

IS CLINICAL AUDIT A USEFUL METHOD TO EVALUATE IMPLEMENTATION STRATEGIES OF A GUIDELINE ON BLOOD USE IN THE PROVINCE OF REGGIO EMILIA ?

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BACKGROUND

Clinical audit should be used to monitor and evaluate the development, dissemination and implementation of best-practice guidelines. This will allow operators to implement guideline recommendations, assess their impact on the process and, where possible, objectively measure the outcomes of care.

- *If teams undertaking the audit are appropriately supported and able to use a variety of techniques, they will be able to identify potential barriers and develop practical implementation plans

from **SIGN: “A guideline developers’ handbook”, Section 10 “Audit and review”**

*from **NICE:”Principles of Best Practice in Clinical Audit”**

OUR PRINCIPAL OBJECTIVES

Utilise the results of a clinical audit to evaluate the clinical and organisational effects of a guideline on blood transfusion in the Province of Reggio Emilia

Utilise the results of clinical audit to identify potential barriers to implementation of the guideline and, if necessary, develop new interventions

HOW TO PROMOTE IMPLEMENTATION?

- Evidence-based medicine requires evidence-based implementation strategies.
- Implementing guidelines is not a simple affair; passive implementation is largely ineffective.
- Implementation of a guideline is a local responsibility and many local initiatives have already been successful in overcoming barriers to implementation. In our Province there are 5 district associated hospitals (USL) and a 887-bed hospital for secondary and tertiary care (ASMN). Each hospital was given free reign to choose its own implementation strategy.

DISSEMINATING THE USE of GUIDELINES AND CLINICAL AUDIT IN THE HEALTHCARE NETWORK

District of Guastalla



District of Correggio



District of Montecchio



District of Reggio Emilia



Arcispedale S. Maria Nuova
(ASMN)



District of Scandiano



District of Castelnuovo Monti



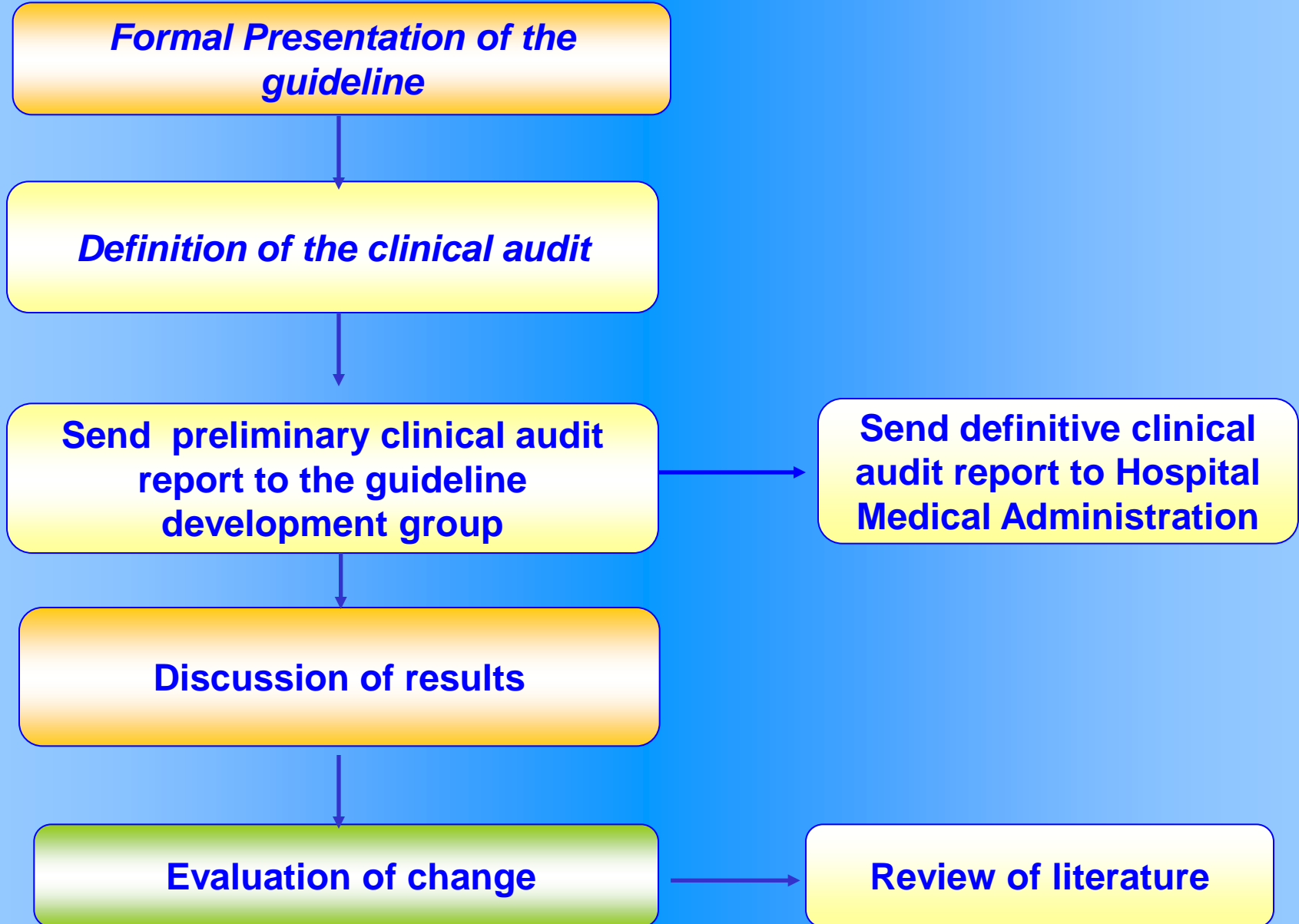
DISSEMINATING THE USE OF GUIDELINES and CLINICAL AUDIT

