



Incidence and measures for control and prevention of MRSA transmission in Belgian hospitals, 1992-2002



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Some history ...

1991: Control measures before national guidelines:

“1st national MRSA survey in Belgian hospitals¹” (n=109)

1993: Publication of the Belgian national guidelines

1994: Control measures after national guidelines:

“2nd national MRSA survey in Belgian Hospitals²” (n=89)

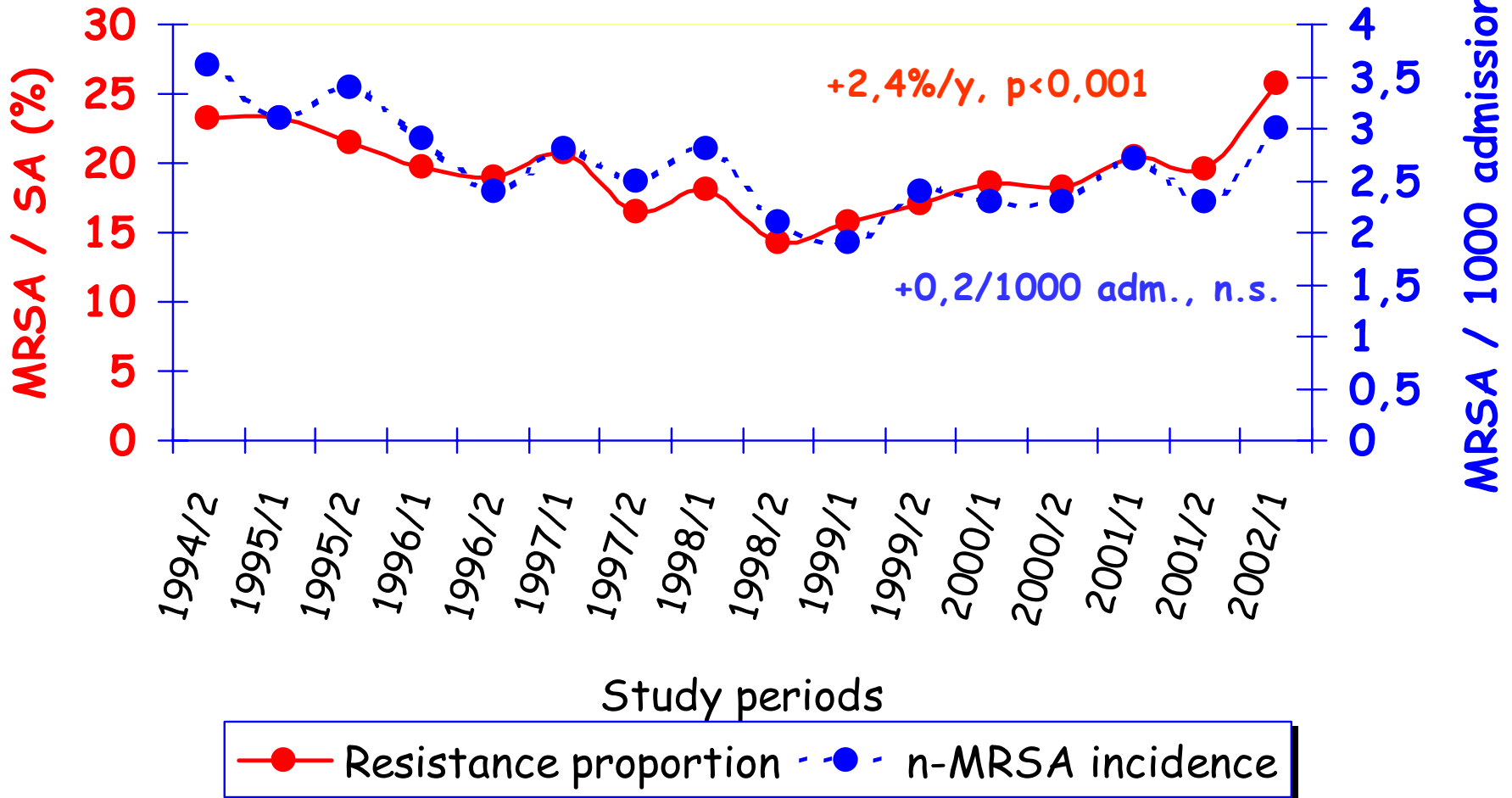
1- Struelens MJ, Mertens R et al. National Survey of Methicillin-Resistant *Staphylococcus aureus* in Belgian Hospitals: Detection Methods, Prevalence trends and Infection Control Measures, *Eur J Clin Microbiol Infect Dis*, January 1994, p 56-63.

