



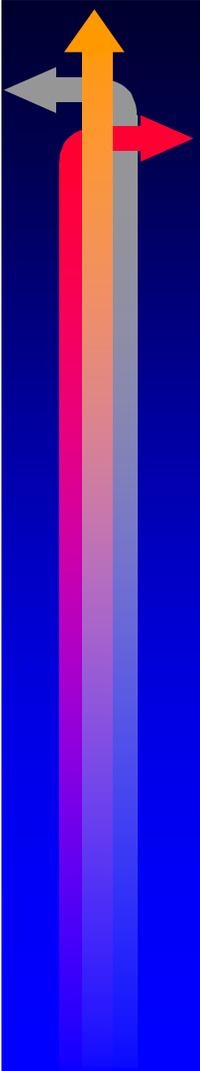
# What is Evidence for Quality of Oral Health Care?

Asbjørn Jokstad, D.D.S., Ph.D.

Faculty of Dentistry, University of Toronto

Ontario, Canada

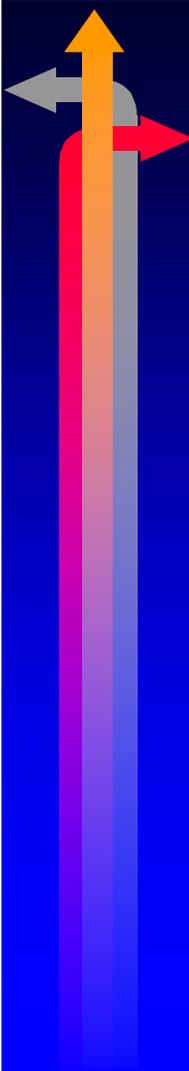
<http://individual.utoronto.ca/jokstad>



## What is Evidence for Quality?

- Obscure words

- What is *Evidence*?

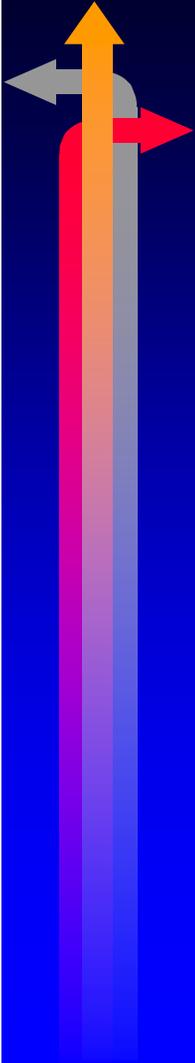


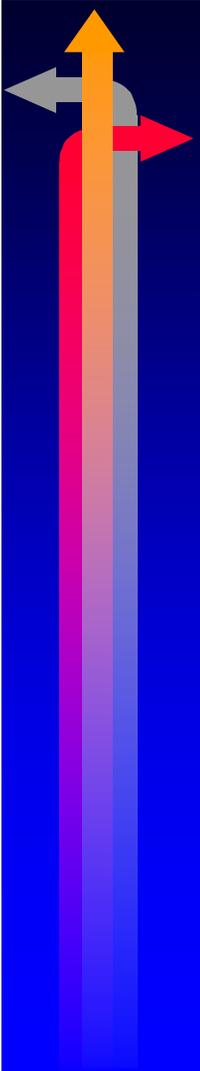
## What is *Evidence*?

Evidence = Documentation

# Evidence = Documentation

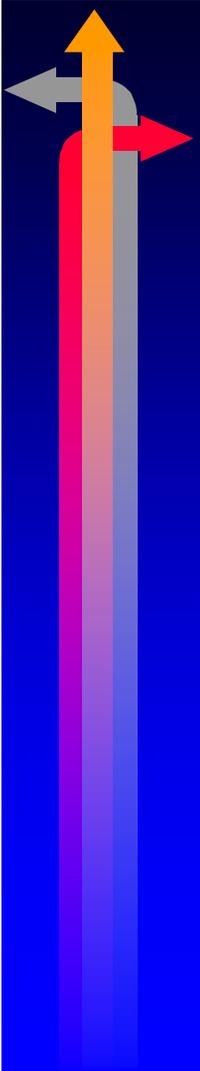
1. Scientific papers





# Evidence = Documentation

1. Scientific papers
2. Doctor's recording of past therapy =  
Patient Chart
  - ✓ Text
    - ✓ Descriptors of interventions
    - ✓ Correspondence
  - ✓ Photographs (clinical & radiological)
  - ✓ Models



# Obscure words

## ❖ What is evidence?

- ❖ Scientific papers
- ❖ Patient Charts

## ❖ What is Quality?

- ❖ Quality of a product
  - ❖ “Technical quality (of a restoration)”
- ❖ Quality of a service (to the public)
  - ❖ Quality of Teaching
  - ❖ Quality of Dental Care
- ❖ “Bone quality and quantity (for an implant)”