Personnel	ASMN *	USL§
Medical	366	456
Non medical degree	33	160
Nursing	1005	1414
Technicians and Maintenance	455	661
Healthcare Technicians	193	113
Rehabilitation	69	262
Administration	195	385
Engineering	7	9
Total	2323	3460

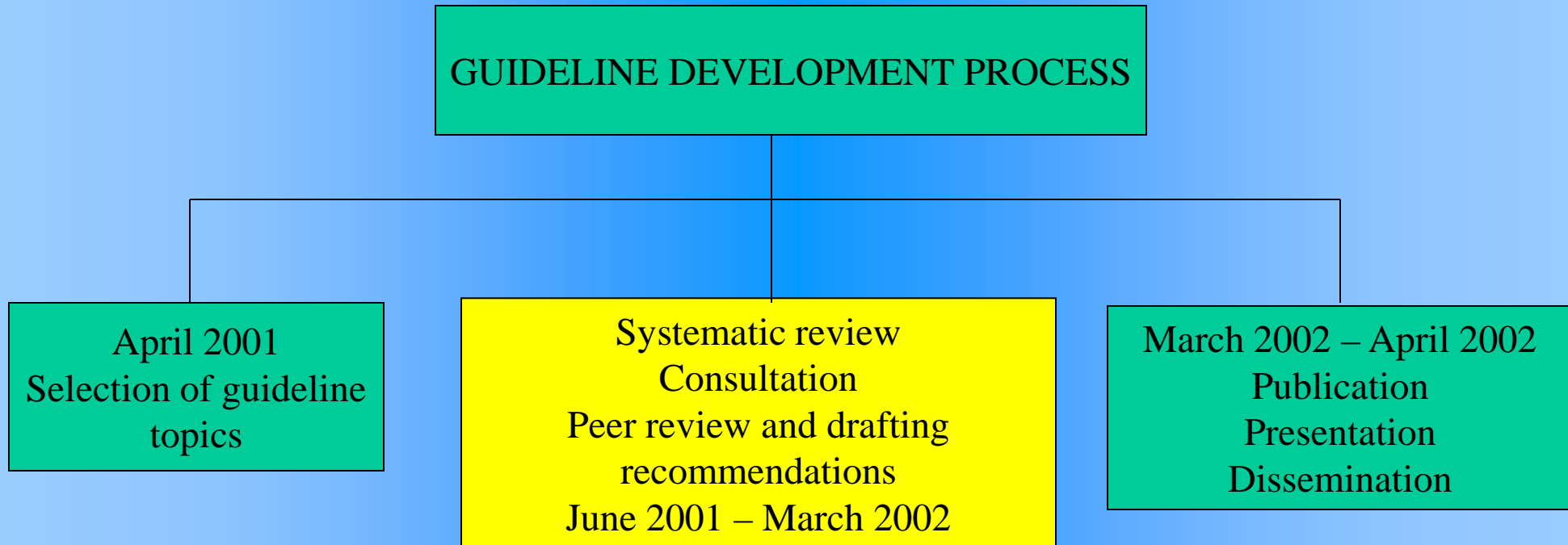
* Data valid as of 31/12/2002

§ Data valid as of 31/12/2000

“APPROPRIATENESS OF BLOOD TRANSFUSION AND RISK MANAGEMENT” GUIDELINE DEVELOPMENT PROCESS



TIMELINE FOR GUIDELINE DEVELOPMENT



INTERVENTIONS TO PROMOTE BEHAVIOURAL CHANGE AMONG HEALTH PROFESSIONALS

- Consistently effective interventions
- Interventions of variable effectiveness
- Interventions that have little or no effect

CONSISTENTLY EFFECTIVE INTERVENTIONS

- **Educational outreach visits**

- **Reminders**

Stickers or on-line prompts

- **Multifaceted interventions**

A combination that includes two or more of the following: audit and feedback, reminders, local consensus processes, and marketing

- **Interactive educational meetings**

Participation of healthcare providers in workshops that include discussion and practice

INTERVENTIONS OF VARIABLE EFFECTIVENESS

- **Audit and feedback**

Summaries of clinical performance

- **Use of local opinion leaders**

Practitioners identified by their colleagues as influential

- **Local consensus processes**

Inclusion of participating practitioners in discussions to ensure that they agree that the chosen clinical problem is important and the approach to managing the problem is appropriate

- **Patient mediated interventions**

Any intervention aimed at changing the performance of healthcare providers for which specific information was sought from or given to patients

INTERVENTIONS THAT HAVE LITTLE OR NO EFFECT

- **Educational materials**

Distribution of recommendations for clinical care, including clinical practice guidelines, audiovisual materials and publications on-line

- **Educational meetings**

Conferences, lectures

