

# *mit* ABS ~~in~~ der Pflege

Rita (Maria) Bos RN <sup>1,2</sup>

C. de Bot RN, PhD <sup>1</sup>

Prof. H. Vermeulen <sup>2,3</sup>

Prof. M. Hulscher <sup>2</sup>

J. Schouten MD, PhD <sup>2,4</sup>

<sup>1</sup> Avans University of Applied Sciences, 's Hertogenbosch/Breda, the Netherlands

<sup>2</sup> Scientific Center for Quality of Healthcare (IQ Healthcare), Radboud University Medical Center, Nijmegen, the Netherlands

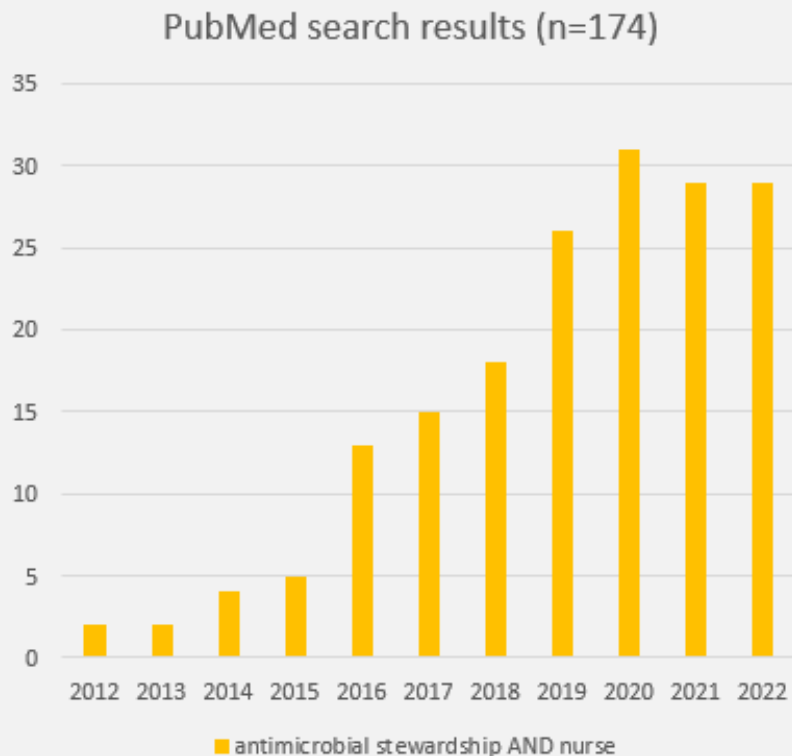
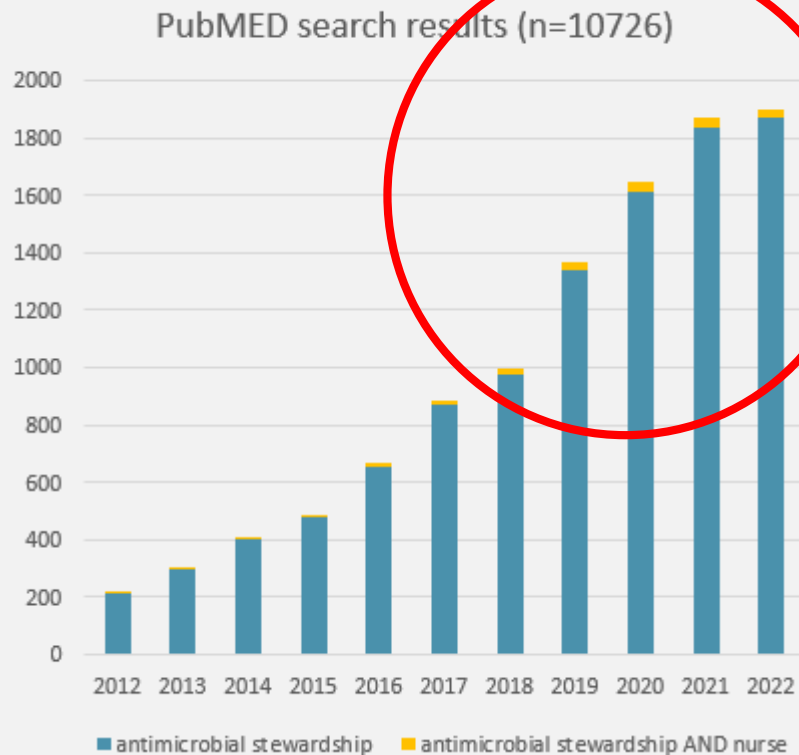
<sup>3</sup> School of Health, HAN University of Applied Sciences, Nijmegen, the Netherlands

<sup>4</sup> Department of Intensive Care Medicine, Radboud University Medical Center, Nijmegen, the Netherlands



Diese Forschung ist Teil des Projekts "Nurses' Participation in Antimicrobial Stewardship" (NuPAS) mit der Projektnummer 023.014.043 des Forschungsprogramms "Doctoral Grant for Teachers", das vom niederländischen Forschungsrat (NWO) finanziert wird.

