Evaluación y Acceso al Mercado en el Sector Farmacéutico

Universidad Carlos III de Madrid
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Conferencia

Nuevas tecnologías, salud y gasto sanitario

17 Junio 2011

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4. Nuevas tecnologías, gasto y salud ¿Valen la pena? ACB generalizado
5. Conclusión

El descubrimiento del Helicobacter pylori, fruto del azar

Press Release: The 2005 Nobel Prize in Physiology or Medicine

3 October 2005

The Nobel Assembly at Karolinska Institutet has today decided to award

The Nobel Prize in Physiology or Medicine for 2005

jointly to

Barry J. Marshall and **J. Robin Warren**

for their discovery of

"the bacterium *Helicobacter pylori* and its role in gastritis and peptic ulcer disease"

Summary

This year's Nobel Laureates in Physiology or Medicine made the remarkable and unexpected discovery that inflammation in the stomach (gastritis) as well as ulceration of the stomach or duodenum (peptic ulcer disease) is the result of an infection of the stomach caused by the bacterium *Helicobacter pylori*.

Robin Warren (born 1937), a pathologist from Perth, Australia, observed small curved bacteria colonizing the lower part of the stomach (antrum) in about 50% of patients from which biopsies had been taken. He made the crucial observation that signs of inflammation were always present in the gastric mucosa close to where the bacteria were seen.

Barry Marshall (born 1951), a young clinical fellow, became interested in Warren's findings and together they initiated a study of biopsies from 100 patients. After several attempts, Marshall succeeded in cultivating a hitherto unknown bacterial species (later denoted *Helicobacter pylori*) from several of these biopsies. Together they found that the organism was present in almost all patients with gastric inflammation, duodenal ulcer or gastric ulcer. Based on these results, they proposed that *Helicobacter pylori* is involved in the aetiology of these diseases.

Even though peptic ulcers could be healed by inhibiting gastric acid production, they frequently relapsed, since bacteria and chronic inflammation of the stomach remained. In treatment studies, Marshall and Warren as well as others showed that patients could be cured from their peptic ulcer disease only when the bacteria were eradicated from the stomach. Thanks to the pioneering discovery by Marshall and Warren, peptic ulcer disease is no longer a chronic, frequently disabling condition, but a disease that can be cured by a short regimen of antibiotics and acid secretion inhibitors.

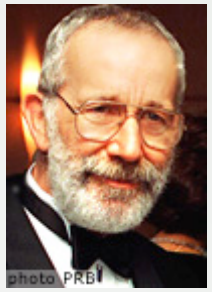
Barry J. Marshall

1/2 of the prize

Australia

NHMRC *Helicobacter pylori* Research Laboratory, QEII Medical Centre; University of Western Australia
Nedlands, Australia

b. 1951



J. Robin Warren

1/2 of the prize

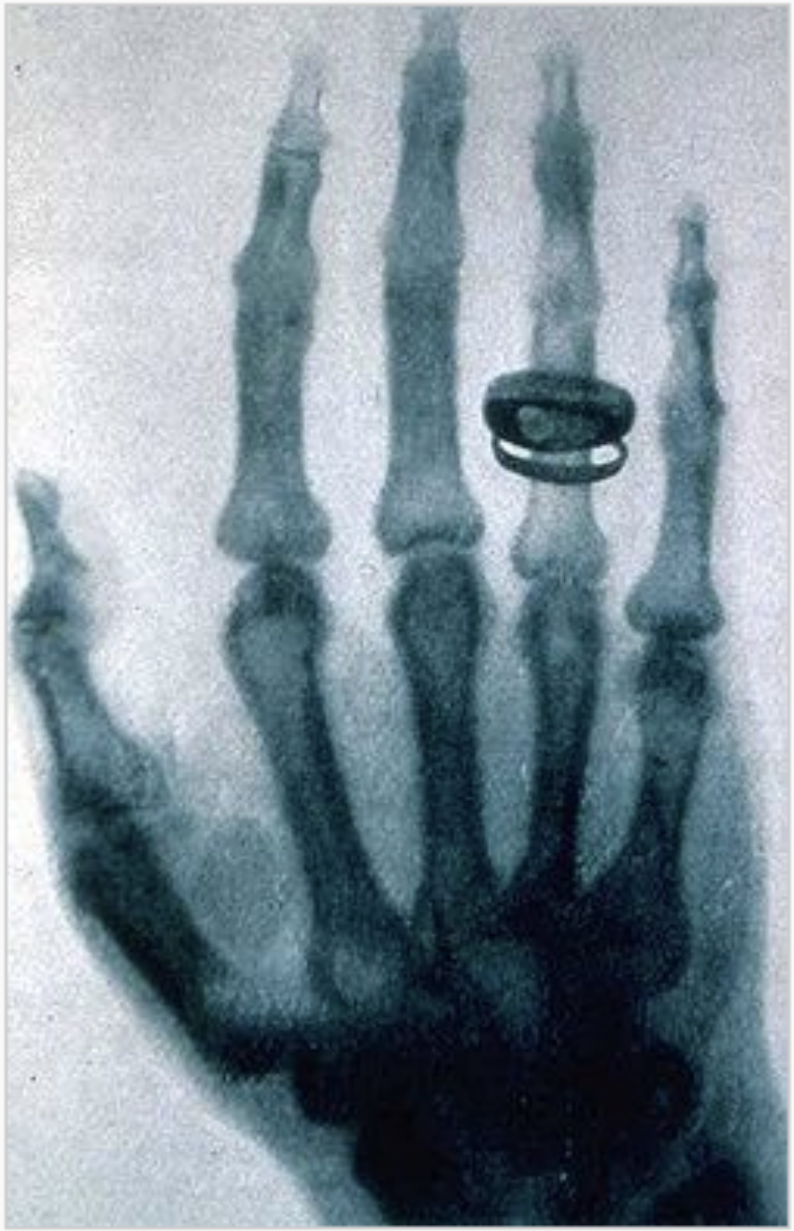
Australia

Perth, Australia

b. 1937

La creación de conocimiento

- Fruto del azar, de la necesidad, de los incentivos y de las políticas en proporciones desconocidas
- Características:
  - **Incertidumbre**
  - **Exogeneidad**
    - al sector. Dependencia de otras disciplinas
    - al ciclo económico



Radiografía tomada por Wilhelm Röntgen en 1896.

Pero ¿qué es innovación?

- Científica, Clínica, organizativa
- Innovaciones **incrementales** e innovaciones **radicales** (“*disruptivas*”)
  - El valor de una innovación incremental: *(“learning by doing”)*

González López-Valcárcel B. (2005). Difusión de nuevas tecnologías sanitarias y políticas públicas. Barcelona: Ed. Masson; 2005. ISBN 84-458-1525-3

Punto de encuentro de políticas científica, de salud e industrial

Una cronología acelerada

Evolución de la Medicina	Diagnosticar
Medicina curativa	**La enfermedad**
Medicina paliativa y del cuidados	**Factor de riesgo “activo”**
Medicina predictiva	**Factor de riesgo “pasivo”**

The New York Times March 20, 2010

Genetic Sampler

Prices and genetic targets vary among the four main companies offering DNA analysis to consumers. Here is a look at their services.

	PRICE	DISEASE RISK	DRUG RESPONSE	CARRIER TESTING	NON-HEALTH TRAITS†	ANCESTRY	GENETIC COUNSELING OFFERED
23andMe *Mountain View, Calif.*	$499, complete service $429, health only $399, ancestry only	12 diseases and dozens of others*	9 drugs	21 diseases	Yes	Yes	No
Navigenics *Foster City, Calif.*	$999	28 diseases	No	No	No	No	Yes
DeCode Genetics *Iceland*	$2,000, complete service $500, cancer risks $500, cardio risks	About 40 diseases	2 drugs	No	Yes	Yes	Yes
Pathway Genomics *San Diego*	$399, complete service $299, health only $199, ancestry only	24 diseases	9 drugs	37 diseases	No	Yes	Yes

*Specifies risks of 12 diseases for which the evidence is most solid and the risks of dozens of other diseases for which the evidence is not as strong.

†Non-health traits refers to genes such as eye color, ear wax type, muscle type, male pattern baldness.

Sources: The companies

Her daughter, by contrast, is one of a growing number of young women who call themselves previvors

Living With the BRCA Gene: One Family's Story

Generations of the Price family have been affected by a mutation in the BRCA1 gene that significantly raises the risk of breast and ovarian cancer. A parent who carries the defective gene has a 50 percent chance of passing it on to his or her children. In 2002, Christie Veale became the first family member to get a DNA test that revealed she had inherited the mutation from her mother. As many of her relatives followed, they have made different choices about how to manage their genetic predisposition to the life-threatening condition.

Robert Milton Price
Died of colon cancer at age 50.

Two of Robert and Eleanor's sisters died of breast cancer. Another sister died of ovarian cancer.

Eleanor Price Veith, 87
Has not been tested for the gene, but is assumed to be positive because her daughter has it. Ovarian cancer was diagnosed.

Robert Neville Price
Died of pancreatic cancer. One of his daughters died of breast cancer.

Rosalyn Price Pierce
Had never been tested for the gene, but must have passed it to her daughter. First developed breast cancer at age 34. Died of breast cancer in July at age 67.

Janice Price Brown
Had never been tested for the gene, but must have passed it to her daughters. Ovarian and breast cancer were first diagnosed at age 33. Died of breast cancer at age 57 in 2001.

Joan Veith Lindner, 64
Learned she had breast cancer at age 48, underwent chemotherapy and had her breasts and ovaries removed. She later tested positive for the gene.

"When I tested positive I knew my daughters needed to be tested as well."

Gloria Veith Spurlock, 59
Has not been tested.

"There's no real need to know because it is a situation where we would just continue to take care of ourselves extremely well."

Dana Pierce, 47
Tested negative for the gene.

Brenda Russo, 41
Tested positive for the gene, and had her ovaries removed. Goes for frequent mammograms and M.R.I.'s.

"I know some women have their breasts removed. To me that's a little drastic... I'm not safe from getting cancer, but I'm pretty confident that we would catch it early if we ever did catch it."

Jodi Dembeck, 41
After her sister learned she had cancer, she tested positive for the gene. She gets regular mammograms and is waiting to decide whether to have a fourth child before considering surgery.

"You can have everything taken out and a few cells maybe weren't caught. There's no foolproof way to avoid cancer."

Christie Veale, 39
After breast cancer was diagnosed, she tested positive for the gene. She then had a bilateral mastecomy and later had her ovaries removed.

"I've gotten rid of the areas where it can come. I'd rather be proactive than have something chasing me."

Lori French, 37
Tested negative for the gene.

"When they explained that that means my daughter would not get it either, I was elated."

Deborah Lindner, 33
Tested positive for the gene and had a prophylactic mastectomy this summer at age 33. She is planning to have her ovaries removed before she turns 40.

"I just feel really happy that I don't have to worry about this anymore."

Lisa Spurlock's brother has not been tested for the gene. He requested that his name and picture be withheld because of the potential for discrimination based on his genetic risk.

Lisa Spurlock, 24
Has not been tested.

"Since cancer runs in my family it makes me more aware of my lifestyle. I eat a lot of raw fruits and vegetables and try to be healthier."

THE NEW YORK TIMES

The DNA AGE

Articles in this series will periodically explore the impact of new genetic technology on American life.

Cancer Free at Age 33, but Weighing a Mastectomy

By AMY HARMON

More young women are learning early that they are genetically prone to breast cancer, setting off a new type of family drama.

September 16, 2007 | HEALTH | SERIES

THE DNA AGE

As Breeders Test DNA, Dogs Become Guinea Pigs

By AMY HARMON

Breeders have used new tests to exert dominion over the canine gene pool, and the lessons may bear on humans.

