostate, thyroid and lung cancers) and other conditions (chronic kidney disease, depression and attention-deficit/ hyperactivity disorder). One of its identifiers is as a ‘condition’ where the prevalence is rising but mortality is not. It is NOT a false positive result or misdiagnosis.

Under-diagnosis defined as the failure to identify a disease that ultimately threatens a person’s health.
**NEED TO KNOW**

**Multimorbidity**

Individual clinical care and community engagement:
Patients with multi-morbidity have a high treatment burden in terms of understanding and self-managing their conditions, attending multiple appointments, and managing complex drug regimens. Depression is commoner (3), with the prevalence of mental health disorders increasing as the number of physical morbidities increases (4). Clinical guidelines and research tend to have a 'single disease' focus rather than the complex interventions faced by GPs in day to day practice.

Influencing the wider political agenda:
A large scale Scottish study in 2012, of 314 GP practices (17.5 million people), reported that 42% had more than one chronic illness, and 23.2% had more than two (4). Although prevalence increased substantially with age, in absolute terms multi-morbidity is more prevalent in those aged <65 years and onset is 10-15 years earlier in deprived areas.

**Overdiagnosis**

Individual clinical care and community engagement:
Overdiagnosis can harm patients by leading to overtreatment, diagnosis related anxiety or depression, and labeling/ stigma (5). It makes people into patients unnecessarily, by identifying problems that were never going to cause harm, or by medicalising ordinary life experiences through expanded definitions of disease (6). In the USA, 17% of admissions are due to adverse drug events (7). Having patients on multiple medications is costly to the NHS: it is estimated that 50% of medicines prescribed for long-term conditions are not used! (8).

Influencing the wider political agenda - some of the drivers of over-diagnosis:
- Broadening disease definitions.
- Rigid clinical guidelines with limitations in the evidence underpinning these that obscure the understanding of diagnostic flexibility to individual, person-centred needs.
- Advanced diagnostic technology resulting in more incidental findings
- A medical culture that encourages greater use of tests and treatments, and encouragement of public over-reliance on 'medicine' to diagnose and cure all conditions.
- Managing ‘uncertainty’ in an environment heightened by medico-legal fear of missing something important.
- A tendency to do what the clinician thinks is ‘expected’ of them by their seniors or hierarchy (9).
- Commercial and professional vested interests, patient pressure groups.
- Payment and performance indicators that reward over-activity (10).
It should not be forgotten that the people we serve (our patients, their carers and the lay public) may, rightly and entirely reasonably, take a different view to those that fuel these drivers.

As expert generalists, general practitioners have specific expertise in managing multi-morbidity and a holistic approach to patient-centred care, at both individual and population-level interventions.

**SUMMARY**

**The challenges:**

- Multi-morbidity is the norm and the future for people with chronic disease.
- Numbers are rising and are strongly linked to areas with health and economic inequalities, increasing demand on resources in these areas.
- The ‘single-disease’ framework by which most health care is delivered and guided (NICE) is inefficient, wastes precious resources in staff time and diverts resources away from more clinically important goals. In some cases, it may even be unsafe for patients.
- Over-diagnosis is inherent to the modern practice of healthcare, which seeks to diagnose and mitigate disease before it is clinically evident. This results in identification of ‘conditions’ that may never progress or become clinically meaningful, and the challenge then becomes being able to identify these and either not test for them or ignore the findings and not treat them. The challenge is in understanding the balance of benefits and harms and aligning decisions with patients’ individual values and preferences.

**Useful learning links across this curriculum guide:**

- Shared decision-making
- The wider multi-disciplinary practice team in the care of patients with chronic illnesses
- Patient-centred care
- Managing uncertainty and balancing over-diagnosis against under-diagnosis
- Medical ethics in a primary care setting.
✓ Practices can identify patients with multi-morbidity for students to visit at home, to find out what their day to day life experiences are - how they view their lives, their futures, their experiences of using the NHS, their medications, the side effects etc. How do they value continuity of care? Do they have narratives showing how their care has been fragmented? Do they see multiple health professionals? How many medications are they on - do they know what each one is for? What functional difficulties do they have?
  o Try to include mental health as one of the morbidities so that students remember the importance of the holistic view of a patient.

✓ If the practice runs a multi-morbidity clinic, the students could sit in and try seeing some patients themselves with specific goals in mind
  o Getting a clear picture of the multiple morbidities, what each medication is for, and what monitoring is needed to keep healthy.

✓ If the practice has a clinical pharmacist, the students could have a session learning about how to rationalise and monitor the medications of a patient with multiple-morbidity (e.g. using the STOPP/ START tools (11)). Toolkit can be downloaded from Cumbria CCG website at: https://www.networks.nhs.uk/nhs-networks/nhs-cumbria-ccg/medicines-management/guidelines-and-other-publications/Stop%20start%20pdf%20final%20Feb%202013%20version.pdf/view

✓ Find an RCT based on a single disease and apply its findings to a patient who has this condition in addition to others (e.g. a 78-year-old woman with previous MI, T2DM, OA, COPD and depression). What drugs is she likely to be on, and what lifestyle modifications would have been discussed with her? Discuss the effects of side effects and drug interactions for the patient, the GP and the NHS.

✓ In small group work, discuss the case of screening for pre-diabetes as a possible scenario for over-diagnosis: guideline panels believe that harms related to over-diagnosis are offset by the population benefits of early diagnosis (and subsequent treatment) of true disease and therefore recommend risk assessment and targeted screening. Expanding the spectrum of diabetes to include 'pre-diabetes' promotes the false idea that untreated pre-diabetes will universally lead to diabetes. Review the criteria for population screening and discuss how limiting screening to people at the highest risk can minimize (though not eliminate) overdiagnosis while maximizing benefit. Discuss the drivers to over-diagnosis.
Transparent evidence-based thresholds are essential to avoid over-diagnosis and over-treatment. At present these thresholds are often decided by personal 'expert' opinion, as the underlying questions may not have been addressed by Evidence-Based Medicine.

✓ In small group work, discuss the benefits and harms of prostate cancer screening with the PSA test, and how to discuss these concepts with patients eg. Using patient decision aids. (Fig 4, Reference 5).

FURTHER LEARNING

RESOURCES

Websites:

Journals:

REFERENCES


12. O'Mahoney D, O'Sullivan D, Byrne S, O'Connor MN, Ryan C and Gallagher P. STOPP/START criteria for potentially inappropriate prescribing in older people.

The following resources have been developed in conjunction with SAPC Heads of GP Teaching. If you have any queries or questions regarding the resources on offer, please contact Prof. Joe Rosenthal or Prof. Alex Harding, Co-Chairs of SAPC’s Heads of GP Teaching Group.