# NURSE AND ANTIMICROBIAL STEWARDSHIP?



# Antibiotika-Resistenz und Pflegefachpersonal



## 5 objectives:

- ▶ to improve awareness and understanding of antimicrobial resistance through effective communication, education and training;
- ▶ to strengthen the knowledge and evidence base through surveillance and research;
- ▶ to reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures;
- ▶ to optimize the use of antimicrobial medicines in human and animal health;
- ▶ to develop the economic case for sustainable investment that takes account of the needs of all countries and to increase investment in new medicines, diagnostic tools, vaccines and other interventions.

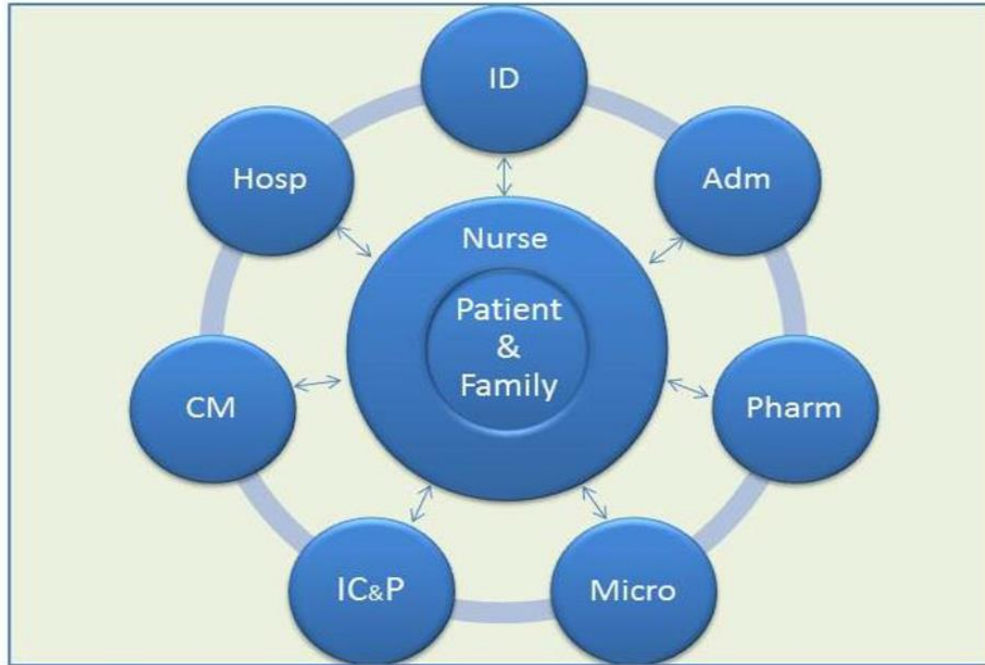
to reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures;

▶ to improve awareness and understanding of antimicrobial resistance through effective communication, education and training;

▶ to optimize the use of antimicrobial medicines in human and animal health;



# Pflegefachpersonal und Patienten...



**Fig 1: Workflow Communication**

ID-Infectious Disease Adm-Administration Pharm-Pharmacy Micro-Microbiology  
 IC&P-Infection Control/Prevention CM-Case Management Hosp-Hospitalist

**Table 2. Minutes Spent in Patients' Rooms During Each Observed Entry**

Care Role	N (%) of Total Entries	Median (Range)
Nursing staff*	1,462 (45)	2 (1–120)
Medical staff†	558 (17)	3 (1–72)
Other clinical staff‡	140 (4)	3 (1–45)
Nonclinical staff§	245 (8)	3 (1–65)
Personal visitors	741 (23)	14 (1–124)
All groups	3,250 (100)	3 (1–124)

\* Includes nurse practitioners, registered nurses, licensed practical nurses, and nursing assistants.

† Includes physicians, physician assistants, and medical students.

‡ Includes physical therapists, respiratory therapists, radiology technicians, and laboratory technicians.

§ Includes dietary/food service staff, housekeeping staff, and patient transportation staff.

|| Total includes room entries by people whose role could not be determined.

Cohen B, Hyman S, Rosenberg L, Larson E. Frequency of Patient Contact with Health Care Personnel and Visitors: Implications for Infection Prevention. The Joint Commission Journal on Quality and Patient Safety. 2012;38(12):560-5.

# Pflegfachpersonen

Weltweit:

27.900.000



Deutschland

486.100 (Krankenhäusern)

945.000 (Heimen-  
Ambulanten Diensten)

Nicht in diesem Vortrag:  
Pflegefachpersonen die Teil sind einer  
ABS-team

# Bereits ab 2010...

J Antimicrob Chemother 2010; 65: 2275–2277  
doi:10.1093/jac/dkq357 Advance Access publication 16 September 2010

Journal of  
Antimicrobial  
Chemotherapy

## Antibiotic stewardship programmes—what's missing?

Esmita Charani<sup>1\*</sup>, Jonathan Cooke<sup>2</sup> and Alison Holmes<sup>1</sup>

<sup>1</sup>Centre for Infection Prevention & Control, NHS Foundation Trust, Wyl



## Covering more territory to fight resistance: considering nurses' role in antimicrobial stewardship

**R Edwards<sup>1,\*</sup>, LN Drumright<sup>1</sup>,**

*1. The National Centre for Infection Control*

American Journal of Infection Control 41 (2013) 365-7

Contents lists available at ScienceDirect

American Journal of Infection Control

journal homepage: [www.ajicjournal.org](http://www.ajicjournal.org)