Each implementation strategy is effective under certain circumstances and a multifaceted approach is most likely to achieve change. The approach should take potential local barriers into account. It is important to build in support and incentives and to consider the resources needed for successful implementation.

WHAT IMPLEMENTATION STRATEGY DID WE USE ?

Remember that...

Implementation of a guideline is a local responsibility
In our Province each hospital was free to choose its own
implementation strategy

IMPLEMENTATION STRATEGIES in ASMN

from March 2002 to April 2002

- 1 Local consensus conference
- 4 interactive educational workshops (Surgical post-Op. Department, Medical Department, Critical Care Department, Surgery Department) organised by the Guideline Chairman
- 5 educational outreach visits to the 3 clinical units in which we started an audit cycle
- 1 educational outreach visit with staff delivering blood to wards
- 3 educational outreach visits with blood bank staff
- 4 educational outreach visits with nursing staff
- Audit cycle planning
- Visual reminders (stickers with instructions/warnings)
- Written materias
- Intranet on-line database

IMPLEMENTATION STRATEGIES in USL

from March 2002 to June 2002

- 1 Local consensus conference
- 5 interactive educational workshops organised by local opinion leaders in the clinical units (n° 5) in which we started an audit cycle; these meetings were extended to the other clinical units in each district hospital
- 3 educational outreach visits with blood bank staff
- Audit cycle planning
- Visual reminders (stickers with instructions/warnings)
- Written material

ATTENDANCE AT THE EDUCATIONAL MEETINGS IN ASMN

- 118 doctors/ 302 **(39%)**
- 212 nurses / 833 **(25,5%)**
- 18 staff delivering blood/ 18 **(100%)**
- 10 blood bank technicians/ 12 **(83%)**

ATTENDANCE AT THE EDUCATIONAL MEETINGS IN USL

- 70 doctors/450 (15%)
- 150 nurses /1400 (11%)
- 10 blood bank technicians/12 (83%)

PLANNING THE AUDIT CYCLE

Comparative Audit is carried out in two parts - retrospective and prospective.