# ↑ VELKOMMEN

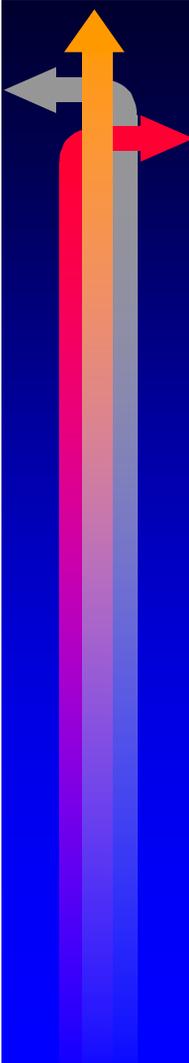
## til Colgate og Tandlægeforeningens SYMPOSIUM 2008 Æstetik, kvalitet og etik

Æstetik, kvalitet og etik er en vigtig emnekreds, der berører de fleste af vore handlinger i odontologisk praksis. I emnerne indgår mange spørgsmål, der ikke kan svares entydigt på. Den hastige udvikling og betydningen indebærer imidlertid, at der ind imellem er behov for at diskutere, hvor vi står som tandlæger, og tage stilling til en række grundlæggende spørgsmål. Eksempler på disse spørgsmål er:

Hvem skaber udviklingen, der indebærer forøget fokus på æstetik: Er det patienterne, medierne eller os selv?  
Hvad forventer vore patienter egentlig af os? Hvordan går det med kvaliteten, når æstetikken tager over? Hvad er egentlig et smukt ansigt, og hvilken rolle spiller tænderne? Hvilke midler har vi til at opnå et godt æstetisk resultat, og hvor langt kan vi gå? Går etikken ud, når æstetikken går ind? Hvor står vi juridisk, når en patient ønsker en behandling, der er på tværs af biologien? Har det øvrige sundhedsvæsen også problemer med disse temaer? Er der mange klagesager om æstetik og kvalitet? Hvor går udviklingen hen: Ender vi med plastik og diamanter over det hele?



Service  
or  
Product?



## Quality of a Product

The quality of a product in industrial production systems is measured against some objective standard, which includes appearance, performance characteristics, durability, serviceability, and other physical characteristics; timeliness of delivery; cost; appropriateness of documentation and supporting materials; and so on.

Merriam-Webster Collegiate Dictionary Online. <http://www.m-w.com/>

# Quality of a scientific paper

STUDY: Methodological quality

- ✓ Internal validity
- ✓ External validity

ARTICLE: Reporting quality

## Quality Assessment of Randomized Controlled Trials of Oral Implants

Marco Esposito, DDS, PhD<sup>1</sup>/Paul Coulthard, BDS, MFGDP, MDS, FDSRCS, PhD<sup>2</sup>/  
Helen V. Worthington, BSc, MSc, PhD, FIS<sup>3</sup>/Asbjørn Jokstad, DDS, PhD<sup>4</sup>

The aim of this study was to assess the **quality** of randomized controlled trials (RCTs) concerned with the effectiveness of oral implants and to create a trial register. A multilayered search strategy was used to identify all RCTs published by the end of 1999 in any language. The Cochrane Oral Health Group specialist register, PubMed, and personal libraries were searched. Seventy-four RCTs were identified. Forty-three articles, not presenting the same patient material, were independently assessed by 3 researchers using a specially designed form. A statistician assessed all trials for the appropriateness of statistics. The **quality** of each study was assessed on 7 items, including 3 key domains. Randomization and concealment allocation procedures were not described in 30 articles (70%). Reasons for withdrawals were not given in 10 reports (23%). No attempt at blinding was reported in 31 studies (72%). The **quality** of RCTs of oral implants is generally poor and needs to be improved. (INT J ORAL MAXILLO-FAC IMPLANTS 2001;16:783-792)