Brief report

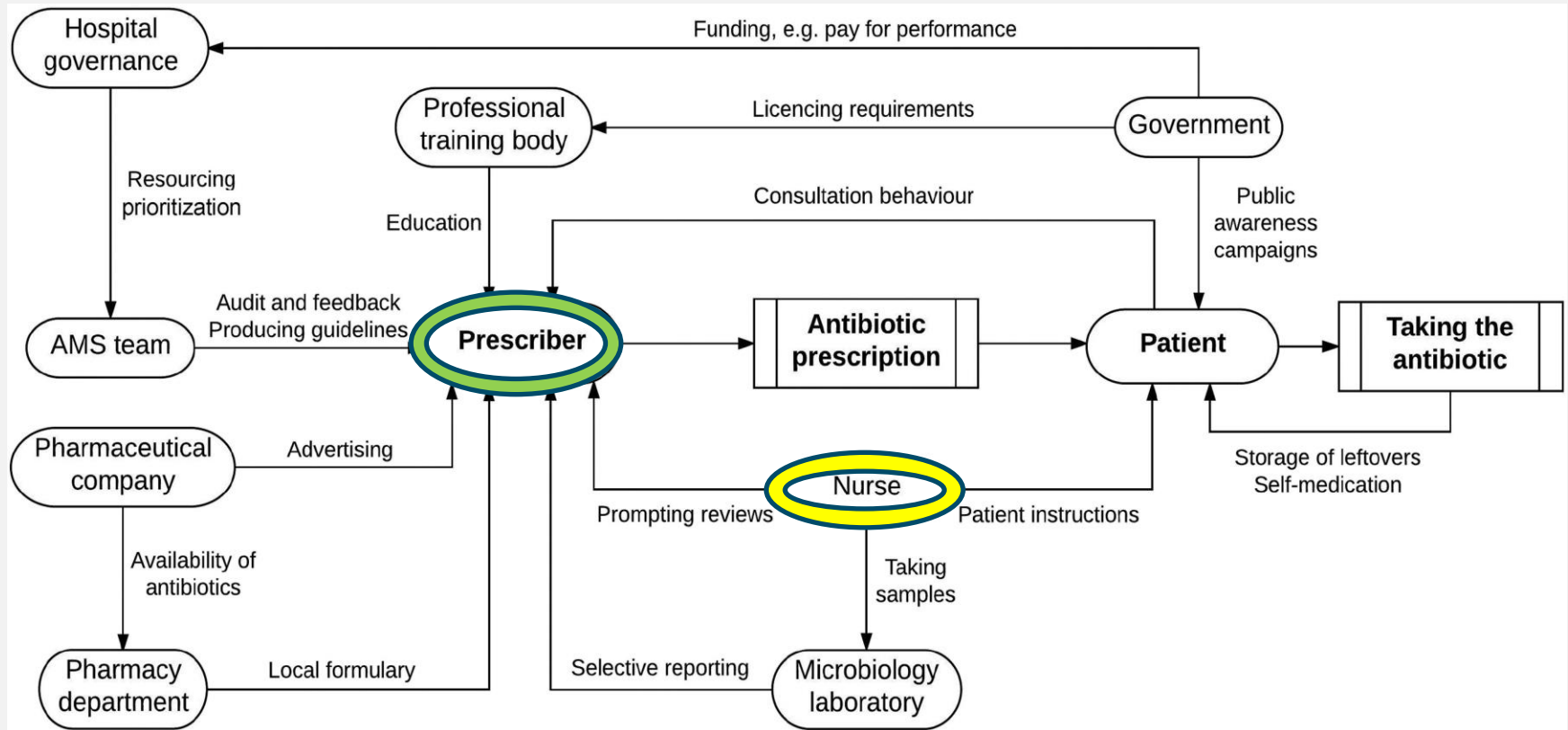
### Improving antibiotic stewardship by involving nurses

Elizabeth Gillespie MPubHlth(Melb)<sup>a,\*</sup>, Anne Rodrigues RN<sup>a</sup>, Louise Wright RN<sup>a</sup>, Natalie Williams RN<sup>a</sup>, Rhonda L. Stuart PhD, MBBS, FRACP<sup>b</sup>

<sup>a</sup>Infection Control and Epidemiology Unit, Southern Health, Melbourne, Victoria, Australia

<sup>b</sup>Infection Control and Epidemiology Unit, Department of Medicine, Southern Health, Monash University, Melbourne, Victoria, Australia

# Wer macht was (im Rahmen des Antibiotic Stewardship)?





# LEITLINIEN & POSITION PAPERS

2017



INTERNATIONAL COUNCIL OF NURSES

Position Statement



Antimicrobial resistance

2018

**WHO COMPETENCY FRAMEWORK  
FOR HEALTH WORKERS' EDUCATION  
AND TRAINING ON ANTIMICROBIAL  
RESISTANCE**



2017

WHITE PAPER



**Redefining the Antibiotic Stewardship Team:  
Recommendations from the American Nurses  
Association/Centers for Disease Control and Prevention  
Workgroup on the Role of Registered Nurses in Hospital  
Antibiotic Stewardship Practices**