Clinical Guidelines were introduced before beginning the prospective audit -T(0)

Retrospective Audit – from April to September 2001

T(0)

Prospective Audit – from April to September 2002

T(-1)

Introduction of guideline –
8 April 2002

T(+1)

COMPARATIVE AUDIT

“APPROPRIATENESS OF BLOOD TRANSFUSION AND RISK MANAGEMENT”

Comparative Audit was used to compare the transfusion rates for standard red cell use among hospitals, departments or clinical units. Information on transfusion rates was collected over a defined period. Overall results were anonymous; the mean cross-match/transfusion rates were sent to all participants without reference to any particular unit, dep't., ward, ecc.

Comparative audit, based simply on the number of units of red cells used, was sufficient to give us an indication as to patient mix, and quality of the surgical techniques and transfusional methods employed.

“...comparative audit is a powerful tool for detecting clinically significant variation in practice, and for persuading practitioners to adjust their practice” (Wallis J.P, McClelland et al 2002, Transfusion Medicine).

HOW DID WE AUDIT RED CELL USE ?

- We reviewed orders for blood from April to September 2001 (retrospective audit) and compared them with orders recorded from April to September 2002 (prospective audit)
- We evaluated the cross-match to transfusion ratio that reflects appropriateness of blood requests. **(A ratio below 1.5 was used as the standard indicating that less than 33% of cross-matched blood was not used)**
- We systematically evaluated request forms from 8 Clinical Units:
 - Emergency Department - ASMN,*
 - Clinical Unit of Internal Medicine 1 - ASMN,*
 - Clinical Unit of Orthopedic - ASMN,*
 - Clinical Unit of Surgery - Scandiano,*
 - Clinical Unit of Internal Medicine - Correggio,*
 - Clinical Unit of Surgery - Guastalla,*
 - Clinical Unit of Orthopedic - Montecchio,*
 - Clinical Unit of Internal Medicine – Castelnuovo Monti*

HOW DID WE AUDIT RED CELL USE ?

Retrospective data collection provides a baseline of care provision, it may not be as useful as working with current data

- Current (prospective) data collection gives staff immediate feedback on performance and can serve as positive reinforcement to improve and/or maintain best practice

HOW DID WE AUDIT RED CELL USE ?

- Random sample size was of **1280 blood requests** for the retrospective audit and **1091** for the prospective audit
- We used tables of random numbers to select blood requests
- Data collection and statistic data processing was carried out using EPI-INFO software

MEETINGS FOR THE DISSEMINATION/EXCHANGE OF RESULTS

- Meetings, held in a classroom setting, were aimed at promoting the exchange of experiences relating to problems that arose in managing the work process
- Participants were expected to propose at least one or more solutions to the problems discussed as well as changes that could be made in the management of blood and blood transfusion requests
- Two plenary sessions were held at ASMN and one meeting in the district of Montecchio.
- At least one meeting is scheduled in each of the remaining USL districts