**Key words:** dental implants, randomized controlled trial, registries, research design, review literature

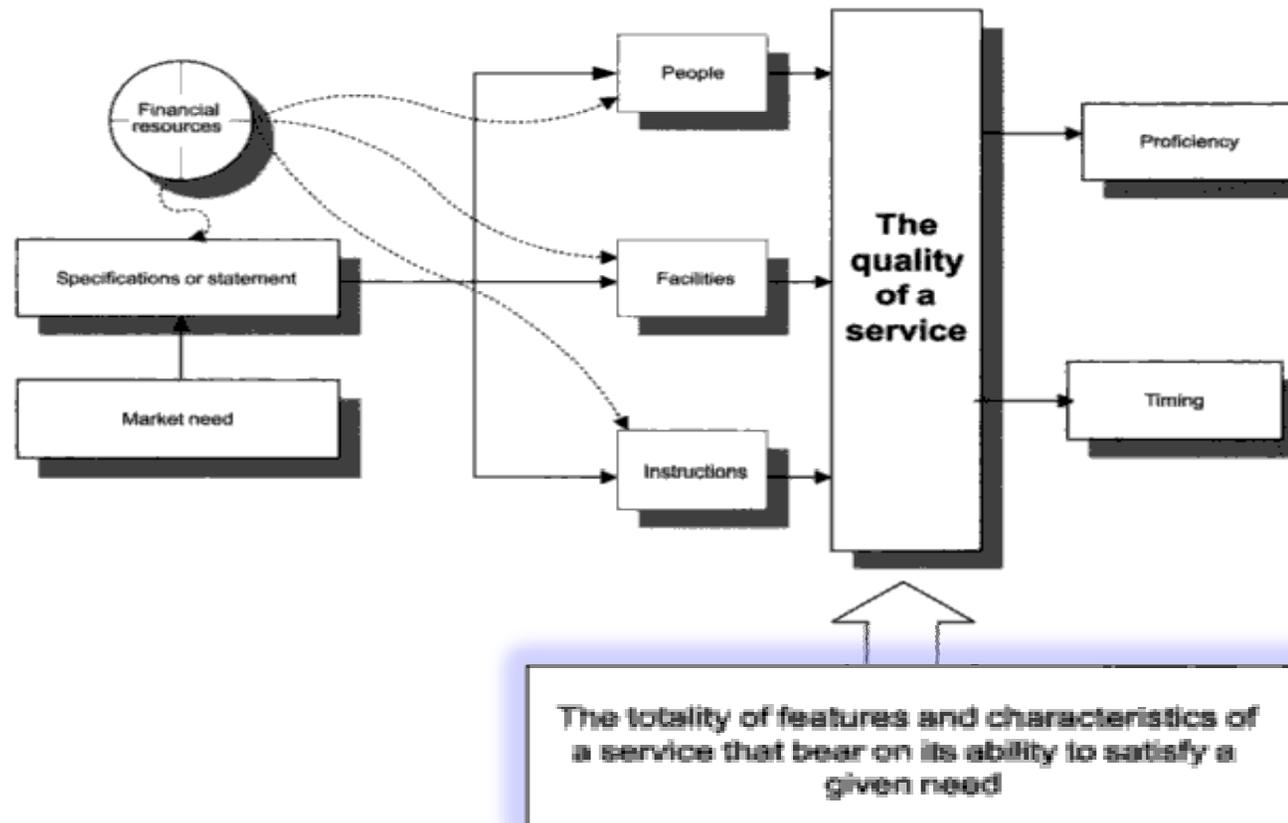
## The Reporting of Randomized Controlled Trials in Prosthodontics

Asbjørn Jokstad, DDS, Dr Odont/PhD<sup>a</sup>  
Marco Esposito, DDS, PhD<sup>b</sup>  
Paul Coulthard, BDS, MFGDP, MDS,  
FDSRCS, PhD<sup>c</sup>  
Helen V. Worthington, BSc, MSc, PhD, CStat<sup>d</sup>

**Purpose:** This article evaluates the reporting of randomized controlled trials (RCT) in prosthodontics, excluding endosseous implant-based prosthetics. **Materials and Methods:** Reports of RCTs published to the end of 2000 in any language were identified using a multilayered search strategy. The Cochrane Oral Health Group specialized register, Medline, and personal libraries were searched. Three researchers appraised the articles independently using guidelines following Jadad and CONSORT, complemented with an evaluation of the appropriateness of the reported statistics. **Results:** Ninety-two reports of RCTs were evaluated, covering a wide spectrum of study hypotheses, topics, and issues within various prosthodontic domains. The interrater agreements on appraisal criteria were relatively high, with median kappa values ranging between 0.65 and 0.79. The reports were in general of poor **methodologic quality**. Randomization and procedures for concealment allocation were not described in 70% of the articles. The methods used to generate the random allocation sequence were not mentioned in 82%. The methods used to implement the random allocation sequence, clarifying whether it was concealed until all interventions were assigned, was not mentioned in 94%. Reporting who generated allocation sequence, who enrolled patients, and who assigned participants to groups was not reported in 7%. Reasons for withdrawals were not given in 23% of the reports. No attempt at blinding was reported in 72%. Statistical analysis was not described in 6% of the papers, while these analyses were assessed as appropriate for 75%, unclear in 12%, and inappropriate in 7%. **Conclusion:** Few RCTs in prosthodontics are reported in accordance with contemporary guidelines for adequate reporting of trials. *Int J Prosthodont* 2002;15:230-242.

# Quality of a Service / Production

56 ISO 9001:2000 AUDIT PROCEDURES



- Quality Management (QM)
- Quality Management System (QMS)
- Quality System (QS)
- Quality Assurance (QA)
- Quality Control (QC)
- (Total) Quality Control (TQC)
- (Statistical) Quality Control (SQC)
- Quality Audit
- Quality Costs
- Cost of Poor Quality (COPQ)

# What is Quality?

A product or a service is measured against (an objective) Standard

“Poor Practices”

OR

“Poor Care”

OR

“Poor Performance”

OR

“Poor Services”

OR

“Poor Resource use”

etc.