**12** Role of nurses, midwives and infection  
control practitioners in antimicrobial  
stewardship

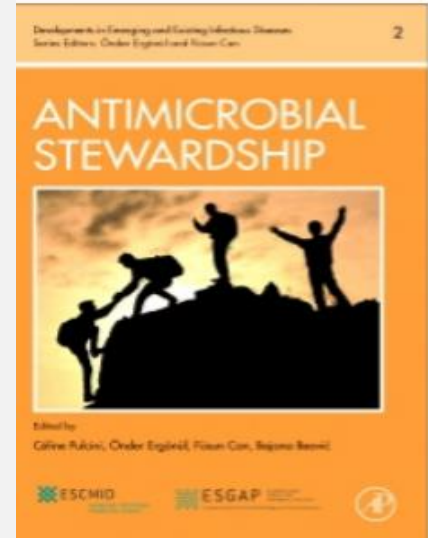
**Antimicrobial Stewardship  
in Australian Health Care**

2018






European Federation of Nurses Associations (EFN)

**Antibiotika-Resistenz und die Rolle der Pflegefachpersonen**



# Summary of Bedside nurses' activities with regard to (appropriate) antibiotic use (as proposed by guidelines and position papers)

<p><b>Domain 1</b> Assessment of Clinical Status</p> 	<p><u>Assessment of clinical status:</u></p> <ul style="list-style-type: none"> <li>Identify source of infection (assess, diagnose &amp; identify appropriate precautions)<sup>16,17,19</sup></li> <li>Identify and escalate patients with signs of acute deterioration or infection<sup>7</sup></li> <li>Identify if patient has symptoms that justify diagnostics (e.g. does patient have symptoms that justify urine culturing?)<sup>21</sup></li> </ul> <p><u>Monitoring clinical status of the patient</u></p> <ul style="list-style-type: none"> <li>Monitor and report daily clinical status, including e.g. laboratory results (e.g. renal function test results)<sup>17,19,22</sup></li> <li>Monitor treatment outcomes<sup>16</sup></li> <li>Monitor capacity for oral intake<sup>17,21</sup></li> </ul>
<p><b>Domain 2</b> Collection of Specimen</p> 	<p><u>Collection of Specimen</u></p> <ul style="list-style-type: none"> <li>Taking cultures before administering AB<sup>17,21,22</sup></li> <li>Correctly taking cultures (avoiding contamination, unnecessary sampling/maintaining specimen quality)<sup>7,19,21,22</sup></li> </ul> <p><u>Communication and documentation of results</u></p> <ul style="list-style-type: none"> <li>Monitoring culture results (including sensitivity results?)<sup>7,17</sup></li> <li>Timely informing prescribers/physicians about results<sup>17,22</sup></li> </ul>
<p><b>Domain 3</b> Management of Antimicrobial Medication</p> 	<p><u>Allergy Assessment</u></p> <ul style="list-style-type: none"> <li>Take and document allergy<sup>17,19,21,22</sup></li> </ul> <p><u>Administration of antimicrobial medication</u><sup>16,17</sup></p> <ul style="list-style-type: none"> <li>Medication reconciliation (including discharge)<sup>7,18,22</sup></li> <li>Timely administration (including first dose antibiotics if patient has sepsis)<sup>7</sup></li> <li>Respect medication safety principles (5 rights of medication administration)<sup>7</sup></li> <li>Reduce incidence of missed antimicrobial doses<sup>7</sup></li> <li>(Help) comply with surgical prophylaxis quality indicators<sup>22</sup></li> </ul> <p><u>Documentation of antimicrobials</u><sup>7</sup></p> <ul style="list-style-type: none"> <li>Document the indication &amp; duration of antibiotic treatment<sup>7</sup></li> <li>Documentation of administered antimicrobials<sup>19</sup></li> </ul> <p><u>Monitor adverse events e.g. diarrhoea</u><sup>7,17,19,22</sup></p>



