

# IMPLEMENTATION OF AN ANTIBIOTIC STEWARDSHIP PROGRAM TO INCREASE APPROPRIATE ANTIBIOTIC USE IN THE HOSPITAL ON ARUBA

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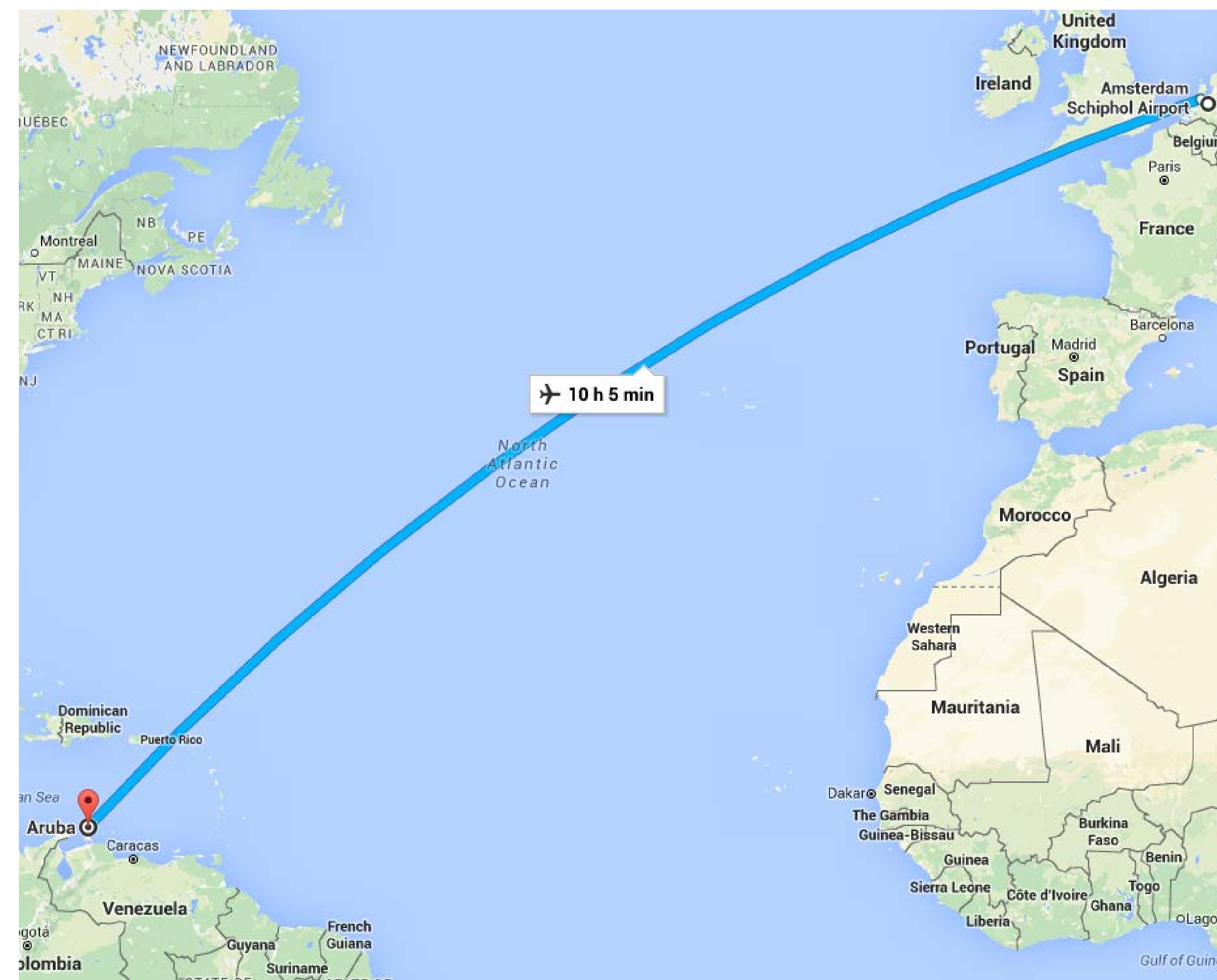
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## Background

- ASPs aim to measure and improve appropriate antibiotic use.
- The Netherlands is one of the leading countries in the implementation of ASPs in hospitals.
- Aruba is a constituent country of the Netherlands, but has no ASP yet.
- Implementation of an antibiotic checklist resulted in more appropriate antibiotic use in Dutch hospitals.