“High quality?”

“Good quality?”

“Excellent quality?”



“Quality”

“Best Practices”

OR

“Best Care”

OR

“Best Performance”

OR

“Best Services”

OR

“Best Resource use”

etc.

Synonym:

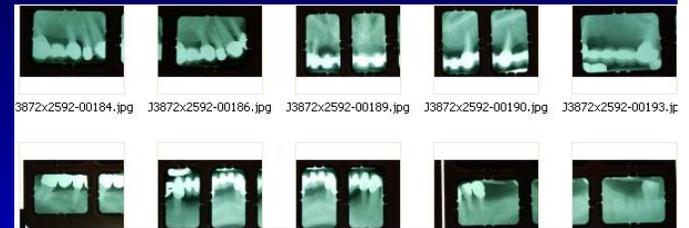
“Standard of Care”

# Quality v.z. Appropriateness?



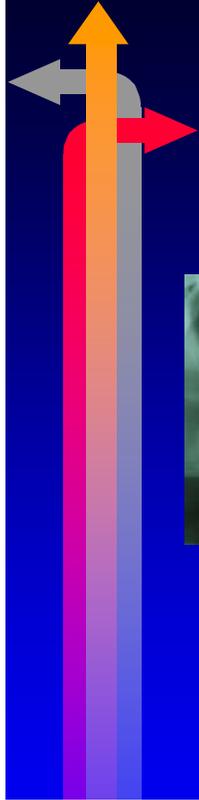
Panoramic

Caries →  
Periodontitis →  
Implant planning  
← ? →



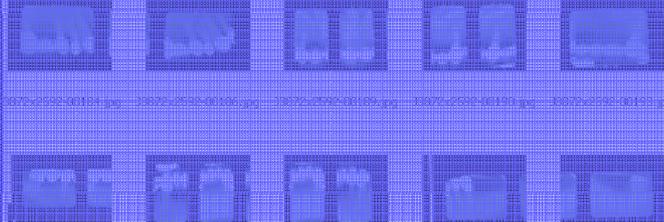
Periapical

# Quality v.z. Appropriateness?



Panoramic?

Caries →  
Periodontitis →  
Implant planning  
← ? →



Periapical

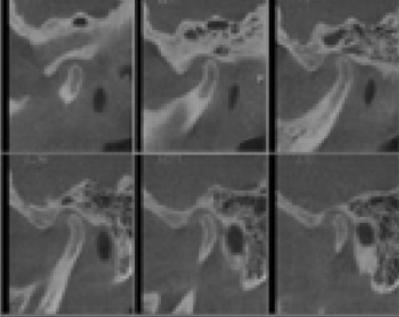
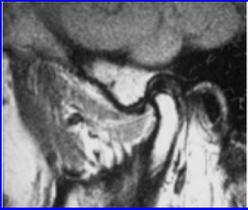
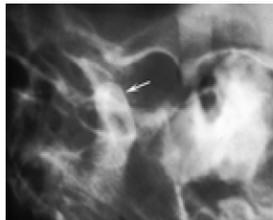
TMJ Pain  
← ? →

Computed tomography?

Plane film?

Arthrography?

Magnetic resonance?



