**Background**

Multi-symptom, multi-system chronic disease is on the rise and the subsequent complexity of clinical presentations creates many challenges for General Practitioners. As the first line of care, GP’s face the difficult task of diagnosing and triaging these cases. The most challenging and complex presentations may leave GPs (and patients) feeling overwhelmed and frustrated.

**Aims**

To demonstrate how a Systems Biology/Functional Medicine approach to case taking, investigation and management can improve patient outcomes in complex case presentations.

**Methods**

A case series of 4 patients will be presented including a

71 year old female who presents with ‘*41 years of illness’*

50 year old man with a bizarre complex of symptoms, the cause of which was closer to home than anyone realised.

45 year old man who overcame recurrent chills and gastrointestinal complaints of 20 years duration, and an

85 year old lady with progressive (cause yet unidentified) liver failure, who recovered within months following one simple intervention.

**Results**

The cases studies will be used to illustrate how a systems biology approach to patient assessment can provide more effective patient and GP outcomes in complex presentations. They will illustrate how Doctors can utilize advanced laboratory testing to increase accuracy of root cause diagnosis, thereby targeting personalised treatments rather than relying solely on probabilistic symptoms-based diagnosis and management.

**Conclusions**

Multi-symptom, multi-system disease is on the rise and the complexity of presentations creates challenges for the current health care system. By learning and applying the principals of systems biology, GPs can improve the health of their most challenging cases, even those that have defied previous diagnosis. GPs are already the experts in generalism, thus are ideally placed to apply a systems biology approach to patient care, helping to lead the Medical Profession forward into the new era of Personalised Medicine.

**References**