June 12, 2007 | SCIENCE | SERIES

Prenatal Test Puts Down Syndrome in Hard Focus

By AMY HARMON

A group of parents is trying to present positive perspectives on having a child with Down syndrome.

May 9, 2007 | U.S. | NEWS

THE DNA AGE

Stalking Strangers' DNA to Fill in the Family Tree

By AMY HARMON

Inexpensive genetic testing is turning the once-staid pursuit of genealogy into an extreme sport.

OUTLOOK — BIOMARKERS

Stratified medicine: strategic and economic implications of combining drugs and clinical biomarkers

Mark R. Trusheim, Ernst R. Berndt and Frank L. Douglas

Abstract | The potential to use biomarkers for identifying patients that are more likely to benefit or experience an adverse reaction in response to a given therapy, and thereby better match patients with therapies, is anticipated to have a major effect on both clinical practice and the development of new drugs and diagnostics. In this article, we consider current and emerging examples in which therapies are matched with specific patient population characteristics using clinical biomarkers — which we call stratified medicine — and discuss the implications of this approach to future product development strategies and market structures.

biomarkers include any diagnostic test or clinical observation that indicates a preferred treatment for a patient subpopulation. Clinical biomarkers can be based on gene-expression patterns, individual proteins, proteomic patterns, metabonomics, histology, imaging, physicians' clinical observations and even self-reported patient surveys. A clinical biomarker is not defined by its technology or biological basis, but rather by its reliable, predictive correlation to differential patient responses.

In summary, we believe that individualized medicine represents one end of a continuum of patient therapy, with empirical medicine at the other end of this continuum, and that in between lies the field of stratified medicine (FIG. 1). The ability of stratified medicine to match a therapy with specific patient population characteristics through clinical biomarkers has important implications for

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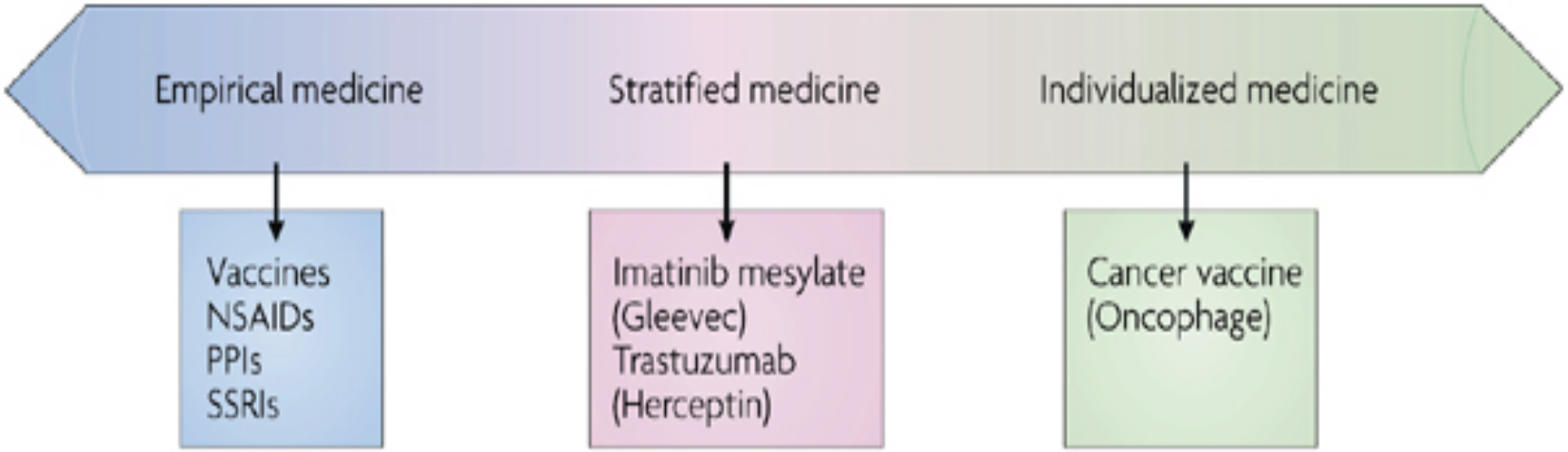

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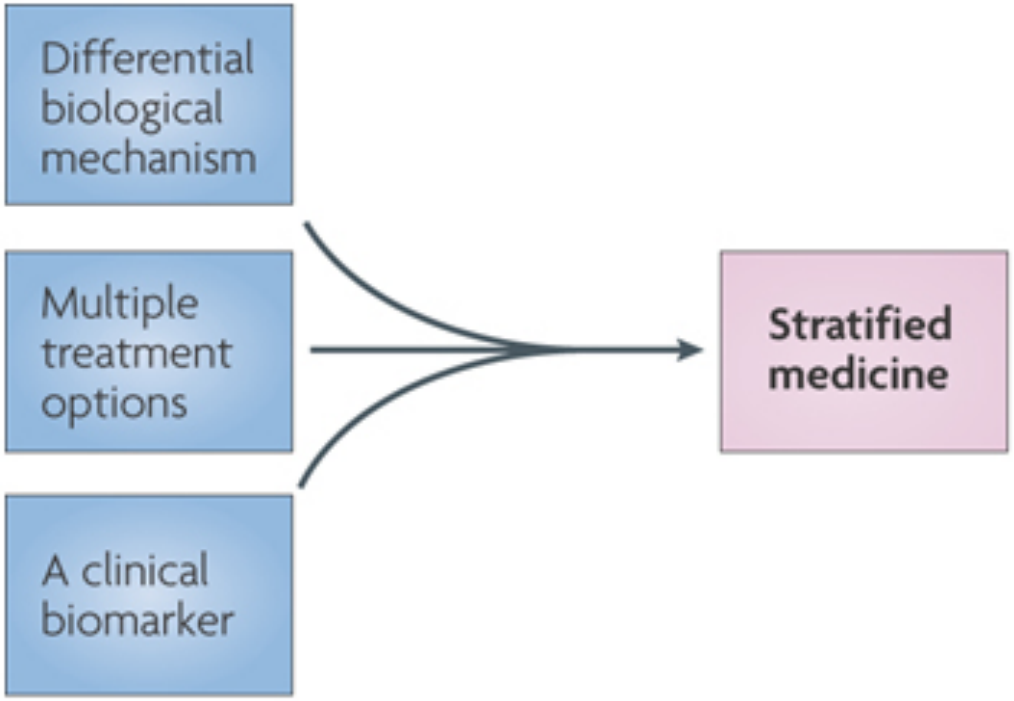

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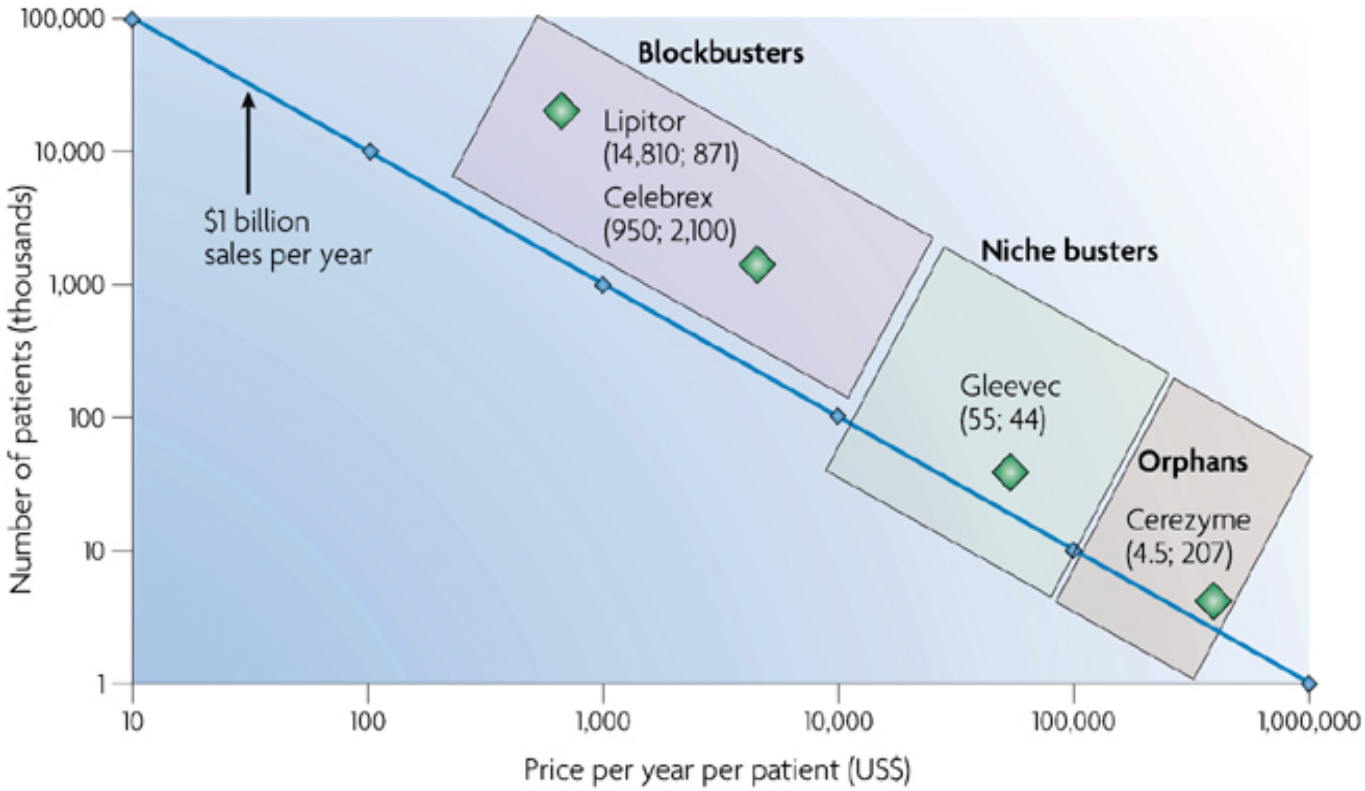


Gen Hipermetilado	Posible uso clínico
p16INK4a	Cálculo del riesgo de cáncer de colon y cáncer de endometrio. Detección de células neoplásicas en hígado y pulmón. Progresión del carcinoma oral de célula escamosa.
p14ARF	Detección de células cancerosas en cerebro. Progresión del carcinoma oral de célula escamosa.
MGMT	Cálculo del riesgo de cáncer de colon. Detección de células neoplásicas pulmón. Respuesta al tratamiento en gliomas.
APC	Cálculo del riesgo de cáncer de colon y cáncer de mama.
BRCA1	Respuesta al tratamiento en cáncer de mama y de ovario.
hMLH1	Cálculo del riesgo de cáncer de colon, cáncer de endometrio y gástrico. Respuesta al tratamiento.
SFRP1	Pronóstico desfavorable en cáncer de mama.
DAPK	Recurrencia de cáncer de vejiga.
CDH1	Pronóstico desfavorable de diversos tipos de cáncer.
CDH13	Pronóstico desfavorable de diversos tipos de cáncer.
THBS-1	Pronóstico desfavorable de diversos tipos de cáncer.
FAT	Pronóstico desfavorable de diversos tipos de cáncer.
GSTP1	Detección de células cancerosas en cáncer de próstata. Respuesta al tratamiento.
ER	Respuesta al tratamiento.
AR	Respuesta al tratamiento.