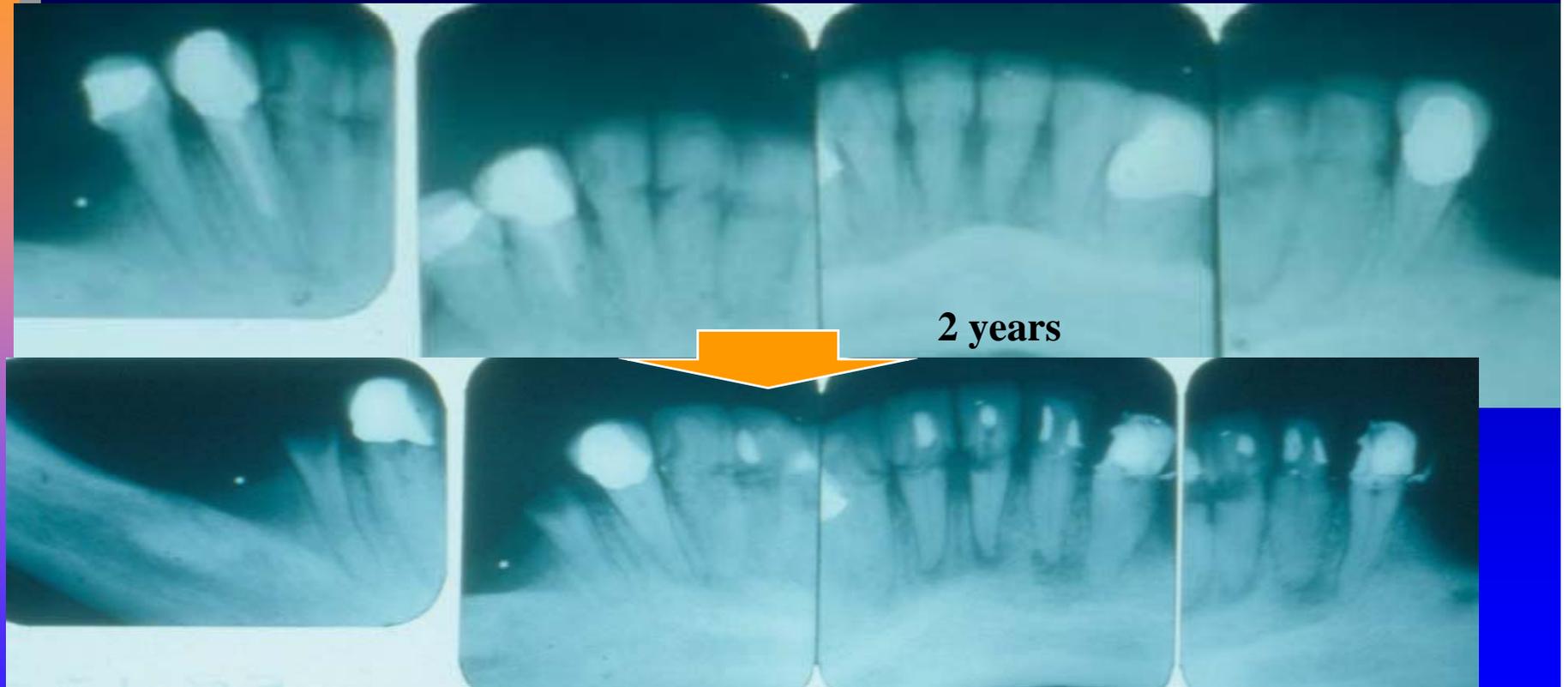
## Quality vz most Relevant Outcome?



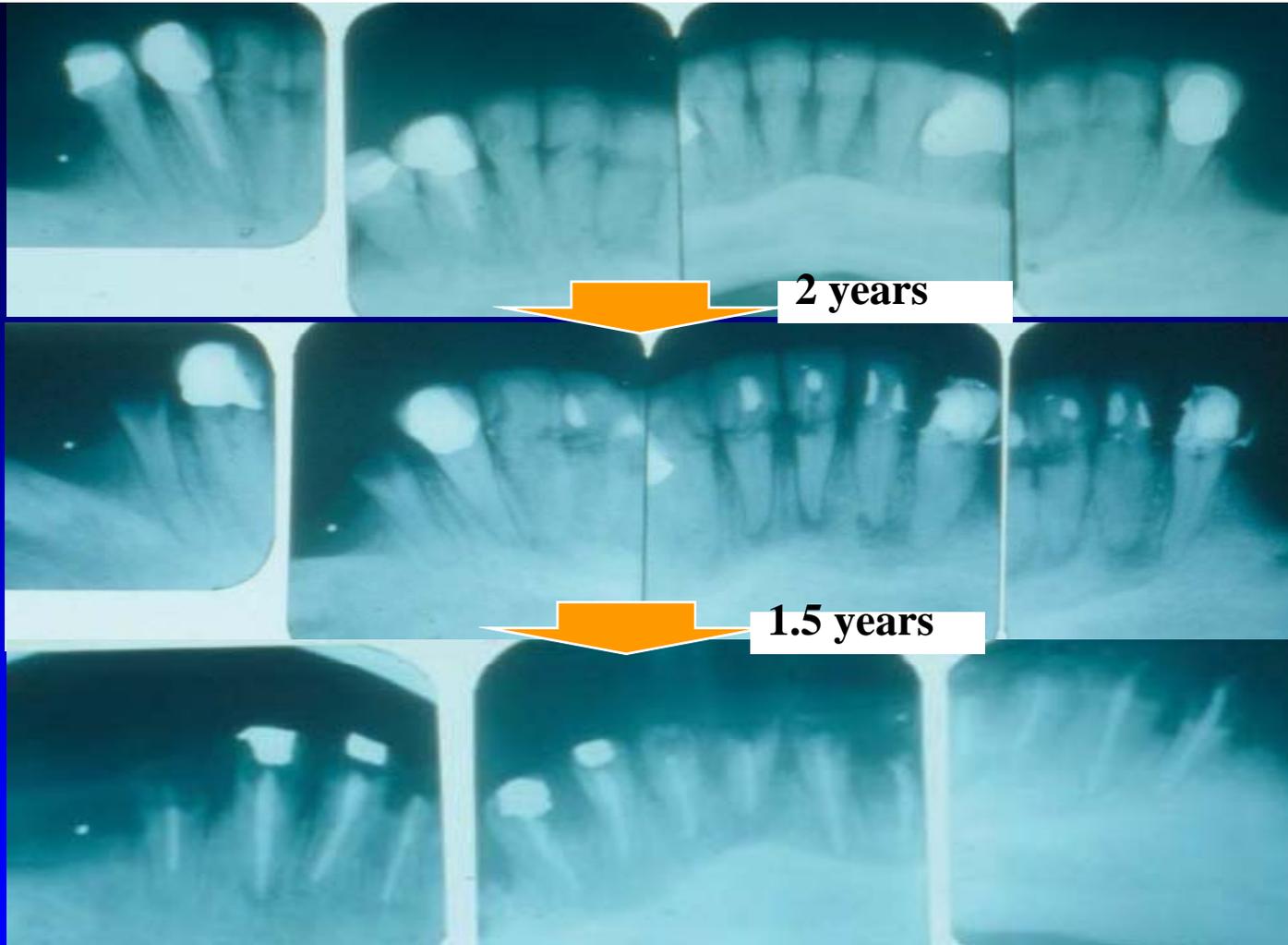
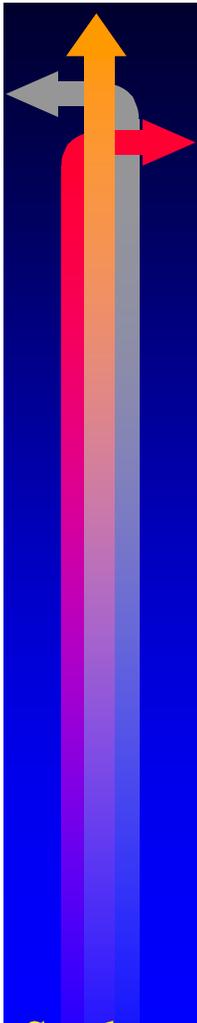
- A. Conservative only, no prosthodontics?
- B. Cast partial denture?
- C. Crowns and partial denture?
- D. Fixed bridge?
- E. Implant retained prosthesis?