Uso appropriato delle emotrasfusioni e gestione del rischio

Audit clinico

Esci

Inserimento dati

Analisi Score

Mostra Protocollo

Analisi Urgenze

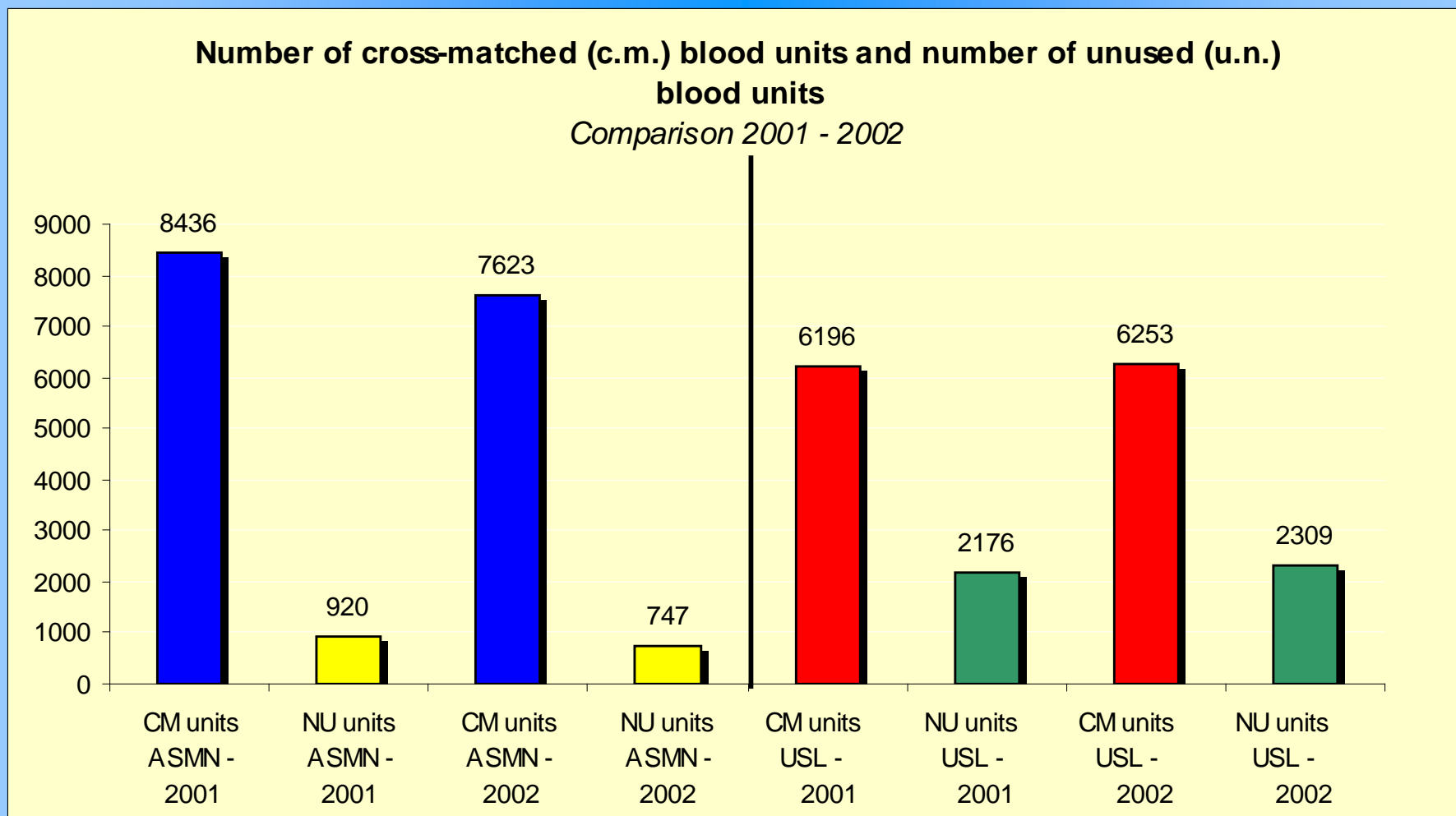
Mostra Griglia

Analisi Quantitativa

Analisi Descrittiva

Analisi Appropriatezza

Comparison between ASMN and USL



The different approaches to blood transfusion practice employed by ASMN and USL were statistically relevant ($\chi^2 = 21,7$ $p << 0,05$).