Biomarcadores para Uso Clínico

Informe de Vigilancia Tecnológica

Genoma España

abril 2010

BIOMARCADORES GENÓMICOS CONSIDERADOS VÁLIDOS POR LA FDA EN EL CONTEXTO DE MEDICAMENTOS APROBADOS EN EL ÁREA DE ONCOLOGÍA QUE PROPORCIONAN INFORMACIÓN FARMACOGENÓMICA *(cont.)*

Biomarcador	Medicamento	Tipo de test	Indicación Utilidad clínica del test
Cromosoma de Filadelfia	Dasatinib	Obligatorio	• Tratamiento de leucemia limfoblástica. • Predicción de respuesta (tratamiento efectivo en pacientes con presencia de traslocación entre los cromosomas 9 y 22 - cromosoma de filadelfia).
Expresión del gen alfa PML/RAR	Tretinoína	Informativo	• Tratamiento de la leucemia promielocítica aguda. • Predicción de respuesta (tratamiento no eficaz en pacientes que no presenten el marcador PML/RAR).
Variantes de UGT1A1	Irinotecan	Recomendado	• Fármaco antineoplásico. • Predicción de toxicidad (pacientes con mutaciones en UGT1A1 pueden desarrollar reacciones de toxicidad como neutropenia con el tratamiento).
Variantes de UGT1A1	Nilotinib	Informativo	• Tratamiento de la leucemia mieloide crónica. • Predicción de seguridad (pacientes con polimorfismos en el gen UGT1A1 pueden desarrollar hiperbilirrubinemia).

Tabla 17. Biomarcadores genómicos considerados válidos por la FDA en el contexto de medicamentos aprobados en el área de oncología.

Fuente: Table of valid genomic biomarkers in the context of approved drug labels.
http://www.fda.gov/cder/genomics/genomic_biomarkers_table.htm

¿Qué va a cambiar la Medicina Estratificada?

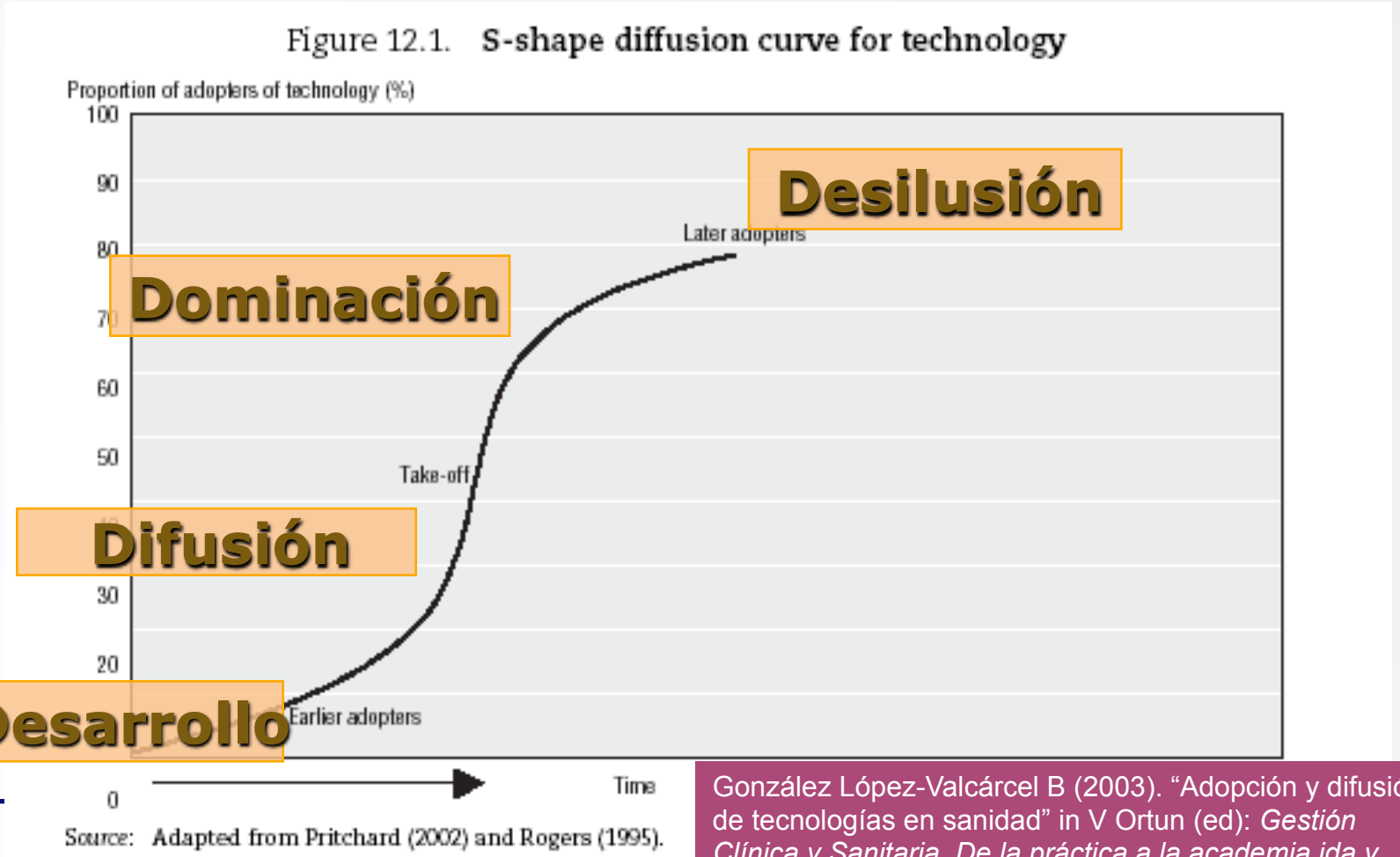
La incertidumbre del resultado del tratamiento

El tiempo de los ensayos clínicos

El reclutamiento de pacientes: globalización

La base del negocio: biomarcador/tratamiento

Etapas en el proceso de cambio tecnológico en sanidad



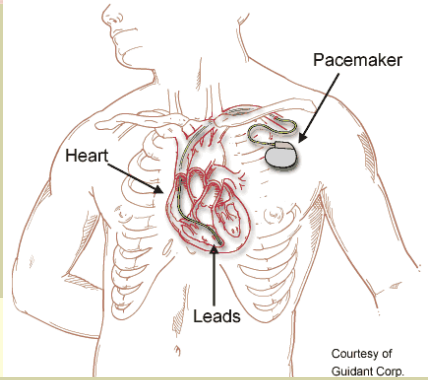
González López-Valcárcel B (2003). "Adopción y difusión de tecnologías en sanidad" in V Ortun (ed): *Gestión Clínica y Sanitaria. De la práctica a la academia ida y vuelta*: 143-160. Barcelona: ed. Masson

La duración del ciclo se acorta

Escorbuto

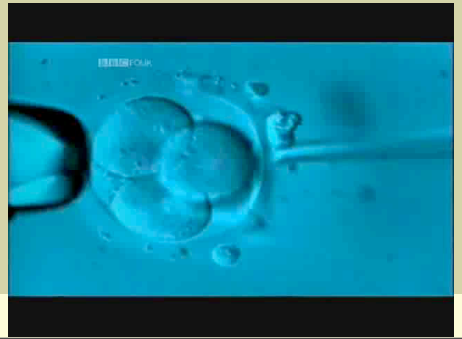
300 años

Marcapasos



150 años

Biotech



... meses

Vivimos en una sociedad medicalizada

Sector sanitario, fascinado por la tecnología

Reto para las políticas

Los avances de la medicina vuelan con la globalización. Los países, presionados por adoptar las nuevas tecnologías rápidamente

... Pero no hay presión para producir salud con tecnologías no sanitarias, o con tecnologías de bajo coste

Indice

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Nuevas
Tecnologías
El avance en tecnologías médicas explica entre el 33% y el 50% del aumento del gasto sanitario
Salud
Gasto

Preocuparnos por el futuro

¿**Sostenibilidad** del sistema? De SS a SSS

Gasto =

Mecanismos de propulsión del gasto

P x **n** x **q**

- Diferencial de precio: ¿Sustituye a alguna tecnología en uso?
- Políticas de precios

- Dinámica de la difusión
  - Extensión de las indicaciones y/o pacientes
  - Mas graves o de mayor riesgo (ancianos…)
  - Casos más leves

- Intensidad (frecuentación; dosis)
  - Pruebas diagnósticas y programas de cribado poblacional

¿Cuánto cuesta la quimioterapia? (cáncer colorectal, estadío IV irresecable)

The NEW ENGLAND JOURNAL of MEDICINE

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PERSPECTIVE

◄ Previous Volume 351:317-319 July 22, 2004 Number 4 Next ►

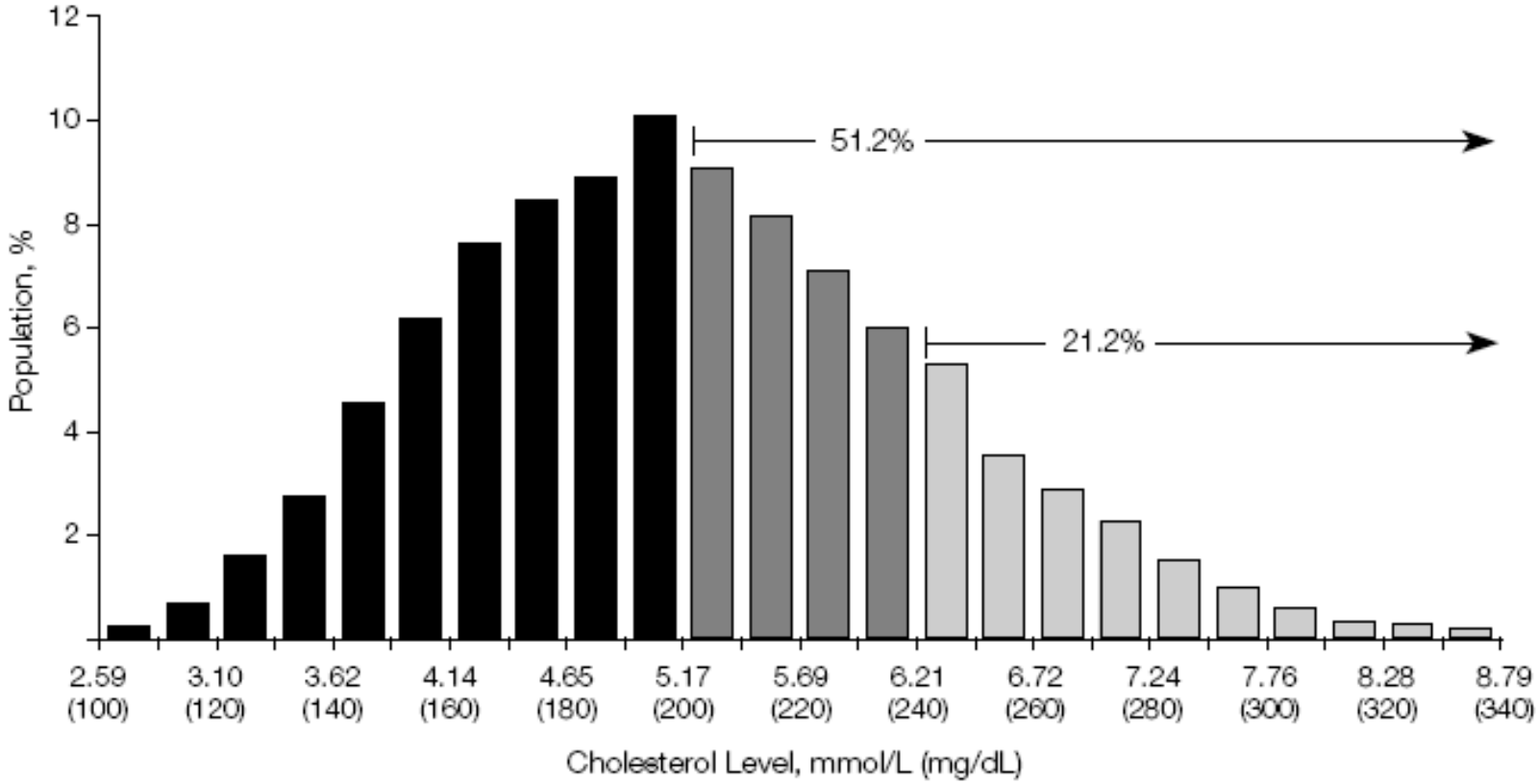
The Price Tag on Progress — Chemotherapy for Colorectal Cancer

Deborah Schrag, M.D., M.P.H.