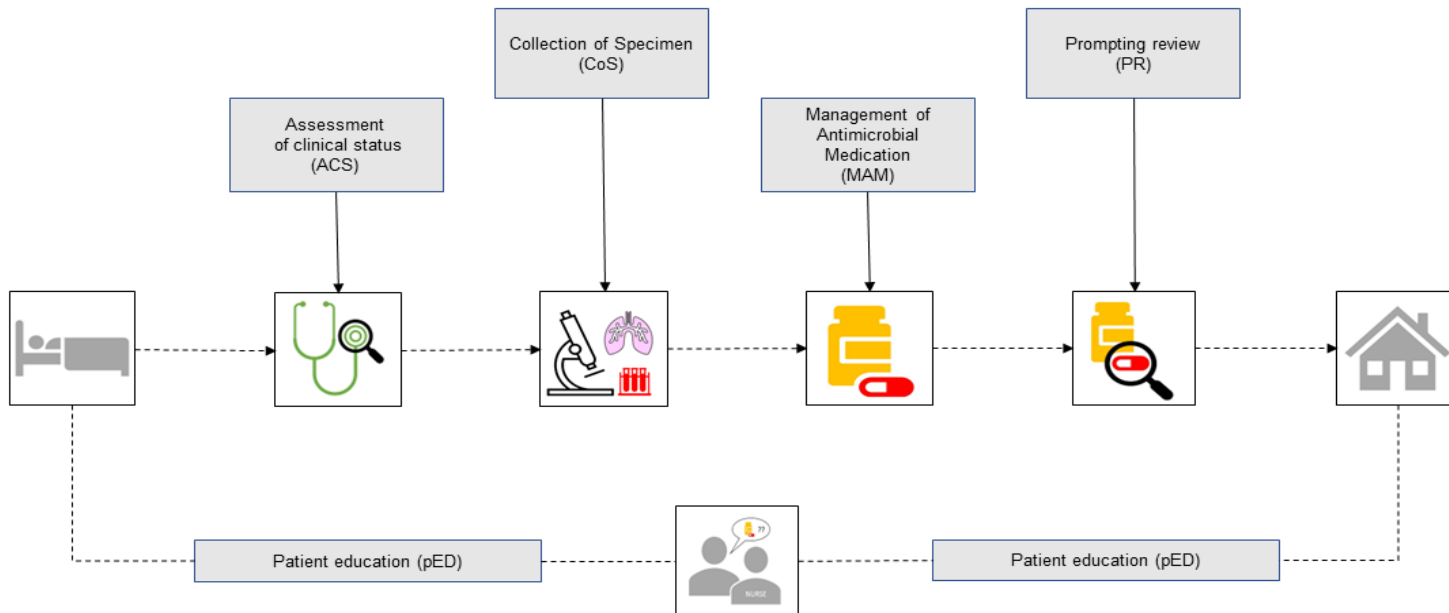
<p><b>Domain 4</b> Prompting Review</p> 	<p><u>Prompting review of antimicrobial treatment</u><sup>21</sup></p> <ul style="list-style-type: none"> <li>Prompt prescribers to review antibiotic treatment (not further specified)</li> <li>Monitor treatment duration: need for continuation (day 3 or/and day 7)<sup>22</sup></li> <li>Prompt review of potential for intravenous to oral switch<sup>17,21</sup></li> <li>Arrange &amp; coordinate follow-up for review of antibiotic treatment<sup>7</sup></li> <li>Prompt review of drug/bug mismatch, time-outs, AB de-escalation<sup>17,21</sup></li> <li>Prompt assessment of suitability of patient for outpatient parenteral antimicrobial therapy (OPAT)<sup>22</sup></li> <li>Prompt discussions on issues concerning antimicrobial therapy at the end of life with patients, carers and other members of the healthcare team as part of planning for end-of-life care<sup>7</sup></li> </ul>
<p><b>Domain 5</b> Patient Communication, education &amp; information</p> 	<p><u>Educating patient and family/caregivers (including discharge information)</u></p> <ul style="list-style-type: none"> <li>Educate patient on appropriate use<sup>18,21</sup></li> <li>Inform patients on antibiotic timing, interaction with food, medication compliance<sup>18,22</sup></li> <li>Educate patients on adverse events<sup>22</sup></li> <li>Educate patients on when to ask for review if concerned<sup>7</sup></li> <li>Give information on which signs and symptoms to share with healthcare provider<sup>21</sup></li> <li>Give information on how to return leftover medication to pharmacy<sup>22</sup></li> </ul> <p><u>Encourage patient and peer professional interactions on antimicrobial prescription and therapy</u><sup>22</sup></p>

Figure 1

## ANTIMICROBIAL TREATMENT PATHWAY- PROPOSED NURSE CONTRIBUTION



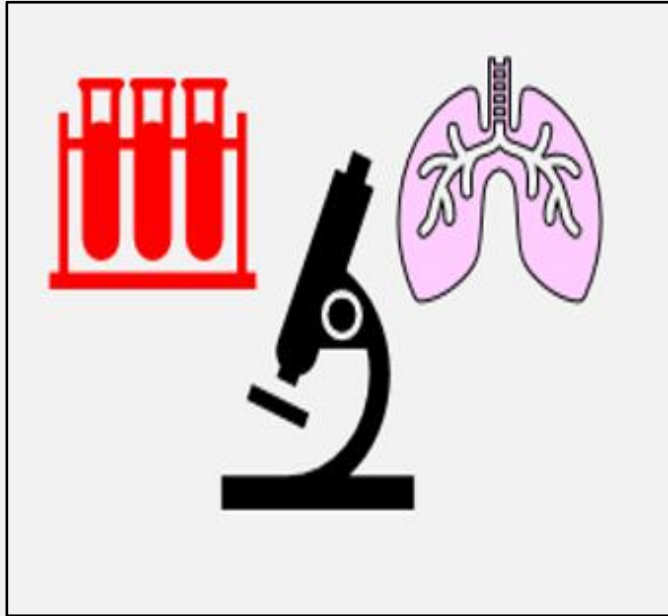


## Nurses:

- Recognize and communicate of signs & symptoms to physician or prescriber
- Help of decision aids, e.g.
  - Neonatal Sepsis Calculator
  - Triage standing orders (e.g. bloodcultures)
  - Decision algorithm (selection of prophylactic antibiotics)

# ANTIBIOTIC PATHWAY-COLLECTION OF SPECIMENS

---



## Nurses:

- Judge whether the patient has symptoms that justify the diagnostic test
- Document signs & symptoms
- Take sample, document it and communicate it
- Document, review & communicate results of tests

# ANTIBIOTIC PATHWAY-ANTIBIOTIC ADMINISTRATION



## Nurses:

- Asses allergies & adverse
- Administer antibiotics (prior medication safety)
- Procurement: “Beg, steal & borrow””
- Initiate conversations with patient & family about AB treatment plan (“near-end of life” setting)
- Select AB as part of pre-procedure checklist (SSI)