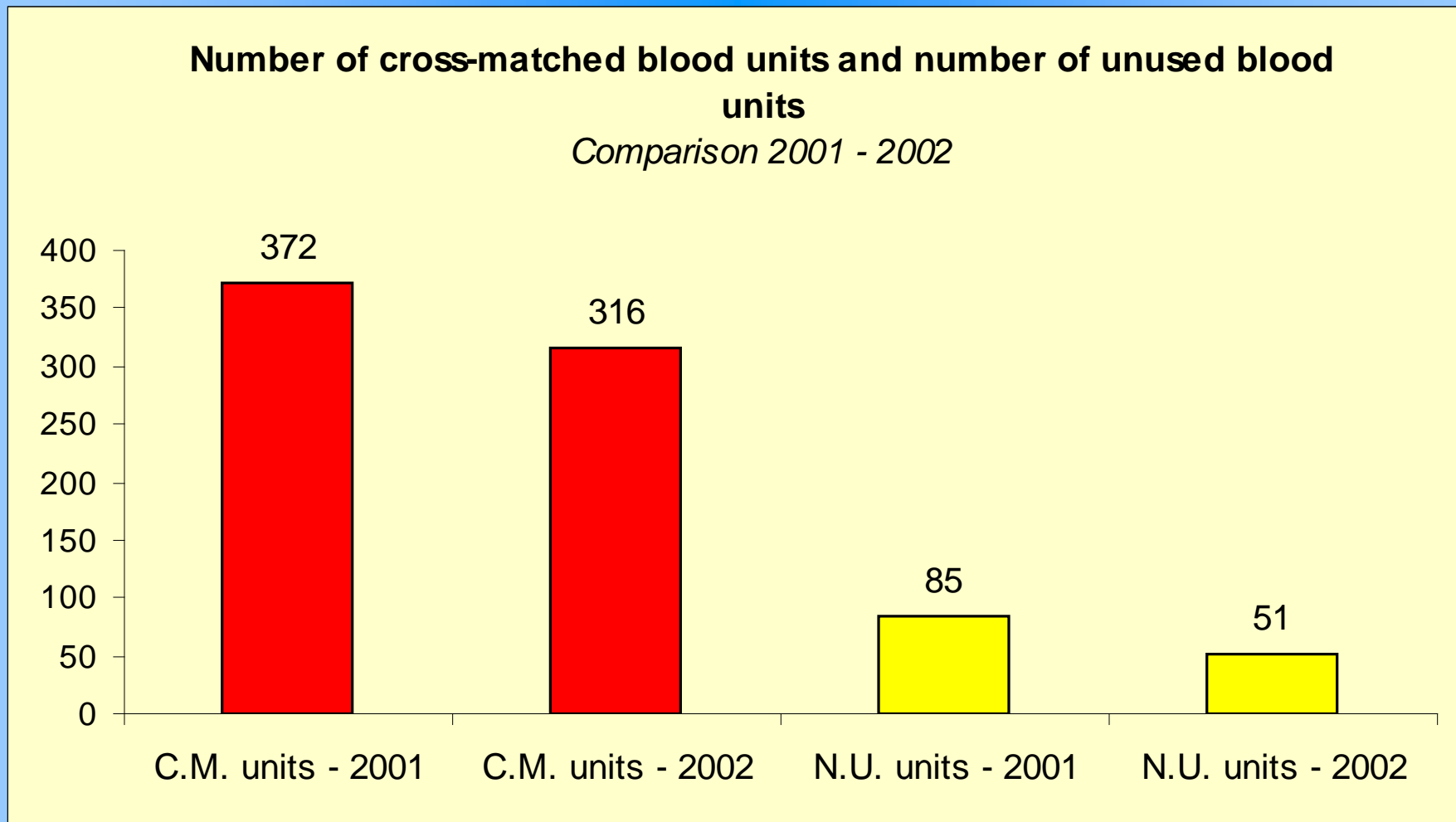
The reduction of c.m. and u.n. was statistically relevant for the hospital of ASMN only ($\chi^2 = 5,2$ $p = 0,02$)

Percentage variation of blood requested and unused blood

	Percentage variation <u>Blood requested</u> (comparison 2001- 2002)	Percentage variation <u>Unused blood</u> (comparison 2001- 2002)
ASMN	-10%	-19%
USL	0,1%	+6%