- AIMS:**
1. Start ASP on Aruba
  2. Test the effectiveness of the antibiotic checklist on Aruba
  3. Evaluate the possibility of implementing the antibiotic checklist outside the Netherlands

## Antibiotic checklist

Phase 1: the start of antibiotic treatment intravenously		Yes	No
1	Take at least two sets of blood cultures before starting systemic antibiotic therapy	<input type="checkbox"/>	<input type="checkbox"/> In my opinion, not necessary with this diagnosis <input type="checkbox"/> Cultures have been taken < 1 week ago <input type="checkbox"/>
2	Take specimens for culture from suspected sites of infection	<input type="checkbox"/>	<input type="checkbox"/> No culture possible <input type="checkbox"/> Cultures have been taken < 1 week ago <input type="checkbox"/>
3	Prescribe systemic antibiotic treatment according to the local antibiotic guideline	<input type="checkbox"/>	<input type="checkbox"/> According to other guidelines, namely ..... <input type="checkbox"/> allergy <input type="checkbox"/> In consultation with the infectiologist <input type="checkbox"/>
4	a. Determine renal function	<input type="checkbox"/>	<input type="checkbox"/>
	b. Adapt dose and dosing interval of systemic antibiotics to renal function	<input type="checkbox"/>	<input type="checkbox"/> Not applicable <input type="checkbox"/>
5	Document the indication for the antibiotic treatment in the case notes or electronic medical record (EMR).	<input type="checkbox"/>	<input type="checkbox"/>
Phase 2: after 48-72 hours of treatment		Yes	No
6	Adapt therapy when culture results become available.	<input type="checkbox"/>	<input type="checkbox"/>
7	Switch from intravenous to oral antibiotic therapy after 48-72 hours	<input type="checkbox"/>	<input type="checkbox"/> Insufficient clinical improvement. <input type="checkbox"/> No available oral antibiotic <input type="checkbox"/> no adequate oral intake/ gastrointestinal absorption <input type="checkbox"/> No oral therapy possible with this diagnosis <input type="checkbox"/>

- Includes 7 generic quality indicators
- Divided in 2 bundles:
  - Bundle 1 – start of AB treatment IV
  - Bundle 2 – during course of treatment

## Study periods

1. Baseline (2 months): Collection of baseline data
2. Transition (1,5 month): Start of ASP activities
3. Intervention (2 months): Use of checklist, continuation of ASP activities, collection of intervention data

## Results

Items on the checklist	Baseline (n = 150)	Intervention (n =173)	Comparison			
			change %	OR*	CI 95%	P
	numerator/denominator	numerator/denominator				
Blood cultures	22/150	119/173	+ 54	13.7	7.7-24.2	<0.001
Cultures of suspected site of infection	33/68	41/99	- 7	0.69	0.4-1.3	0.27
Guideline adherence	67/109	79/138	- 4	0.84	0.5-1.4	0.51
Adjustment to renal function	6/16	12/23	+ 15	1.84	0.5-6.8	0.36
Documented antibiotic plan	116/150	154/173	+ 12	1.90	1.0-3.7	0.06
De-escalation	15/53	21/77	- 10	1.07	0.5-2.2	0.85
IV-oral switch	29/85	41/98	+ 8	1.17	0.6-2.2	0.64
SUM SCORE QI ≥ 50%	75/150	134/173	+ 28	3.67	2.2-6.0	<0.001

\*after correction for confounders

## Conclusions

The awareness created by the ASP activities including the implementation of the antibiotic checklist resulted in an increase in sum score of QIs for appropriate antibiotic use on Aruba. Further initiatives are necessary for further improvement, especially to improve antibiotic guideline adherence.