El coste de la quimioterapia para cáncer colorectal, estadío IV irresecable

		Coste 8 semanas tto. (por paciente)	Ganancia Esperanza De Vida
Fluorouracil+Leucovor	1995	48€	+ 4 meses
Folfox/Folfiri	1996-2000	9145 €	+ 11 meses
Folfiri + Cetuximab	2004	23 596 €	+1.7 meses

Figure 3. Effect of Changing Diagnostic Thresholds on the Prevalence of Hypercholesterolemia



If individuals with total serum cholesterol levels higher than 5.17 mmol/L (200 mg/dL) are defined as abnormal, more than half the US adult (≥17 years old) population is labeled as diseased. Data from National Center for Health Statistics.[26]

Fuente: Fisher y Welch "Avoiding the Unintended Consequences of Growth in Medical Care How Might More Be Worse? *JAMA. 1999;281:446-453*

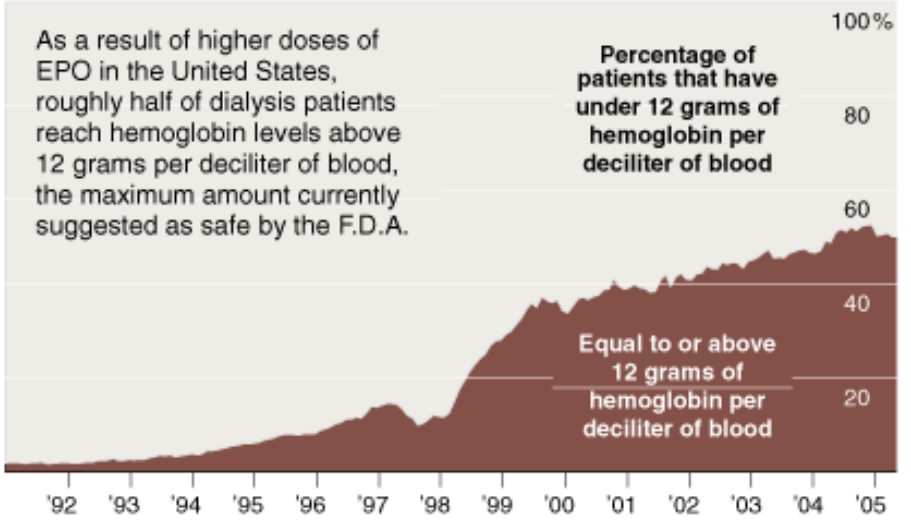
The New York Times May 9, 2007

Aggressively Treating Anemia

Doctors in the United States give dialysis patients significantly higher doses of the anemia drugs generally known as EPO, than many other countries.

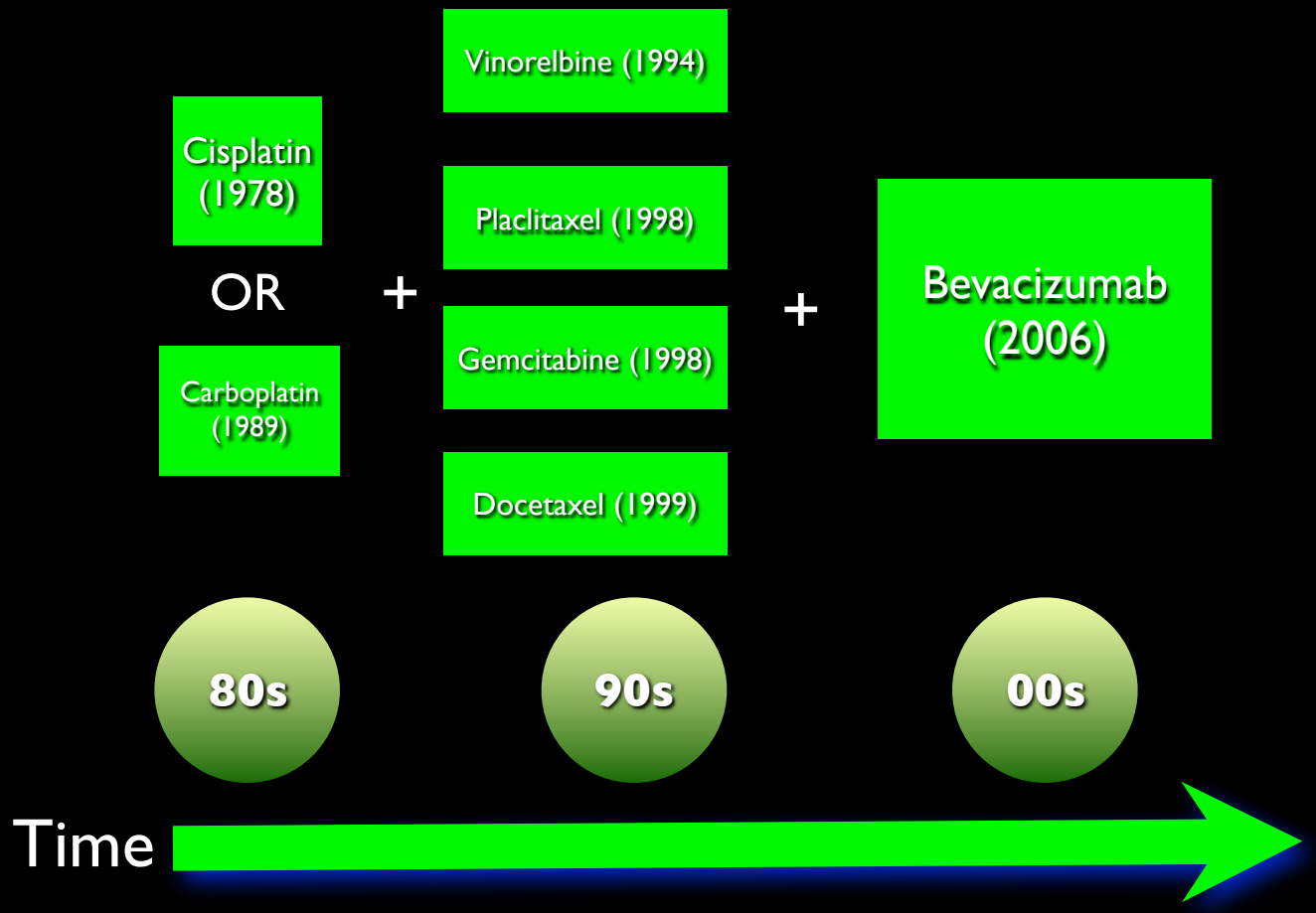
	Average EPO dose for a patient *Thousand units per week, 2002-3*	Percentage of patients receiving doses of: *Thousand units per week*				
		1-18	18-24	24-36	36-75	>75
United States	**17.4**	**69%**	**10**	**13**	**7**	**2**
Belgium	12.3	85	7	6	3	-
Sweden	12.2	78	15	5	1	-
Canada	10.8	86	7	6	-	-
Australia	8.7	91	5	3	-	-
Italy	8.1	95	3	2	-	-
Britain	8.0	96	2	2	-	-
Spain	7.6	96	3	1	-	-
France	7.4	96	2	2	-	-
Germany	6.8	99	1	-	-	-
Japan	5.3	98	-	2	-	-

As a result of higher doses of EPO in the United States, roughly half of dialysis patients reach hemoglobin levels above 12 grams per deciliter of blood, the maximum amount currently suggested as safe by the F.D.A.



Sources: Dialysis Outcomes and Practice Patterns Study; United States Renal Data System

Ejemplo: Cancer de pulmón de células no pequeñas (NSCLC)
Primera línea de tratamiento



Las nuevas tecnologías ¿más caras o más baratas?

Tecnologías ahorradoras

Cirugía (laparoscópica; ambulatoria;…)

Ulcera de estómago

Laboratorios de análisis

TIC

…

Tecnologías costosas

RX-TAC-RM-PET

Fármacos oncológicos

….

Los Biotech

Relevancia
de la Biotecnología
en España 2009

ESTIMACIÓN DEL NÚMERO DE PACIENTES SOMETIDOS A TRATAMIENTO BIOTECNOLÓGICO EN HOSPITALES Y AMBULATORIOS EN ESPAÑA

Fármaco biotecnológico	Consumo en los 5 hospitales en €	Coste por tratamiento paciente/año[34]	Población tratada en los 5 hospitales	Estimación de la población tratada en España[35]	Extrapolación del consumo para España en € (2008)
Abatacept	190.850	16.809	11	246	4.140.738
Adalimumab	7.871.150	14.105	558	12.107	170.774.661
Alenntuzumab	39.873	15.000	3	58	865.097
Bevacizumab	5.489.326	29.291	187	4.066	119.097.941
Cetuximab	3.268.885	14.350	228	4.942	70.922.642
Darbepoetina alfa	6.772.820	3.540	1.913	41.510	146.944.987
Eculizumab	1.300.594	293.700	4	96	28.218.058
Etanercept	9.931.524	12.816	775	16.813	215.477.125
Filgrastim	1.467.885	21.322	69	1.494	31.847.654
Ibritumomab tiuxetan	134.105	14.376	9	202	2.909.570
Idursulfasa	2.792.556	803.062	3	75	60.588.080
Infliximab	6.692.360	10.830	618	13.407	145.199.316
Interferón β-1a	10.023.612	11.596	864	18.754	217.475.092
Natalizumab	1.853.273	23.057	80	1.744	40.209.129
Pegaptanib de sodio	168.161	11.462	15	318	3.648.476
Peginterferón α-2a	1.892.426	8.062	235	5.093	41.058.613
Peginterferón α-2b	1.179.930	2.280	518	11.228	25.600.097
Ranibizumab	1.830.185	6.992	262	5.679	39.708.196
Rituximab	6.079.956	5.686	1.069	23.200	131.912.423
Somatotropina / Somatropina	8.709.614	12.000	726	15.747	188.966.210
Trastuzumab	6.252.917	4.745	1.318	28.591	135.665.032
TOTAL	**83.942.002**	**1.335.081**	**8.846**	**191.935**	**1.821.229.139**

MEJORAS SUSTANCIALES (+++) DE LOS TRATAMIENTOS BIOTECNOLÓGICOS SOBRE LA ESPERANZA DE VIDA, EL ESTADO DE BIENESTAR Y EL CONTROL DE LA ENFERMEDAD

Patología	Aplicación	Esperanza de vida	Calidad de vida	Evolución de la enfermedad
Artritis reumatoide	Abatacept		+++	+++
Síndrome de Hunter	Idursulfasa		+++	
Trastornos de crecimiento	Somatotropina/ Somatropina		+++	+++
Esclerosis múltiple	Natalizumab			+++
Hemoglobinuria paroxística nocturna (HPN)	Eculizumab	+++	+++	+++
Degeneración macular asociada a la edad	Ranibizumab		+++	+++
	Pegaptanib de sodio		+++	+++
Neutropenia	Filgrastim			
Leucemia linfocítica crónica	Alemtuzumab			+++
Cáncer renal	Bevacizumab	+++	+++	+++
Cáncer de mama	Bevacizumab	+++	+++	+++
	Trastuzumab	+++	+++	+++
Cáncer de pulmón	Bevacizumab	+++	+++	+++
Cáncer colorrectal	Cetuximab	+++	+++	
Linfoma no-Hodgkin	Rituximab	+++	+++	+++
Cáncer cabeza y cuello	Cetuximab			
Esclerosis múltiple	Interferón beta-1a		+++	
Hepatitis C	Peginterferón alfa-2a	+++	+++	
	Peginterferón alfa-2b	+++	+++	+++
Psoriasis crónica	Adalimumab		+++	
	Etanercept			
Artritis psoriásica	Adalimumab		+++	+++
Enfermedad de Crohn	Adalimumab			
	Infliximab			
Linfoma folicular	Ibritumomab tiuxetan			
Anemia	Darbepoetina alfa		+++	+++
Espondilitis	Infliximab		+++	+++