Right patient  
Right drug  
Right dosing  
Right timing  
Right route

# ANTIBIOTIC PATHWAY-REVIEW

---



## Nurses:

- Ask for rationale on starting or continuing AB
- Discuss appropriateness AB
- Ask for review of AB (day 3 and 7)
- Remind physicians to adhere to guidelines
- Antimicrobial Stewardship rounds (n=5)

# ANTIBIOTIC PATHWAY-PATIENT EDUCATION

---

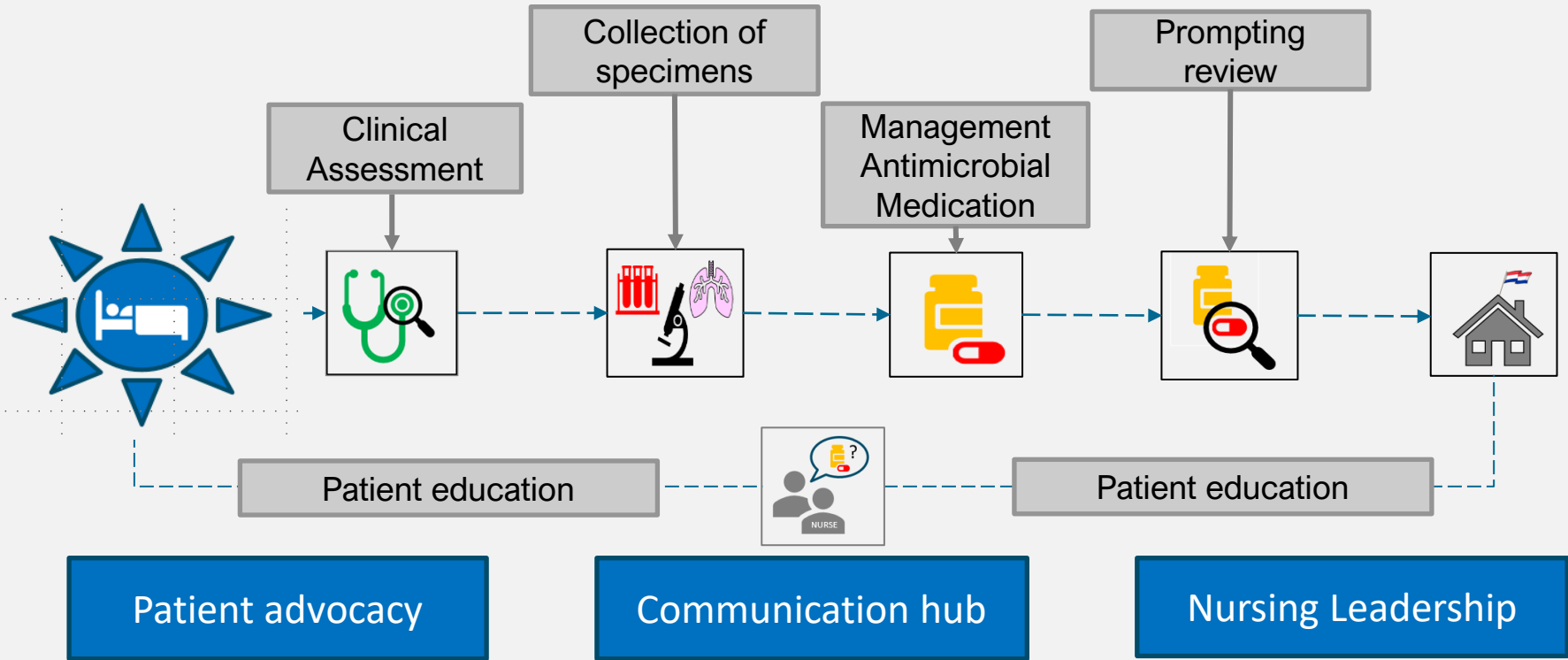


## Nurses:

- Educate & inform patients about AB
  - How to take cultures
  - How to administer AB
  - When to contact prescriber
- Promote patient participation & partnership



# ANTIBIOTIC PATHWAY- NURSE CONTRIBUTION



# Aber wie funktioniert es dann bei uns in den Niederlanden?

---

Welche Wahrnehmungen, Ansichten und Meinungen haben niederländische Pflegefachkräfte über ihre Rolle bei der rationalen Benutzung von Antibiotika?



What are the  
perceptions, views and opinions  
of  
Dutch bedside nurses on their role  
regarding  
appropriate antimicrobial use?

# METHOD: Qualitative exploratory design

## Participants

- Purposeful sampling (variation in participants)
- Invitation through nursing networks

- Bedside nurses (“direct care”)
- Registered nurse (RN/LPN)
- Surgical ward or internal medicine ward (or equivalent of those)
- Min. 28 hrs/week contract
- Academic, non-academic (teaching) and general hospitals

## Datacollection

- Semi-structured interviews, using topic list
- Digital platform (ZOOM)
- AudiorecordingVerbatim transcription

## Analysis

- Inductive thematic analysis (Braun & Clark, 2021) by 2 researchers

## RESULTS-CHARACTERISTICS PARTICIPANTS (n=14)



Gender: Female	13 (92,3%)
Age category: 20-40 years old	9 (64,3%)



### Education:

- Vocational college 2 (14,3%)
- BSc Nursing 10 (71.4%)
- MSc Nursing 2 (14,3%)
- Specialty training 4 (28.6 %)



Nursing experience: 13,2 years (range 2-37)



### Specialty department:

- Surgical ward 7 (50%)
- Internal medicine 6 (42,9%)
- Combination: 1 (7,2%)



### Type of hospital: (n=9)

- Academic 3 (21,4 %)
- Teaching 5 (35.7%)
- General 1 (7,2%)

"this is what we do...."

