Memorandum

To:	Web page advice for doctors
From:	Dr Chris Mansell clinical microbiologist, Dr Stephen Du Toit chemical pathologist
Date:	21/12/2020
Subject:	Gentamicin level testing severely limited till 18 Jan 2021

Situation

Due to supply problems, our ability to test gentamicin levels will be limited until more reagents arrive from overseas and we may suddenly be unable to provide them at all.

Background

Gentamicin is an important part of managing sepsis and severe infection in hospital in-patients, especially before the causative organism is known (empiric treatment). The drug can be toxic and prudent practice is to limit the time it is given or to monitor levels for longer courses.

In most cases, gentamicin is only used for one or two doses and monitoring isn't needed. If a course longer than 48 hr is being considered, you will need to consult with the infectious disease team. (Microguide: https://viewer.microguide.global/WDHB/ADULT#drug,BssbrdTQfz). Within working hours, there is an infectious disease registrar and out of hours an infectious diseases subspecialist is sometimes on call for general medicine. A clinical microbiologist is also usually available for advice out of hours.

In many cases, by 48 hr from starting empiric treatment, the organism will have been identified and tested and an alternative, effective antibiotic will be known.

Assessment

The clinical impacts of this will be manageable, as most gentamicin treatment doesn't require monitoring and alternatives are available

Recommendation

If longer treatment with monitoring is needed, tobramycin should be used instead of gent and we can measure tobra levels. Milligram doses and target levels are the same as for gentamicin. The mechanism of action and antimicrobial spectrum of tobramycin are the same as for gentamicin. In the Waikato, 98.5% of gentamicin susceptible E. coli class organisms were also susceptible to tobramycin. The marginally better coverage of gentamicin is one reason it is recommended for empiric treatment. Note that 6.5% overall were resistant to gentamicin.

	Enterobacteriales 2015-17			
		Tobra		
		S	R	
Gent	S	92.0%	1.4%	
	R	0.5%	6.0%	
		total isolates n=		10320