Steele et al. Changing patterns and the need for quality. Br Dent J. 2002; 192:144-8.

## Quality v<sub>z</sub> most Relevant Outcome



Steele et al. Changing patterns and the need for quality. Br Dent J. 2002; 192:144-8.



...quality oral care?

Steele et al. Changing patterns and the need for quality. Br Dent J. 2002; 192:144-8.

...quality oral care?

2 years

1.5 years

1 year

Steele et al. Changing patterns and the need for quality. Br Dent J. 2002; 192:144-8.



2 years



1.5 years



1 year



< 1 year



...quality oral care?

Steele et al. Changing patterns and the need for quality. Br Dent J. 2002; 192:144-8.

# Quality of Oral Health Care?

“Poor Practices”

OR

“Poor Care”

OR

“Poor Performance”

OR

“Poor Services”

OR

“Poor Resource use”

“Best Practices”

OR

“Best Care”

OR

“Best Performance”

OR

“Best Services”

OR

“Best Resource use”

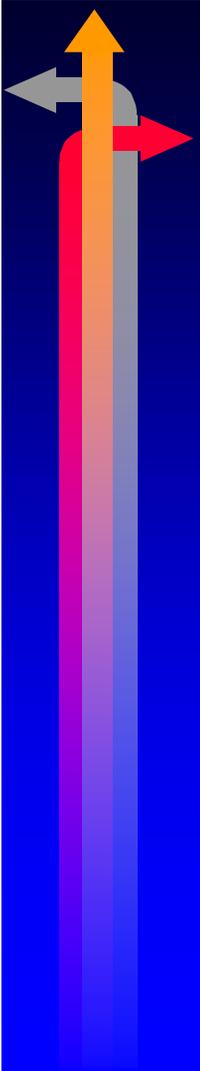
## Performance indicators

\* Safety risk minimized : Adherence to good infection control routines, radiation exposure minimization, environmental load, etc.)

1. Patient satisfaction?

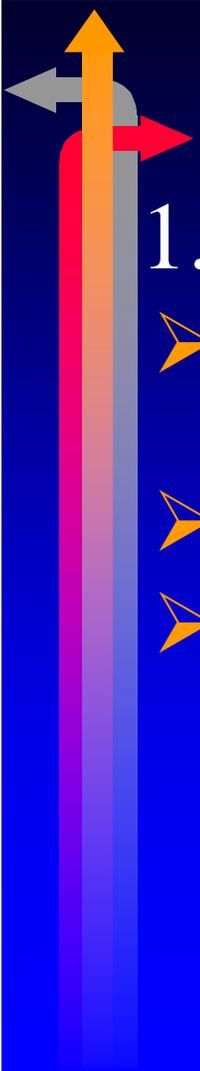
2. Record keeping (incl. laboratory prescriptions & casts and models, etc.)