Grupo de Trabajo
- Presentación
- Principios Básicos
- Objetivos Generales
- Objetivos Metodológicos
- Grupo Coordinador
- Grupo GENESIS 2006-09
- Cómo participar

Bases Metodológicas
- Modelos de Solicitud
- Modelo de Informe
- Programa MADRE
- Intercambio Terapéutico
- Evaluación Compartida

Informes Elaborados
- Informes Hospitales
- PIT
- Medic. Homólogos

Investigación
- Proyectos

Enlaces de Interés
- Legislación

NOVEDADES

Génesis

Grupo de Evaluación de Novedades, EStandarización e Investigación en Selección de medicamentos

GRUPO DE TRABAJO
SOCIEDAD ESPAÑOLA DE FARMACIA HOSPITALARIA

ÚLTIMAS ACTUALIZACIONES:

Novedad, 6 de diciembre de 2009:

► Nueva sección en enlaces de interés: Legislación comunidades autónomas. Incluye Normativas sobre selección de medicamentos y Comisiones de Farmacia y Terapéutica en las comunidades autónomas. Enlace

Novedad, 7 de noviembre 2009:

► Propuesta GENESIS de PNT para la utilización en el hospital de medicamentos fuera de indicación, fuera de ficha técnica u "off label": Enlace

Informes hospitales, última modificación 8 de febrero de 2010:

► Acceso a más de 700 informes: Enlace

Indice

1. Introducción acerca del proceso de descubrimiento científico y la adopción/difusión de tecnologías
2. Nuevas tecnologías y gasto sanitario
3. La incorporación de tecnologías médicas en España y sus limitaciones
4. Nuevas tecnologías, gasto y salud ¿Valen la pena? ACB generalizado
5. Conclusión

Presupuesto y Gasto Público 49/2007: 87-
Secretaría General de Presupuestos y Gastos

La incorporación de nuevas tecnologías en el Sistema Nacional de Salud. Coste-efectividad y presiones sobre el gasto sanitario

BEATRIZ GONZÁLEZ LÓPEZ-VALCÁRCEL
Departamento de Métodos Cuantitativos en Economía y Gestión
Universidad de Las de Gran Canarias

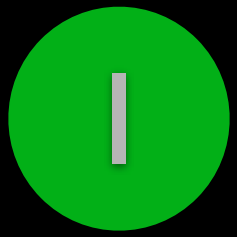
Recibido: Noviembre 2007
Aceptado: Diciembre 2007

Resumen

¿Cómo se aborda la introducción de nuevas tecnologías en España, cuál es el papel de los agentes y organismos, y como se puede mejorar? Hace falta estandarizar la metodología de los análisis de coste-efectividad y mejorar la difusión del conocimiento. Hay un intrincado conjunto de agentes a niveles macro, meso y micro con intereses no siempre convergentes implicados en incorporar nuevas tecnologías. Abogamos por una agencia estatal de evaluación independiente con autoridad moral y capacidad legal para establecer guías, al estilo de la NICE británica. Actualmente, las tensiones más intensas sobre el gasto se producen por el shock inversor y por los nuevos medicamentos biotecnológicos hospitalarios. El artículo analiza estas tensiones y propone medidas.

Palabras clave: adopción de innovaciones, difusión de innovaciones, priorización, evaluación de tecnologías sanitarias, gasto sanitario, coste-efectividad.

1. Por falta de conocimiento
2. De las decisiones: Institucionales, de regulación e incentivos
3. De la aplicación clínica

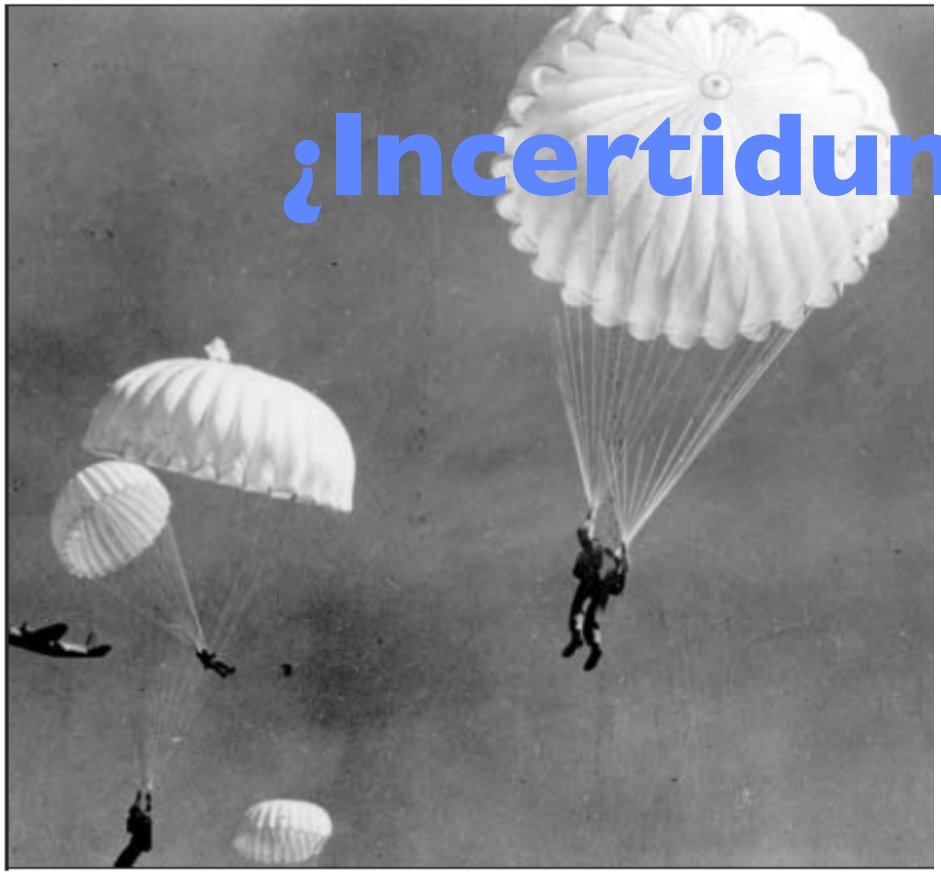


Limitación genérica: falta evidencia
¿por qué?

Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials

BMJ VOLUME 327 20–27 DECEMBER 2003

Gordon C S Smith, Jill P Pell



Parachutes reduce the risk of injury after gravitational challenge, but their effectiveness has not been proved with randomised controlled trials

What is already known about this topic

Parachutes are widely used to prevent death and major injury after gravitational challenge

Parachute use is associated with adverse effects due to failu[illegible] of [illegible] and iatrogenic injury

Studies of free fall do not show 100% mortality

What this study adds

No randomised controlled trials of parachute use have been undertaken

The basis for parachute use is purely observational, and its apparent efficacy could potentially be explained by a "healthy cohort" effect

Individuals who insist that all interventions need to be validated by a randomised controlled trial need to come down to earth with a bump

...Y las Otras Fuentes de Sesgos

- Conflictos de **intereses** (presión de la industria financiadora). Sesgos de publicación en metaanálisis,...

- Sesgos de **especificación**: **minería** de datos; modelos de **pre-test**; métodos de selección automática de variables

  Los resultados determinan la especificación del modelo y no al revés. Por eso los ensayos clínicos deben registrar su metodología a priori

Significación estadística vs significación práctica

JAMA, July 13, 2005—Vol 294, No. 2

Contradicted and Initially Stronger Effects in Highly Cited Clinical Research

John P. A. Ioannidis, MD

Context Controversy and uncertainty ensue when the results of clinical research on the effectiveness of interventions are subsequently contradicted. Controversies are most prominent when high-impact research is involved.

Objectives To understand how frequently highly cited studies are contradicted or find effects that are stronger than in other similar studies and to discern whether specific characteristics are associated with such refutation over time.

Design All original clinical research studies published in 3 major general clinical journals or high-impact-factor specialty journals in 1990-2003 and cited more than 1000 times in the literature were examined.

Main Outcome Measure The results of highly cited articles were compared against subsequent studies of comparable or larger sample size and similar or better controlled designs. The same analysis was also performed comparatively for matched studies that were not so highly cited.

Results Of 49 highly cited original clinical research studies, 45 claimed that the intervention was effective. Of these, 7 (16%) were contradicted by subsequent studies, 7 others (16%) had found effects that were stronger than those of subsequent studies, 20 (44%) were replicated, and 11 (24%) remained largely unchallenged. Five of 6 highly-cited nonrandomized studies had been contradicted or had found stronger effects vs 9 of 39 randomized controlled trials ($P = .008$). Among randomized trials, studies with contradicted or stronger effects were smaller ($P = .009$) than replicated or unchallenged studies although there was no statistically significant difference in their early or overall citation impact. Matched control studies did not have a significantly different share of refuted results than highly cited studies, but they included more studies with "negative" results.

Conclusions Contradiction and initially stronger effects are not unusual in highly cited research of clinical interventions and their outcomes. The extent to which high citations may provoke contradictions and vice versa needs more study. Controversies are most common with highly cited nonrandomized studies, but even the most highly cited randomized trials may be challenged and refuted over time, especially small ones.

JAMA. 2005;294:218-228 www.jama.com

Clinical research on important questions about the efficacy of medical interventions is sometimes followed by subsequent studies that either reach opposite conclusions or suggest that the original claims were too strong. Such disagreements may upset clinical practice and acquire publicity in both scientific circles and in the lay press. Several empirical investigations have tried to address whether specific types of studies are more likely to be contradicted and to explain observed controversies. For example, evidence exists that small studies may sometimes be refuted by larger ones.[1,2]

Similarly, there is some evidence on disagreements between epidemiological studies and randomized trials.[3-5] Prior investigations have focused on a variety of studies without any particular attention to their relative importance and scientific impact. Yet, most research publications have little impact while a small minority receives most attention and dominates scien-

De los 49 artículos más citados con ensayos clínicos, 45 concluían que la intervención o tratamiento es efectivo

32% fueron refutados o atemperados posteriormente

Analfabetismo estadístico y engaño

PSYCHOLOGICAL SCIENCE IN THE PUBLIC INTEREST

vol.8n.2 (2008)

Helping Doctors and Patients Make Sense of Health Statistics

Gerd Gigerenzer,[1,2] Wolfgang Gaissmaier,[1,2] Elke Kurz-Milcke,[1,2] Lisa M. Schwartz,[3] and Steven Woloshin[3]

[1]Max Planck Institute for Human Development, Berlin; [2]Harding Center for Risk Literacy, Berlin; [3]The Dartmouth Institute for Health Policy and Clinical Practice's Center for Medicine and the Media, Dartmouth Medical School

SUMMARY *Many doctors, patients, journalists, and politicians alike do not understand what health statistics mean or draw wrong conclusions without noticing.* Collective statistical illiteracy *refers to the widespread inability to understand the meaning of numbers. For instance, many citizens are unaware that higher survival rates with cancer screening do not imply longer life, or that the statement that mammography screening reduces the risk of dying from breast cancer by 25% in fact means that 1 less woman out of 1,000 will die of the disease. We provide evidence that statistical illiteracy (a) is common to patients, journalists, and physicians; (b) is created by nontransparent framing of information that is sometimes an unintentional result of lack of understanding but can also be a result of intentional efforts to manipulate or persuade people; and (c) can have serious consequences for health.*

What can be done? We discuss the importance of teaching statistical thinking and transparent representations in primary and secondary education as well as in medical school. Yet this requires familiarizing children early on with the concept of probability and teaching statistical literacy as the art of solving real-world problems rather than applying formulas to toy problems about coins and dice. A major precondition for statistical literacy is transparent risk communication. We recommend using frequency statements instead of single-event probabilities, absolute risks instead of relative risks, mortality rates instead of survival rates, and natural frequencies instead of conditional probabilities. Psychological research on transparent visual and numerical forms of risk communication, as well as training of physicians in their use, is called for.