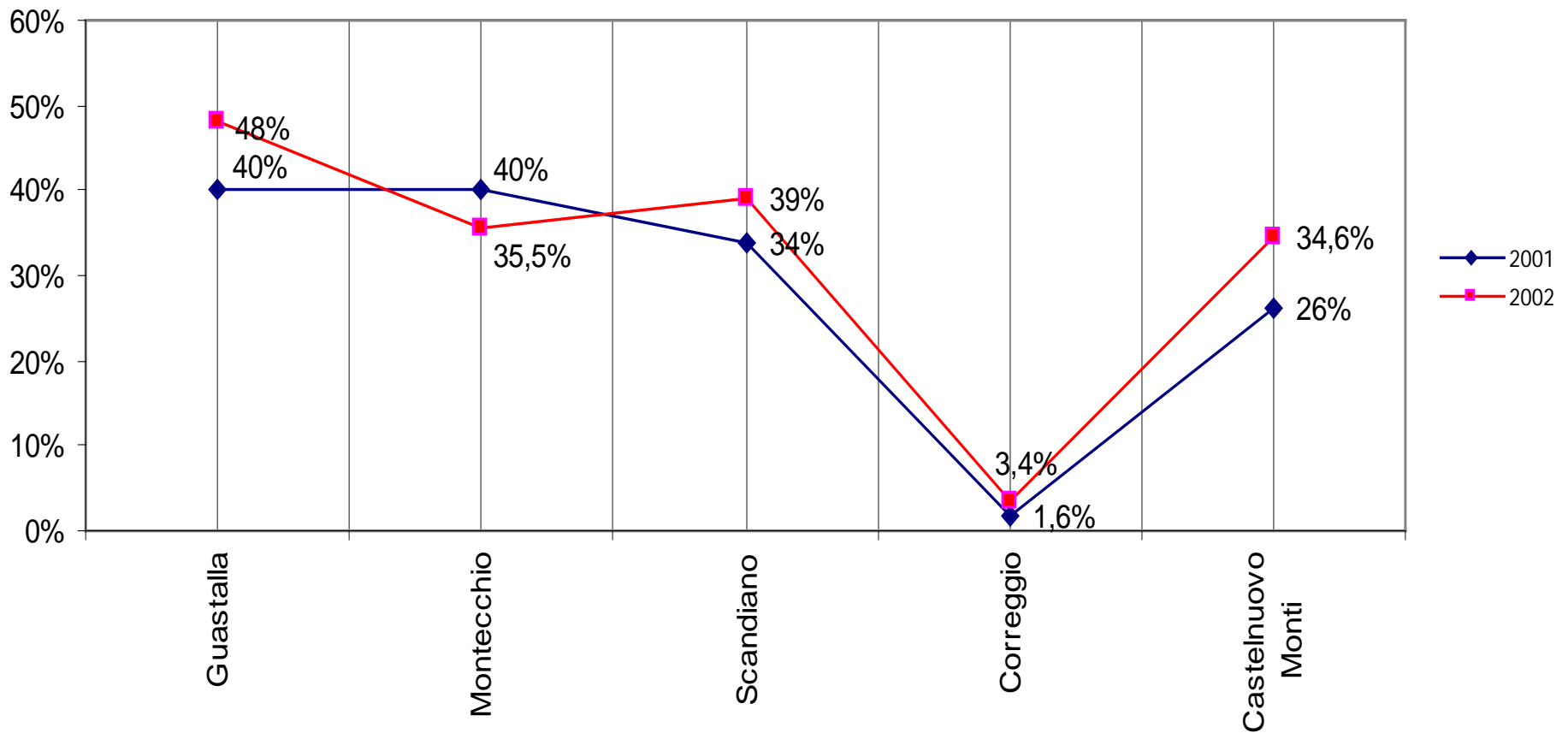
	Comparison 2001- 2002	
	Year 2001	Year 2002
ASMN	11%	10%
USL	35%	37%

An example: Emergency Department - ASMN



- -15% for cross-matched blood units
- - 40% for units of unused blood

Percentage of requested blood that was not used - USL Comparison 2001-2002



CONCLUSIONS

Clinical audit is usually intended as a quality process implemented to improve patient care and health outcomes through a systematic review of care assessed using explicit criteria

We also believe that discussion of the results of the audit can help the guideline development group to identify **potential barriers to implementation and to develop practical implementation plans**

CONCLUSIONS

Variation in impact of our guideline on Reggio Emilia's Hospitals is probably due to the differences in :

- Structure (location of the hospitals)
- Organisation (lack of facilities)
- Individual (attitude of staff toward learning and change)

Different implementation strategies employed by ASMN and the District Associated Hospitals could also enhance this difference.

Difficulties encountered in USL District Hospitals:

1. Low number of educational meetings and lack of participation on the part of doctors , nurses and hospital medical administration staff
2. Local consensus conferences were held but had little or no educational impact (need for smaller, targetted meetings)
3. Lack of facilities made available to the team working on guideline implementation
4. Local opinion leaders were involved but were not part of the team in charge of guideline development

CONCLUSIONS AND FUTURE DEVELOPMENTS

- This is the first Provincial Audit in Reggio Emilia adhering to a specific guideline on the **APPROPRIATENESS OF BLOOD TRANSFUSION AND RISK MANAGEMENT**
- The results are encouraging in ASMN but not in USL
- We believe that this is in part due to the different implementation strategies employed by ASMN and the District Associated Hospitals
- In October 2003 the guideline development group will meet the Hospital Medical Administrations of ASMN and USL to discuss results and encourage support of the guideline implementation process