3. Objective measures: Adverse effects /events incidence (e.g., patient complaint)



## (Evidence of) Quality of Oral Care?

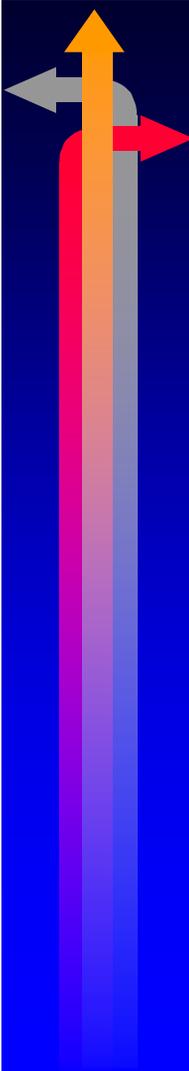
1. Patient opinion / satisfaction?
2. Patient chart?
3. Objective measures?



# Quality = Patient Satisfaction?

## 1. Patient opinions /-testimonials

- Very complex theory field
  - Expectations v<sub>z.</sub> Satisfaction
- Economic incentives to patients (e.g. Youtube)
- Formal complaints usually caused by poor (quality of) communication abilities
  - One formal complaint/yr can dominate professional self-esteem regardless of the other ~1698 satisfied patients.



# Quality of Patient Chart

1. Patient opinions /-testimonials

## 2. Quality of Patient Chart

- Readability
- Completeness of contents
  - Updating (general health status , drug use, etc.)
  - Choice of Lege Artis interventions
  - Photographs, clinical and radiological + models, casts & impressions, etc. (diagnostic value)
  - Correspondence (specialists, technicians)
  - (Mis-)use of tests: Saliva, EMG, Bp, (validity, results, applicability)

# Quality of Patient Chart

Poor

Excellent

Vehkalahti et al.  
1992, Finland

x

Rasmusson et al.  
1994, Sverige

x

Platt et al.  
1995, UK

x

Martin et al.  
1997, UK

x

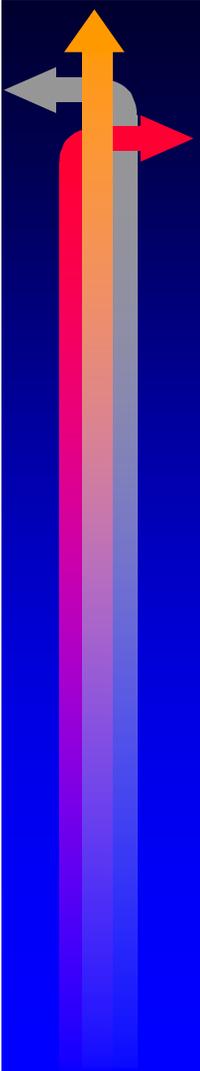
Helminen et al.  
1998, Finland

x

Morgan et al.  
2001, UK

x

**HOWEVER, Focus is mainly on readability & completeness of +/-contents**



# (Evidence of) Quality of Oral Care?

1. Patient opinions /-testimonials

2. Quality of Patient Chart

## 3. Objective measures:

- Success of past therapy
  - e.g. quality and/or survival of restorations
- State of the oral health post-operatively
  - Reflection of diagnostic precision (Caries, revision, TMD...
- Incidence of adverse effects / events (includes formal complaint)
  - Percentage of patients without further treatment needs?
  - Percentage of patients without further oral diseases?



# Quality of Restorative Care

International Dental Journal (2001) 51, 117-158

## Quality of dental restorations FDI Commission Project 2-95\*

Asbjorn Jokstad  
Oslo, Norway

Stephen Bayne  
Chapel Hill, USA

Uwe Blunck  
Berlin, Germany

Martin Tyas  
Melbourne, Australia

Nairn Wilson  
Manchester, UK

Int Dent J 2001; 51: 117-58.

Crit Rev Oral Biol Med 1998; 9:464-79.

← Product or  
Service?  
↓

### DETERMINANTS OF QUALITY IN OPERATIVE DENTISTRY

**K.-J.M. Söderholm**

Department of Dental Biomaterials, College of Dentistry, Gainesville, Florida 32610-0446