2 -Struelens MJ, Ronveaux O, Jans B, et al. Methicillin-Resistant *Staphylococcus aureus* Epidemiology and Control in Belgian Hospitals, 1991 to 1995, *Infect Control Hosp Epidemiol* 1996; 17: 503-508.

Evolution of MRSA proportion and incidence since 1994

N= 132

N= 124



... control measures 9 years later ?

2002: 3 th national MRSA survey in Belgian Hospitals (n = 91 hospital sites)

- Isolation measures
- Precautions: hand hygiene, gloves, masks, gowns, room disinfection,...
- Detection of MRSA carriage
- Decolonization of MRSA
- Surveillance of MRSA in the hospital

Isolation measures



Isolation measures

ISOLATION IN PRIVATE ROOM

	n.	1991 <i>(n = 109)</i>	1994 <i>(n = 89)</i>	2002 <i>(n = 91)</i>
Yes	85/91	50	93	93,4%
Always	68/85			80 %
In some cases	14/85			16,5%
In some units	3/85			3,5%

COHORTING IF NO PRIVATE ROOM AVAILABLE

Yes	63/91	-	-	69,2%
Always	56/63			88,9%
In some cases	5/63			7,9%
Other answer	2/63			3,2%



Precautions: hand hygiene

Precautions: hand hygiene

STANDARD HAND WASHING (SOAP) AFTER MRSA PATIENT CONTACT

	n.	1991	1994	2002
Yes	41/91	28	8	45,1%
Always	22/41			53,7%
In some cases	19/41			46,3%

HAND DISINFECTION (ANTISEPTIC)

Yes	89/91	43	87	97,8%
Always	81/89			91 %
In some cases	7/89			7,9%
Other answer	1/89			1,1%

A white latex glove is shown, oriented vertically with the fingers pointing upwards. The glove is slightly translucent and has a textured surface. It is positioned behind the text.

**Contact precautions:
gloves, masks, gowns**

Contact precautions: gloves, masks, gowns

Wearing gloves for MRSA patient care

	n.	1991	1994	2002
Always	77/91	49	62	84,6%
In some cases/ units	14/91	-	30	15,4%

Masks

Always	27/88	24	18	30,7%
In some cases	60/88	-	66	68,2%
Never	1/88	-	-	1,1%

Gowns

Always	41/89	38	45	46,1%
In some cases/ units	48/89	-	46	53,9%



Daily room cleaning/ disinfection

Daily room cleaning/ disinfection

STANDARD CLEANING OF MRSA PATIENT ROOM

	n.	1991	1994	2002
Yes	22/91	23	9	24,2%

REINFORCED CLEANING / DISINFECTION

Yes	66/91	39	85	72,5%
More frequently	4/91	-	-	4,4%
More exhaustive	30/91	-	-	33 %
With special disinfectants	62/91	-	-	68,1%



Detection of MRSA carriers

Detection of MRSA carriers – hospitalised patients

SCREENING OF MRSA CARRIERS – HOSPITALISED PATIENTS

	n.	%	always	Some cases/units
At admission	44/91	48,4%	9,1%	90,9%
In epidemic situations	49/91	53,8%	89,9%	10,2%
Transfers from other hospitals	50/91	54,9%	72%	28%
Transfers from other units	20/91	22 %	5%	95%
Transfers from nursing homes	54/91	59,3%	72,2%	27,8%

