Rough estimate of ED pathway (very simplified – there are undoubtedly other causal factors and feedback loops that operate – given as an example of the type of approach) Triage /case Markets/ Alt latrogenic Workforce Workforce Workforce Workforce Health lit/ self market models harm failure care capacity Internal ED ntra hospital Internal ward Regulation pathway efficiency efficiency availability efficiency Long range Short range demographic/ shocks **MAPU** Diagnostics Pop health epidemiology Quality/ availability comorbities barriers harm Step down, Care ED 1ry/OOH Ward Increased residential seeking referral +ve **Availability** care community care occupan occupancy wait Pathway availability –ve population +ve? availability cy +ve Perceived availabil ty –ve availability +ve Direct to ED Availability non-acute admission pathway alteratives?-ve % wait time over x hrs Distribution of ward By triage level Raw activity (trend) Occupancy rates occupancies Distribution of waits 3rd available appt Hours community care Measures of ward pathway Disposition of Measures/ **Patient Reported** available Weighted LOS presentation availability (spoilers -Funding mechanisms Measures of on ward harms balance Disposition of long decreasing) ED presentations/ Acute (e.g. lost bed days) measures wait presentations Patient reported admissions from care Shifts below required fte Measures of ED sought ED as primary Delayed discharge others pathway not available (spoliers Discharge destination Diagnosite avaiability -low) Unplanned readmissions

⁺ve indicates that a change in the pathway has a change on its dependent which operates in the same way – e.g an increase in ward occupancy is hypothesised to increase ED wait (as harder to admit). –ve indicates the reverse – e.g. an increase in step down etc care availability decreases ward occupancy (as easier to discharge)

Influence	What	Who	Abiilty to influence	Effect on issue	Ease of implement
Long range epidemiology/ pop health/ co-morbidities	Policy interventions, health care improvements	Central government, health care in general	? High	? High but slow	Hard
Health literacy	Policy intervention	Ministry of health	?moderate	Low	Hard/mod
Short range shocks	Preparedness	Central government, ministry of health	?moderate	High but rare	Mod
Workforce primary care	Policy, funding, international factors	Central government, ministry of health, primary care prof and meso-level	Low/mod	Mod	Hard/mod
\$ primary care	Policy, funding	Central government, treasury, ministry of health, primary care prof and meso-level	Mod	Mod	Easier (but ?effective)
Barriers to primary care	etc				
Alternate models of care					
Workforce secondary care					
\$ secondary care					
ED pathway	Service design, training, funding, deployment	Te Whatu Ora – local/meso/national	High	High / Low*	Hard/mod
Diagnostic availability	Funding, deployment	Te Whatu Ora – local/meso/national	High	High/mod	Hard
Ward efficiency	Service design, quality improement, training, funding, deployment	Te Whatu Ora – local/meso/national, Te Tahu Hauora			
Ward safety	Quality improvement , training, funding, deployment	Te Whatu Ora – local/meso/national, Te Tahu Hauora			
Intra hospital efficiency	etc				
Models (MAPU etc)					
Etc					
* Potentially high if implemented with strategic coherence, probably low if done in isolation					