**M.J. Tyas**

School of Dental Science, University of Melbourne, Melbourne 3000, Australia

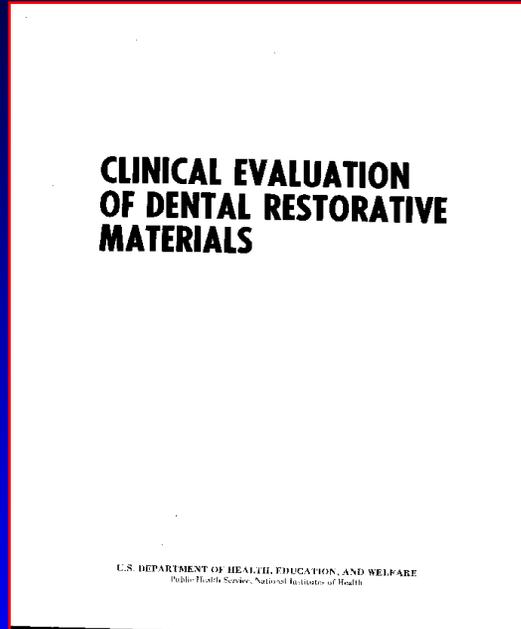
**A. Jokstad**

Faculty of Dentistry, University of Oslo, N-0317 Oslo, Norway

**ABSTRACT:** The definition of quality in operative dentistry has often, at least in part, been related to how well a cut preparation compares with an ideal preparation. The ideal preparation follows well-defined design principles. These design principles have their roots in empirical dentistry and scientific evaluations, the latter often being conducted *in vitro*. Because of the complexity of following these design principles practically, a large portion of dental education consists of perfecting cavity preparations. By focusing on how to cut these cavity preparations as closely as possible to the ideal preparation, dentists with high psycho-motor skills have been able to provide the public with restorative procedures of high standards over the years. However, because of the tendency of relating quality in operative dentistry to the ideal preparation, we found it justifiable to review the literature dealing with the cavity design principles of the Class II amalgam preparation. What triggered this review was a request from the International Dental Federation (FDI) to start a process leading to a scientifically based quality definition of dental restorations, a definition that determines how different factors, including cavity design principles, affect the longevity of both tooth and restoration. From our review, we conclude that patient response and restoration performance over time, rather than how closely a cavity preparation compares with the ideal preparation, will be of more significance in determining the longevity of a Class II amalgam restoration.

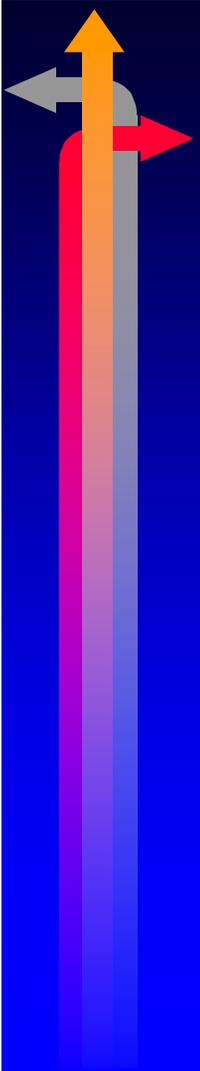
**Key words.** Dental restoration quality, cavity preparation, longevity, mechanical testing, cavity design principles, caries prophylactic, Class II amalgams.

# Quality of Restorative Care



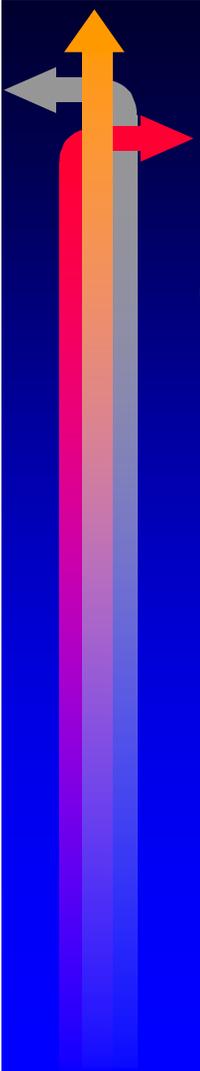
← Product  
or  
Service?

USPHS (or “Ryge”) Evaluation system:  
Scoring criteria used to describe the technical  
excellence of restorations.



## Quality versus technical excellence

The concept of quality of dental restorations should also include temporal and patient satisfaction aspects, as well as economic and biologic cost-benefit aspects, which are not addressed in most evaluation systems.



## Quality of dental restorations

The risk of jeopardising the integrity of remaining dental and oral tissues and the extent to which the form, function and properties of the tooth is imitated to the patient's satisfaction and maintained over time.

**FDI Statement, Paris 2000.**



## Guidelines for the Assessment of Clinical Quality and Professional Performance

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California Dental Association  
P.O. Box 13749  
Sacramento, California 95853

Fifth Edition

### Introduction

Terminology

General Guidelines

Rating System for Quality Evaluation

Quality Evaluation Criteria and Abbreviations

Rules for Examination and Rating

Analysis of Quality-Evaluation Data

### History and Clinical Examination

General Guidelines

<http://www.cda.org>

# (Evidence of) Quality of Dentists



Dentists' skills and abilities to:

1. Prevent all forms of oral diseases?
2. Diagnose all forms of oral diseases?
3. Recommend and offer optimal diagnostic tests and interventions for correct indications?
4. Communicate sufficiently to empower patients to understand and chose amongst (sometimes complex) alternative interventions?
5. Execute different interventions technically correct?
6. Meet their patients' objective and subjective needs?
7. Implement new interventions that have been scientifically validated into daily practice?

<http://individual.utoronto.ca/jokstad/qualityrefs.pdf>



Med hilsen fra  
Toronto, Canada



Takk  
for deres  
oppmerksomhet

<http://individual.utoronto.ca/jokstad>