Detection of MRSA carriers – hospitalised patients

SCREENING LOCALISATIONS

	n.	%
One of the following localisations	77/91	84,6%
Nose	77/77	100%
Wounds	50/77	64,9%
Perineum	39/77	50,6%
Other localisations	25/77	32,5%
Throat	17/77	22,1%

Detection of MRSA carriers – hospital staff

SCREENING OF MRSA CARRIERS – HOSPITAL STAFF

	n.	%
On recruitment	2/91	2,2%
Occupational health examination	3/91	3,3%
In epidemic situations	76/91	83,5%
<i>Always</i>	64/76	84,2%
<i>In some cases/ units</i>	12/76	15,8%



Decolonization of MRSA carriers

Decolonization of MRSA carriers – hospitalised patients

DECONTAMINATION OF PATIENT CARRIERS

	n.	1991	1994	2002
Nasal Mupirocine ointment	84/89		86 %	94,4%
Body wash with antiseptic soap	82/89			92,1
<i>BOTH: nasal ointment + antiseptic soap</i>	78/89	24 %	74 %	87,6%
Cutaneous Mupirocine ointment	21/89			23,6%
General antibiotic treatment	11/89		25 %	12,4%
Local antibiotic treatment	6/89			6,7%

Decolonization of MRSA carriers – hospital staff

DECONTAMINATION OF HOSPITAL STAFF

	n.	1991	1994	2002
Nasal Mupirocine ointment	69/74		93 %	93,2%
Body wash with antiseptic soap	44/74			59,4%
<i>BOTH: nasal ointment + antiseptic soap</i>	45/74	18 %	47 %	60,8%
Cutaneous Mupirocine ointment	8/74			10,8%
General antibiotic treatment	5/74			6,8%
Local antibiotic treatment	3/74			4%



**MRSA Surveillance
and outbreak investigations**

MRSA Surveillance in the hospital

MRSA SURVEILLANCE IN THE HOSPITAL

	n.	1991	1994	2002
≥ 1 of the following indicators	82/91	42 %	81 %	90,1%
% MRSA/ total n° S.a.	72/82			87,8%
n° new MRSA+ patients/ n° admissions	55/82			67,1%
n° new cases of infections or colonisation/ n° admissions	45/82			54,8%
n° imported and local acquired MRSA cases/ n° admissions	34/82			41,5%

Investigation methods for outbreaks

METHODS FOR INVESTIGATION OF MRSA OUTBREAKS

	n.	2002
≥ 1 of the following methods	52/91	57,1%
Descriptive case study	41/52	78,8%
Strain typing	30/52	57,7%
Screening from the reservoir	26/52	50 %
Risk factor study	9/52	17,3%

Summary

ISOLATION	1991	1994	2002
Admission in private room	50	93	93,4
Cohorting	-	-	69,2
Special unit	5	2	0
USE GLOVES			
All contacts	49	62	84,6
Some contacts	-	30	15,4
USE GOWNS			
All contacts	38	45	46,1
Some contacts	-	46	53,9
USE OF MASKS			
All contacts	24	18	30,7
Some contacts	-	66	68,2

Summary

HAND HYGIENE	1991	1994	2002
Handwashing with soap	28	8	45,1
Use antiseptic solutions	43	87	97,8
ROOM CLEANING/DISINFECTION			
Standard cleaning	23	9	24,2
Reinforced cleaning	39	85	72,5
SCREENING OF CARRIERS			
Patients	31	68	*
Staff	37	59	*
DECONTAMINATION OF CARRIERS			
Patients	24	74	87,6*
Staff	18	47	60,8*

Conclusions

- Good compliance of '93 guidelines
- Application less generalised, more case dependent ... but quid feasibility ???
- Reported measures \Leftrightarrow compliance ???