---

Continuous factor

Alerting prescriber

Prompting review  
e.g. i.v. to oral switch

Critical reflection and  
anticipation

Explanation of treatment

*.....we have a signaling function;  
when are the labs done again,  
what do we do with the  
antibiotics?....*

*...when we see that someone is  
clinically stable, we evaluate with the  
doctor if the antibiotic can be stopped  
or can be switched to oral....*

"this is what we do...."

---

Patient advocacy

*...you are doing it for your patient and you want the best for that patient..... [R2]*

Communication

*...we are clearly communicating to our doctor:  
when can the antibiotics be stopped? Was it  
checked? Should we get some more bloodwork  
done?....*

Leadership

# "this is what we can do...2.0"

---

Critical reflection on  
treatment

*...I think, nursing leadership equals active participation in thinking about the overall direction of care.....*

(Shared) responsibility

*...it is a nursing responsibility to ensure that the care trajectory is smooth. On the other side as a nurse, you cannot take all the responsibility .....*

Patient education

# "this is what can help us....."

---

Awareness

*I think you should start with creating more awareness, this is very important and I don't think that this awareness is present right now...*

Education

- *Checklist during ward rounds*
- *"antibiotic champions"*

Tools

*...some sort of guideline for antibiotic use and the role of nurses. I think that will help to get a more complete overview..*

Clarification of role and responsibilities



## CONCLUSION

---

Nurses feel that they are already contributing in ensuring appropriate antimicrobial use

Nurses envision their future role as an enhanced, elaborated and empowered version of their current daily practice

Clarification of (shared) responsibilities between prescriber and nurses may support further development of nurses' roles

Formal acknowledgement and increased awareness of the role nurses have, will encourage the contribution of the bedside nurse to AMS

# Und jetzt? Tailored approach ? <sup>1</sup>

## EXPLORE

Opportunities for nurse involvement in surgical antimicrobial stewardship strategies: A qualitative study

Courtney Ierano<sup>a,b,\*</sup>, Arjun Rajkhowa<sup>a,b</sup>, Fiona Gotterson<sup>a,b</sup>, Caroline Marshall<sup>a,b,c,d</sup>, Trisha Peel<sup>a,e</sup>, Darshini Ayton<sup>f</sup>, Karin Thursky<sup>a,b,d,g</sup>

JAC Antimicrob Resist  
<https://doi.org/10.1093/jacamr/dlad008>

JAC-  
Antimicrobial  
Resistance

Nurses' perceptions of the potential evolution of their role in antibiotic stewardship in nursing homes: a French qualitative study

Céline Bridey<sup>a\*</sup>, Gaëlle Le Dref<sup>f</sup>, Aurélie Bocquier<sup>g</sup>, Stéphanie Bonny<sup>h</sup>, Céline Pulcini<sup>1,2</sup> and Nathalie Thilly<sup>3,3</sup>

Qualität und Sicherheit in der Gesundheitsversorgung / Quality and Safety in Health Care

Die Rolle der Pflegenden in der pharmazeutischen Versorgung in Deutschland – Eine qualitative Analyse

*The role of nurses in pharmaceutical care in Germany: A qualitative analysis*

Thomas Klatt<sup>a,\*</sup>, Marion Baltes<sup>a,b</sup>, Juliane Friedrichs<sup>a,c</sup>, Gero Langer<sup>a</sup>

<sup>a</sup> Martin-Luther-Universität Halle-Wittenberg, Institut für Gesundheits- und Pflegewissenschaft, Halle (Saale), Deutschland

<sup>b</sup> Uniklinik RWTH Aachen, Aachen, Deutschland

<sup>c</sup> Klinik für Viszerale, Gefäß- und Endokrine Chirurgie, Universitätsklinikum Halle (Saale), Halle (Saale), Deutschland

## EDUCATION

An app a day: Results of pre- and post-surveys of knowledge, attitudes, and practices (KAP) regarding antimicrobial stewardship principles among nurses who utilized a novel learning platform

Laura J. Bobbitt PharmD<sup>1</sup>, Christo Cimino PharmD, BCPS, BCIDP<sup>1</sup>, Kim V. Garvey PhD, MLIS<sup>2</sup>, Leanna S. Craft MSN, RN, SCRNP<sup>3</sup>, Nicole A. Eichenseer MSN, RN<sup>3</sup> and George E. Nelson MD<sup>4</sup>

<sup>1</sup>Department of Pharmaceutical Services, Vanderbilt University Medical Center, Nashville, Tennessee, <sup>2</sup>Department of Anesthesiology, Center for Advanced Mobile Healthcare Learning, Vanderbilt University Medical Center, Nashville, Tennessee, <sup>3</sup>Department of Nursing, Vanderbilt University Medical Center, Nashville, Tennessee and <sup>4</sup>Division of Infectious Diseases, Department of Medicine, Vanderbilt University Medical Center, Nashville, Tennessee

