Overdiagnosis and overtreatment: Definitions and problems for health services

Carlo Saitto
RME Health Authority - Rome

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Scientific research on overtreatment and/or overdiagnosis
Pub-Med studies 1970-2013

<table>
<thead>
<tr>
<th>Cumulated years</th>
<th>Overtreatment</th>
<th>Overdiagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cumulated studies</td>
<td>Studies per 5 ys interval</td>
</tr>
<tr>
<td>Last 5 ys</td>
<td>831</td>
<td>831</td>
</tr>
<tr>
<td>Last 10 yrs</td>
<td>1173</td>
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</tr>
<tr>
<td>Last 15 yrs</td>
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<tr>
<td>Last 20 yrs</td>
<td>1647</td>
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<tr>
<td>Last 25 yrs</td>
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<td>127</td>
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<tr>
<td>&gt;25 yrs</td>
<td>1915</td>
<td>141</td>
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</tbody>
</table>
Scientific research on overtreatment and/or overdiagnosis

N° of Pub-Med studies per yr

- Overtreatment
- Overdiagnosis
The most recent study on overdiagnosis (in pubmed)

- Essay
- Overdiagnosis: when good intentions meet vested interests—an essay by Iona Heath
- *BMJ* 2013; 347 doi: http://dx.doi.org/10.1136/bmj.f6361 (Published 25 October 2013) Cite this as: *BMJ* 2013;347:f6361
The most recent study on overtreatment (in pubmed)

- **Expert Rev Hematol.** 2013 Oct 30. [Epub ahead of print]
- The risk of CNS involvement in aggressive lymphomas in the rituximab era.
- **Benevolo G, Chiappella A, Vitolo U.**
- Hematology, Città della Salute e della Scienza Hospital, Corso Bramante 88 10126, Torino, Italy
But what are we talking about when we talk of overtreatment/overdiagnosis?
**MERRIAM WEBSTER**

*Overdiagnosis:* the diagnosis of a condition or disease more often than it is actually present

*Over-treatment:* too much or too great/so as to be better or beyond

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**COLLINS**

*Overtreatment:* the act or instance of giving too much medical treatment
Overdiagnosis is the diagnosis of "disease" that will never cause symptoms or death during a patient's lifetime. Overdiagnosis is a side effect of testing for early forms of disease which may turn people into patients unnecessarily and may lead to treatments that do no good and perhaps do harm.

Unnecessary health care, commonly called overutilization or Overtreatment, refers to medical services that are provided with a higher volume or cost than is appropriate.
Overtreatment: a tentative definition

Overtreatment refers to the administration of whatever medical service or intervention which is not effective according to the available scientific evidences or to the widest professional consensus, when scientific evidences are still lacking,

OR

the health risks of which result higher than the expected advantages or higher than those considered as acceptable according to the available scientific evidences or to the widest professional consensus, when scientific evidences are still lacking
Overdiagnosis: a tentative definition

Overdiagnosis implies the identification as a “disease” of whatever anomaly, lesion, or individual biological feature, about which scientific evidences are not available or the widest professional consensus was not attained, when scientific evidences are still lacking, to confirm that:

- The observed anomaly constitutes an actual health damage
- The observed anomaly represents an impending or future relevant health risk
- The observed anomaly is liable to effective medical intervention
What are we talking about when we talk of overtreatment/overdiagnosis

<table>
<thead>
<tr>
<th>Over diagnosis</th>
<th>possibly appropriate</th>
<th>definitely appropriate</th>
<th>possibly appropriate</th>
<th>Under diagnosis</th>
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</thead>
<tbody>
<tr>
<td>Over treatment</td>
<td>red</td>
<td>green</td>
<td>green</td>
<td>red</td>
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<tr>
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<td>green</td>
<td>green</td>
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<td>red</td>
</tr>
<tr>
<td>Under treatment</td>
<td>red</td>
<td>green</td>
<td>green</td>
<td>red</td>
</tr>
</tbody>
</table>

- Red: Definitely appropriate
- Green: Possibly appropriate
- White: Not appropriate
Moving boundaries and fixing boundaries

The boundaries between Diagnosis and Over/Under Diagnosis as well as the boundaries between Appropriate Treatment and Over/Under Treatment are constantly on the move depending on the evolving scientific evidences (or professional consensus) and must be constantly reassessed taking into account the range of uncertainty of the available scientific evidences (or professional consensus).

However, boundaries must be established to assist patient choices and health policies.
From reasoning to practicing:

• How can the range of uncertainty of an increasing scientific knowledge can be accommodated in patient choices and in policy decisions?
• Which is the role of patient empowerment?
• Which is the role of public health?
Diagnosis-Treatment cycle

- Social Status
- Individual Features
- Regulatory Function
- Information
- Supply
- Education
- Industry
- Research

Health Needs
Perceived Needs
Health Services Demand
Health Needs Satisfaction
Medical Intervention
A difficult balance

PATIENT AUTONOMY

PROFESSIONAL AUTONOMY

REGULATIONS

SCIENTIFIC EVIDENCES

DIAGNOSIS / TREATMENT

LEGITIMATE VESTED INTERESTS
A difficult balance

SCIENTIFIC EVIDENCES

PATIENT AUTONOMY

PROFESSIONAL AUTONOMY

LEGITIMATE VESTED INTERESTS

REGULATIONS