Cómo de grande es el 100%?

Riesgo absoluto y riesgo relativo

Flu Shots, Mammograms, and the Perception of Probabilities

Katherine Grace Carman
Tilburg University

Peter Kooreman
Tilburg University
and IZA

Flu Shots, Mammograms, and the Perception of Probabilities*

We study individuals' decisions to decline or accept preventive health care interventions such as flu shots and mammograms. In particular, we analyze the role of perceptions of the effectiveness of the intervention, by eliciting individuals' subjective probabilities of sickness and survival, with and without the interventions. Respondents appear to be aware of some of the qualitative relationships between risk factors and probabilities. However, on average they have very poor perceptions of the absolute probability levels as reported in the epidemiological literature. Perceptions are less accurate if a respondent is female and has no college degree. Perceived probabilities significantly affect the subsequent take-up rate of flu shots and mammograms.

Table 4: Subjective and Epidemiological Probabilities of Dying (percentages)

Table 4A: Subjective and Epidemiological Probabilities of Influenza Related Death

Time Period	Prevention	Subj/Epid probability	Mean	Stan. Dev	Min	Median	Max
1 year	With flu shot	Subj	11.14%	23.35%	0%	1.1500%	100%
		Epid- mod	0.006%	0.014%	0.0001%	0.0001%	0.0398%
	Without flu shot	Subj	13.24%	23.96%	0%	2%	100%
		Epid- mod	0.032%	0.068%	0.0006%	0.0006%	0.1988%
	Effectiveness of flu shot $(p_{wo}-p_w)/p_{wo}$	Subj	-105%	1942%	-75755%	1.393%	100%
		Epid	80%				

Table 4B: Subjective and Epidemiological Probabilities of Death from Breast Cancer

Time Period	Prevention	Subj/Epid probability	Mean	Stan. Dev	Min	Median	Max
10 year	With mammogram	Subj	15.80%	18.06%	0%	10%	100%
		Epid	0.195%	0.149%	0.001%	0.180%	0.792%
	Without mammogram	Subj	26.36%	23.66%	0%	20%	100%
		Epid	0.229%	0.176%	0.001%	0.211%	0.931%
	Effectiveness of mamm $(p_{wo}-p_w)/p_{wo}$	Subj	12.17%	459.%	-16485%	43.24%	100%
		Epid	15%				
20 year	With mammogram	Subj	17.34%	18.21%	0%	10.09%	100%
		Epid	0.279%	0.155%	0.015%	0.267%	0.903%
	Without mammogram	Subj	28.85%	24.56%	0%	20.41%	100%
		Epid	0.328%	0.183%	0.017%	0.314%	1.062%
	Effectiveness of mamm $(p_{wo}-p_w)/p_{wo}$	Subj	16.77%	439%	-19229%	38.71%	100%
		Epid	15%				

2. Limitaciones institucionales para la toma de decisiones

Tabla 1

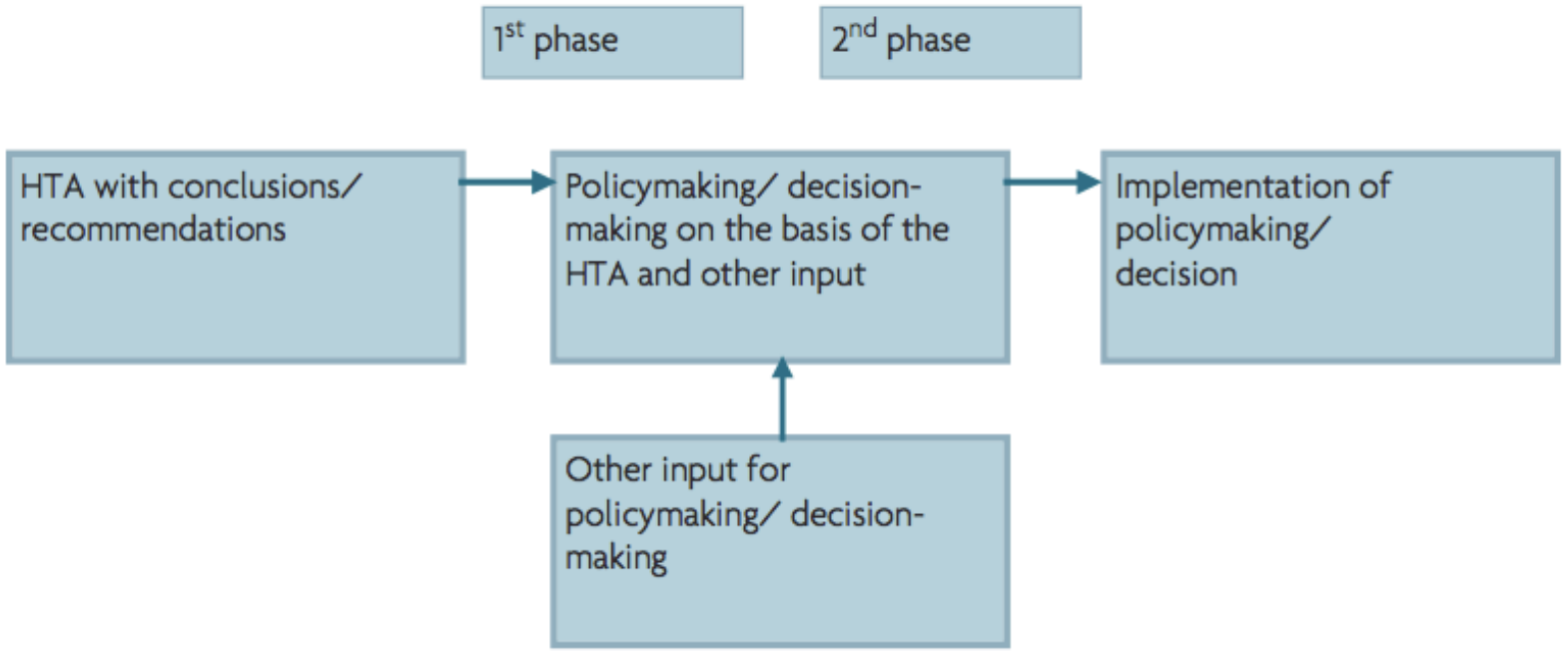
Incorporación de nuevas tecnologías. Competencias y decisores

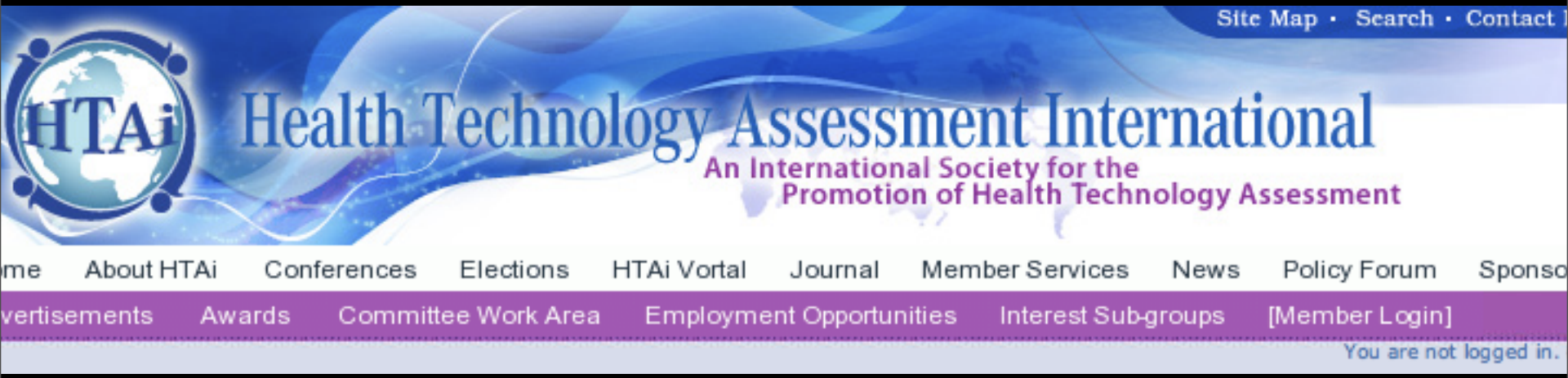
Tipo de Competencia	Institución u organismo	Nivel
Autorización	EMEA Ministerio de Sanidad	Europeo y estatal
Fijación de precio	Ministerio de Sanidad	Administración Central
Condiciones de la financiación pública	Ministerio de Sanidad Gobiernos regionales	Administración Central CCAA
Guías, evaluaciones, protocolos	Agencias de Evaluación de Tecnologías (indicativas) Comisiones de Farmacia y Terapéutica, Comisiones de Calidad, Servicios clínicos de los hospitales	Todos
Aplicación en la práctica clínica	Gobierno clínico, médicos en hospitales	Micro

HEALTH TECHNOLOGY ASSESSMENT HANDBOOK 2007

De la teoría a la práctica

Figur 10.2. The two phases of utilization of an HTA

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HTAi
Health Technology Assessment International
An International Society for the
Promotion of Health Technology Assessment
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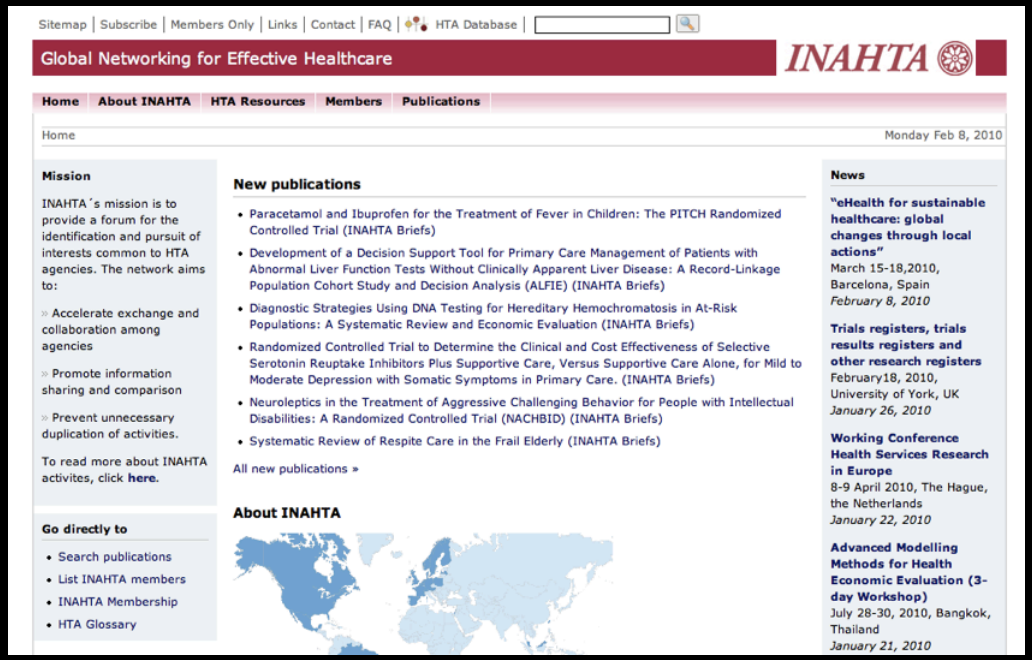
vertisements Awards Committee Work Area Employment Opportunities Interest Sub-groups [Member Login]
You are not logged in.