### Original Article

Antibiotic stewardship for nurses: Using e-learning modules to bridge the education gap

Mary T. Catanzaro RN, BSMT, CIC, FAPIC

Quality Initiatives Department, The Hospital and Healthsystem Association of Pennsylvania, Harrisburg, Pennsylvania

## MOTIVATE

J Antimicrob Chemother  
<https://doi.org/10.1093/jac/dkad239>

IV to oral switch: a novel viewpoint

Abi Jenkins\*

Department of Pharmacy, University Hospitals Birmingham, Mindlesohm Way, Birmingham, B15 2WB, UK

<sup>1</sup> Flottorp, S.A., Oxman, A.D., Krause, J. et al. A checklist for identifying determinants of practice: A systematic review and synthesis of frameworks and taxonomies of factors that prevent or enable improvements in healthcare professional practice. Implementation Sci 8, 35 (2013). <https://doi.org/10.1186/1748-5908-8-35>

z.B.....

The Joint Commission Journal on Quality and Patient Safety 2020; 46:650-655

IMPROVEMENT BRIEF

## A Pilot Study to Evaluate the Impact of a Nurse-Driven Urine Culture Diagnostic Stewardship Intervention on Urine Cultures in the Acute Care Setting

Valeria Fabre, MD; Ashley Pleiss, RN; Eili Klein, PhD; Zoe Demko, BA; Alejandra Salinas, BS; George Jones, BS; Avinash Gadala, BPharm, MS; Lauri A. Hicks, DO; Melinda M. Neubauer, PharmD, MPH; Arjun Srinivasan, MD; Sara E. Cosgrove, MD, MS

American Journal of Infection Control 48 (2020) 1415-1421

Contents lists available at ScienceDirect



ELSEVIER

American Journal of Infection Control

journal homepage: [www.ajicjournal.org](http://www.ajicjournal.org)



Major Article

## Implementation of a nurse-driven antibiotic engagement tool in 3 hospitals

Elizabeth Monsees PhD, MBA, RN, CIC, FAPIC<sup>a,\*</sup>, Brian Lee PhD, MPH<sup>b</sup>, Anne Wirtz PharmD, BCPPS<sup>c</sup>, Jennifer Goldman MD, MSCR<sup>d</sup>



Am J Perinatol 2022;39:861-868.

## Charge Nurses Taking Charge, Challenging the Culture of Culture-Negative Sepsis, and Preventing Central-Line Infections to Reduce NICU Antibiotic Usage

Samarth Shukla, MD<sup>1</sup> Josef Cortez, MD<sup>1</sup> Bill Renfro, PharmD<sup>2</sup> Kartikeya Makker, MD<sup>3</sup>  
Colleen Timmons, DO<sup>1</sup> P. Sireesha Nandula, MD<sup>1</sup> Rita Hazboun, MD<sup>4</sup> Rima Dababneh, MD<sup>1</sup>  
Cristina Hoopes, MSN, RNC-NIC<sup>5</sup> Jenny VanRavestein, MSN, RN, NE-BC<sup>5</sup> Yvette McCarter, PhD<sup>6</sup>  
Marilyn Middlebrooks, MSN, RN, CCRN-K, CIC<sup>7</sup> Ma Ingyinn, MD<sup>1</sup> Ana Alvarez, MD<sup>8</sup> Mark L. Hudak, MD<sup>1</sup>

The Joint Commission Journal on Quality and Patient Safety 2019; 45:600-605

## A Multidisciplinary Approach to Incorporate Bedside Nurses into Antimicrobial Stewardship and Infection Prevention

David R. Ha, PharmD, BCIDP; Mary Bette Forte, MSN-Ed, RN; Rita D. Olans, DNP, CPNP-PC, APRN-BC; Kelsey OYang, MPH; Richard N. Olans, MD, FIDSA; Daniel P. Gluckstein, MD; Ravina Kullar, PharmD, MPH, FIDSA; Mamta Desai, BS, CLS, MBA, CIC; Nora Catipon, RN, MSN, GNP-BC; Vickie Ancheta, RN; Donna Lira, RN, CIC; Yesenia Khattak, CIC; Jessica Legge, RN; Kim B. Nguyen, PharmD; Sarah Chan, PharmD; John Mourani, MD; James A. McKinnell, MD

## Concise Communication

## Impact of an inpatient nurse-initiated penicillin allergy delabeling questionnaire

Hilary Bediako BA<sup>1,a</sup>, Lauren Dutcher MD, MSCE<sup>2,3,a</sup>, Aditi Rao PhD, RN<sup>4,5</sup>, Kristen Sigafus MSN, RN<sup>4</sup>, Christina Harker BSN, RN<sup>4</sup>, Keith W. Hamilton MD<sup>2</sup> and Olajumoke Fadugba MD<sup>6</sup>

# Take home message



If you want to go fast, go alone

**If you want to go far, go together**

With permission of Waginger Ruderverein

---

# Questions?




[rita.bos@radboudumc.nl](mailto:rita.bos@radboudumc.nl)



## 2nd International Nursing Summit on Antimicrobial Stewardship

Event by Enrique Castro-Sánchez

 Wed, Nov 22, 2023, 2:00 PM - 6:00 PM (your local time) [Add to calendar](#) ▼

 Online