Year of establishment/ starting HTA activity	Organization		Country/ region
1982	CEDIT	Comité d'Evaluation et de Diffusion des Innovations Technologiques Assistance Publique Hôpitaux de Paris	France
1984	CMT	Center for Medical Technology Assessment	Sweden
1987	SBU	Swedish Council on Health Technology Assessment in Health Care	Sweden
1987	TNO	The Netherlands Organization for Applied Scientific Research	Netherlands
1988	–	National Fund for HTA	Netherlands
1989	ANAES (formerly ANDEM)	National Agency for Accreditation and Evaluation in Health	France
1990	ITA	Institute of Technology Assessment, Austrian Academy of Sciences	Austria
1991	CAHTA (formerly COHTA)	Catalan Agency for Health Technology Assessment and Research	Spain
1992	OSTEBA	Basque Office for Health Technology Assessment	Spain
1992	SFOPH	Swiss Federal Office of Public Health	Switzerland
1992	TA-SWISS	Swiss Science and Technology Council/Technology Assessment	Switzerland
1994	AETS	Agencia de Evaluación de Tecnologías Sanitarias	Spain
1995	FinOHTA	Finnish Office for Health Technology Assessment	Finland
1995	HSMTA	Health Statistics and Medical Technology Agency	Latvia
1996	AETSA	Andalusian Agency for Health Technology Assessment	Spain
1996	NCCHTA	National Coordinating Centre for Health Technology Assessment	UK
1997	DACEHTA (formerly DIHTA)	Danish Center for Evaluation and Health Technology Assessment	Denmark
1998	DSI	Danish Institute for Health Services Research	Denmark
1998	NHSC	National Horizon Scanning Centre	UK
1998	SMM	Norwegian Center for Health Technology Assessment	Norway
1998	–	Federal Committee of Physicians and Sickness Funds (since 2004: Federal Joint Committee)	Germany
1999	MTV-Aarhus	Unit for Health Technology Assessment – Aarhus University Hospital	Denmark
1999	NICE	National Institute for Clinical Excellence	UK
2000	DAHTA	German Agency for Health Technology Assessment	Germany
2000	HTBS	Health Technology Board for Scotland	UK
2001	HunHTA	Unit of Health Economics and Health Technology Assessment	Hungary
2001	MTV-Odense	Unit for Health Technology Assessment – Odense University Hospital	Denmark
2002	UETS	Unit for Health Technology Assessment – Madrid Region	Spain
2003	FKG	Federaal Kenniscentrum voor de Gezondheiszorg/Centre Fédéral d'Expertise des Soins de Santé	Belgium

*This overview is not intended to be exhaustive; it reflects developments up to 2004.



6 de sus 51 miembros son españoles

2. Limitaciones institucionales para la toma de decisiones (cont.)

Descoordinación y efectos externos entre niveles. Políticas basadas en la emulación y el "quién da más". Conflictos de intereses

Punto de encuentro entre política sanitaria e industrial (ej Biotech)

Falta cultura de priorización

Horizonte cortoplacista (electoral): los beneficios se descuentan a mayor tasa que los costes. Decisiones socialmente ineficientes

Dificultades para des-financiar

3. Limitaciones relacionadas con el uso de las nuevas tecnologías

- La "fascinación tecnológica" y los incentivos económicos
- Incentivos al (sobre)uso de tecnologías caras

Radiation Dose Associated With Common Computed Tomography Examinations and the Associated Lifetime Attributable Risk of Cancer

Rebecca Smith-Bindman, MD; Jafi Lipson, MD; Ralph Marcus, BA; Kwang-Pyo Kim, PhD; Mahadevappa Mahesh, MS, PhD; Robert Gould, ScD; Amy Berrington de González, DPhil; Diana L. Miglioretti, PhD

Background: Use of computed tomography (CT) for diagnostic evaluation has increased dramatically over the past 2 decades. Even though CT is associated with substantially higher radiation exposure than conventional radiography, typical doses are not known. We sought to estimate the radiation dose associated with common CT studies in clinical practice and quantify the potential cancer risk associated with these examinations.

Methods: We conducted a retrospective cross-sectional study describing radiation dose associated with the 11 most common types of diagnostic CT studies performed on 1119 consecutive adult patients at 4 San Francisco Bay Area institutions in California between January 1 and May 30, 2008. We estimated lifetime attributable risks of cancer by study type from these measured doses.

Results: Radiation doses varied significantly between the different types of CT studies. The overall median effective doses ranged from 2 millisieverts (mSv) for a routine head CT scan to 31 mSv for a multiphase abdomen and pelvis CT scan. Within each type of CT study, effective dose varied significantly within and across institutions, with a mean 13-fold variation between the highest and lowest dose for each study type. The estimated number of CT scans that will lead to the development of a cancer varied widely depending on the specific type of CT examination and the patient's age and sex. An estimated 1 in 270 women who underwent CT coronary angiography at age 40 years will develop cancer from that CT scan (1 in 600 men), compared with an estimated 1 in 8100 women who had a routine head CT scan at the same age (1 in 11 080 men). For 20-year-old patients, the risks were approximately doubled, and for 60-year-old patients, they were approximately 50% lower.

Conclusion: Radiation doses from commonly performed diagnostic CT examinations are higher and more variable than generally quoted, highlighting the need for greater standardization across institutions.

Arch Intern Med. 2009;169(22):2078-2086

Projected Cancer Risks From Computed Tomographic Scans Performed in the United States in 2007

Amy Berrington de Gonzâlez, DPhil; Mahadevappa Mahesh, MS, PhD; Kwang-Pyo Kim, PhD; Mythreyi Bhargavan, PhD; Rebecca Lewis, MPH; Fred Mettler, MD; Charles Land, PhD

Background: The use of computed tomographic (CT) scans in the United States (US) has increased more than 3-fold since 1993 to approximately 70 million scans annually. Despite the great medical benefits, there is concern about the potential radiation-related cancer risk. We conducted detailed estimates of the future cancer risks from current CT scan use in the US according to age, sex, and scan type.

Methods: Risk models based on the National Research Council's "Biological Effects of Ionizing Radiation" report and organ-specific radiation doses derived from a national survey were used to estimate age-specific cancer risks for each scan type. These models were combined with age- and sex-specific scan frequencies for the US in 2007 obtained from survey and insurance claims data. We estimated the mean number of radiation-related incident cancers with 95% uncertainty limits (UL) using Monte Carlo simulations.

Results: Overall, we estimated that approximately 29 000 (95% UL, 15 000-45 000) future cancers could be related to CT scans performed in the US in 2007. The largest contributions were from scans of the abdomen and pelvis (n=14 000) (95% UL, 6900-25 000), chest (n=4100) (95% UL, 1900-8100), and head (n=4000) (95% UL, 1100-8700), as well as from chest CT angiography (n=2700) (95% UL, 1300-5000). One-third of the projected cancers were due to scans performed at the ages of 35 to 54 years compared with 15% due to scans performed at ages younger than 18 years, and 66% were in females.

Conclusions: These detailed estimates highlight several areas of CT scan use that make large contributions to the total cancer risk, including several scan types and age groups with a high frequency of use or scans involving relatively high doses, in which risk-reduction efforts may be warranted.

Arch Intern Med. 2009;169(22):2071-2077

MARKETWATCH

Does Reimbursement Influence Chemotherapy Treatment For Cancer Patients?

Medicare reimbursement has little effect on who gets cancer treatment, but it does influence the kind of treatment received.

by Mireille Jacobson, A. James O'Malley, Craig C. Earle, Juliana Pakes, Peter Gaccione, and Joseph P. Newhouse

ABSTRACT: Before the Medicare Prescription Drug, Improvement, and Modernization Act (MMA) of 2003, Medicare reimbursed physicians for chemotherapy drugs at rates that greatly exceeded physicians' costs for those drugs. We examined the effect of physician reimbursement on chemotherapy treatment of Medicare beneficiaries older than age sixty-five with metastatic lung, breast, colorectal, or other gastrointestinal cancers between 1995 and 1998 (9,357 patients). A physician's decision to administer chemotherapy to metastatic cancer patients was not measurably affected by higher reimbursement. Providers who were more generously reimbursed, however, prescribed more-costly chemotherapy

¿A qué incentivos responde la utilización hospitalaria en el Sistema Nacional de Salud?

Salvador Peiró[a] / Enrique Bernal-Delgado[b]

[a]Escuela Valenciana de Estudios de la Salud. Red sobre Investigación en Resultados de Salud y Servicios Sanitarios (Red IRYSS G03/202). Valencia. España.

[b]Instituto Aragonés de Ciencias de la Salud. Red sobre Investigación en Resultados de Salud y Servicios Sanitarios (Red IRYSS G03/202). Zaragoza. España.

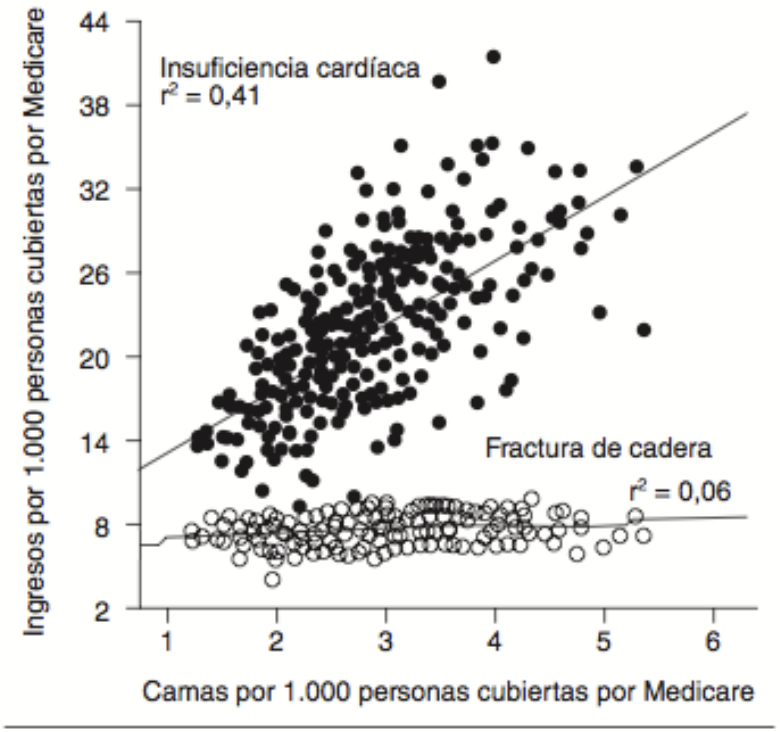
(What incentives foster hospital use in the National Health Service?)

¿A qué incentivos responde la utilización hospitalaria en el Sistema Nacional de Salud?

Salvador Peiró[a] / Enrique Bernal-Delgado[b]
[a]Escuela Valenciana de Estudios de la Salud. Red sobre Investigación en Resultados de Salud y Servicios Sanitarios (Red IRYSS G03/202). Valencia. España.
[b]Instituto Aragonés de Ciencias de la Salud. Red sobre Investigación en Resultados de Salud y Servicios Sanitarios (Red IRYSS G03/202). Zaragoza. España.

(What incentives foster hospital use in the National Health Service?)

Figura 1. Relación entre tasas de ingresos y capacidad instalada en atención «sensible a la oferta». Modificado de Wennberg et al[6].



Comparan tasas de utilización poblacional ajustadas de procedimientos quirúrgicos (cir gral y trauma), y su variabilidad, en España con Medicare (EEUU)

EEUU: incentivos "económicos" (cobrar actividad). A mayor oferta, mayor actividad en proc. con *incertidumbre sobre efectividad*

¿A qué incentivos responde la utilización hospitalaria en el Sistema Nacional de Salud?

Salvador Peiró[a] / Enrique Bernal-Delgado[b]

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(What incentives foster hospital use in the National Health Service?)

España:

1. Tasas menores que en EEUU, salvo procedimientos "innovadores" (artroplastia de rodilla, cadera, colecistectomía) que tienen tasas similares a las americanas

2. No correlación con oferta (camas)

3. Donde se hace "más", se hace más de todo

Hipótesis de la "fascinación tecnológica": incentivos profesionales: prestigio, autonomía, ...

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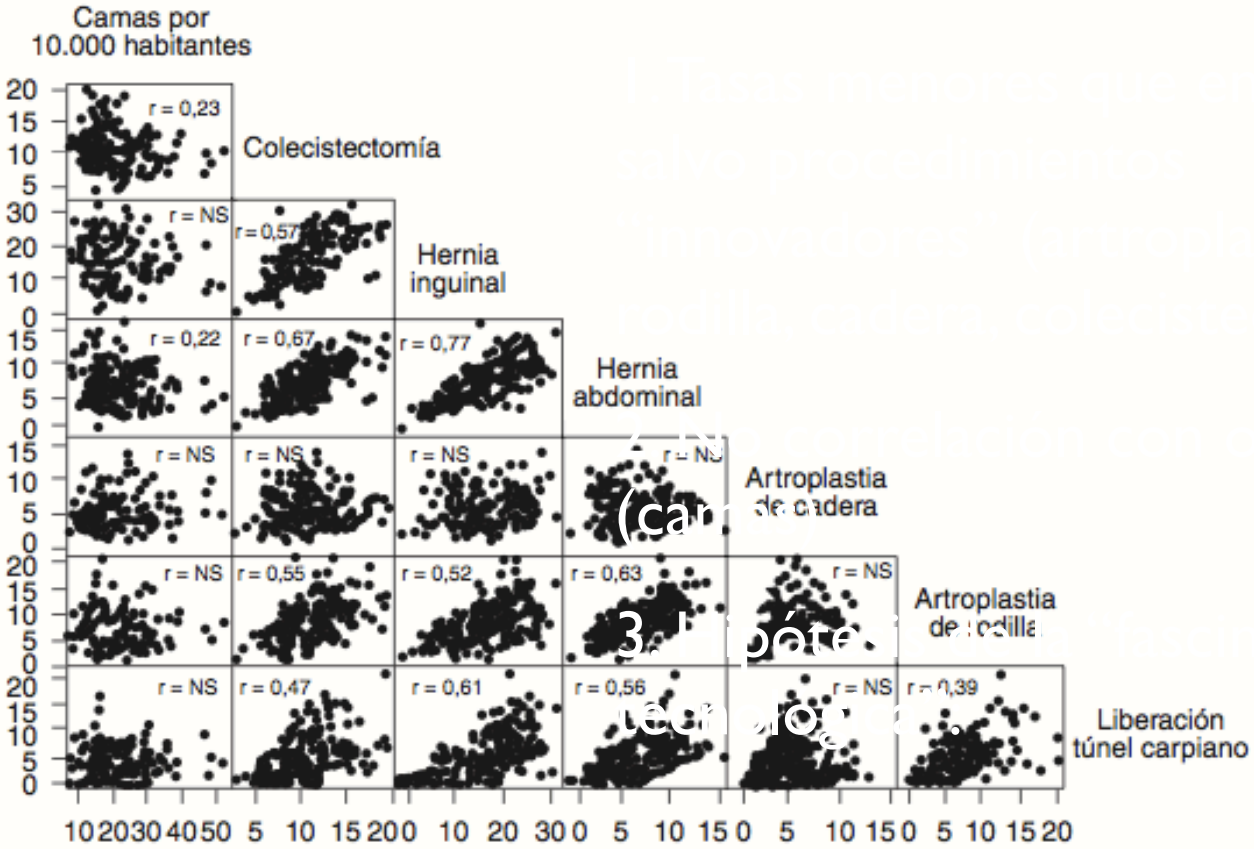
(What incentives foster hospital use in the National Health Service?)

Figura 3. Correlaciones bivariables entre oferta (camas por 10.000 habitantes) y tasas de intervenciones (101 áreas de salud, 2002).



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1. Introducción acerca del proceso de descubrimiento científico y la adopción/difusión de tecnologías
2. Nuevas tecnologías y gasto sanitario
3. La incorporación de tecnologías médicas en España y sus limitaciones
4. Nuevas tecnologías, gasto y salud ¿Valen la pena? ACB generalizado
5. Conclusión

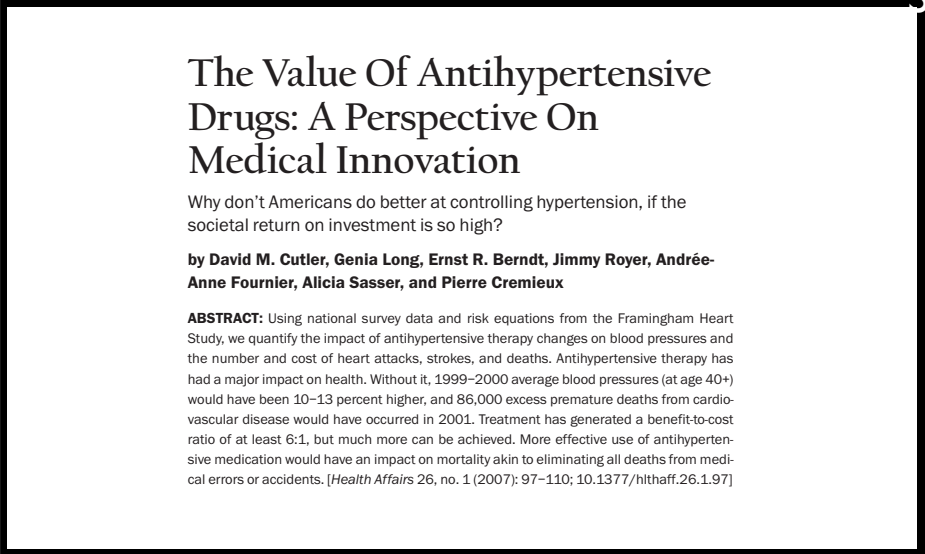

Nuevas
Tecnologías
¿Vale la pena el
avance
tecnlógico?
Salud
Gasto

Análisis retrospectivo. El valor de los medicamentos antihipertensivos

Ecuaciones presión sanguinea resultados adversos (Framingham Heart Study)

Sin medicamentos antihipetensivos:

- La tensión promedio de la población USA >40 años hubiera sido 10-13% mas alta
- Se habrían producido 86,000 muertes prematuras por CI (2001) y 833.000 ingresos hospitalarios más por ictus y IAM
- La Esperanza de vida hubiera sido 0.5 años menor (hombres) y 0.4 (mujeres)
- Ratio beneficio:coste = 6:1
- Las ganancias de mortalidad hubieran sido el doble si las guias de práctica clínica se generalizaran



The Value Of Antihypertensive Drugs: A Perspective On Medical Innovation

Why don't Americans do better at controlling hypertension, if the societal return on investment is so high?

by David M. Cutler, Genia Long, Ernst R. Berndt, Jimmy Royer, Andrée-Anne Fournier, Alicia Sasser, and Pierre Cremieux

ABSTRACT: Using national survey data and risk equations from the Framingham Heart Study, we quantify the impact of antihypertensive therapy changes on blood pressures and the number and cost of heart attacks, strokes, and deaths. Antihypertensive therapy has had a major impact on health. Without it, 1999–2000 average blood pressures (at age 40+) would have been 10–13 percent higher, and 86,000 excess premature deaths from cardiovascular disease would have occurred in 2001. Treatment has generated a benefit-to-cost ratio of at least 6:1, but much more can be achieved. More effective use of antihypertensive medication would have an impact on mortality akin to eliminating all deaths from medical errors or accidents. [*Health Affairs* 26, no. 1 (2007): 97–110; 10.1377/hlthaff.26.1.97]

Genia Long, David Cutler, Ernst R. Berndt, Jimmy Royer, Andrée-Anne Fournier, Alicia Sasser, Pierre Cremieux "The Impact of Antihypertensive Drugs on the Number and Risk of Death, Stroke and Myocardial Infarction in the United States" http://papers.nber.org/papers/W12096 y en Health Affairs 2007 vol26 n1: 97-109

1. Efecto de los medicamentos sobre la tensión arterial

2. Efectos de la (hiper) tensión sobre morbi-mortalidad (IAM, ictus)

3. Valor monetario de las ganancias de salud. Comparar con costes de tratamiento

Microdatos de la encuesta de salud 1959-62 para estimar la tensión arterial de la población sin medicamentos antihipertensivos. Variables predictoras: IMC, diabetes, historia familiar, alcohol, sal, ejercicio, etc.

H/M; S/D; MCO

Ecuaciones del estudio de Framingham de riesgo cardiaco
Para estimar como la hipertensión arterial afecta a la mortalidad, controlando el resto de factores de riesgo
Los autores discuten sesgos posibles

Cotización del AVAC EEUU: $100000

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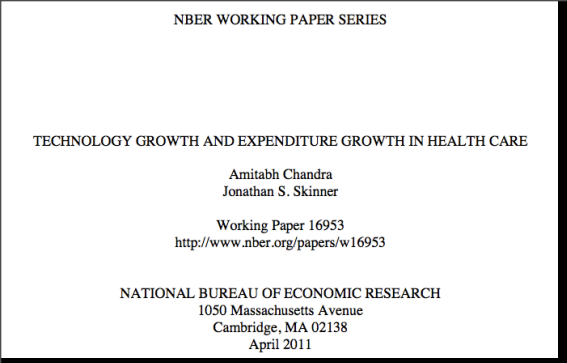
Table 2: Accounting for the Decline in U.S. Deaths from Coronary Disease: 1980-2000

Number of Deaths Prevented/ Postponed	Percent of Total Mortality Decline	Type of Medical/Surgical Treatment or Risk Factor Change
209,000	61.2%	Health risk reduction: Declines in prevalence of smoking, hypertension, cholesterol, physical inactivity
-59,370	-17.4%	Health risk increase: Rise in prevalence of body-mass index (BMI) and diabetes
149,630	***43.8%***	***Subtotal: Deaths prevented or postponed because of health risk factors***
83,285	21.9 %	Category I: Aspirin, heparin, warfarin, anti-hypertensives, β-blockers, diuretics
45,225	13.2%	Category I+: Statins, ACE Inhibitors, IIb/IIIa antagonists, thrombolytics
30,830	11.5%	Category II: Angioplasty/stents, bypass surgery (CABG), cardio-pulmonary resuscitation, cardiac rehabilitation
159,340	***46.6%***	***Subtotal: Deaths prevented or postponed by medical/surgical treatments***
32,775	9.6%	Unexplained by model
341,745	***100.0%***	***Total deaths prevented or postponed***

Source: Ford, et al., 2007.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Tipología de nuevas tecnologías (Chandra y Skinner, 2011)

1. Tecnologías *Run Home:* altamente efectivas para todos (ej: cirujanos lavar manos; antibióticos; aspirina post-infarto;)

2. Tecnologías con gran heterogeneidad individual de efectividad

3. Tecnologías de eficacia (efectividad) no demostrada

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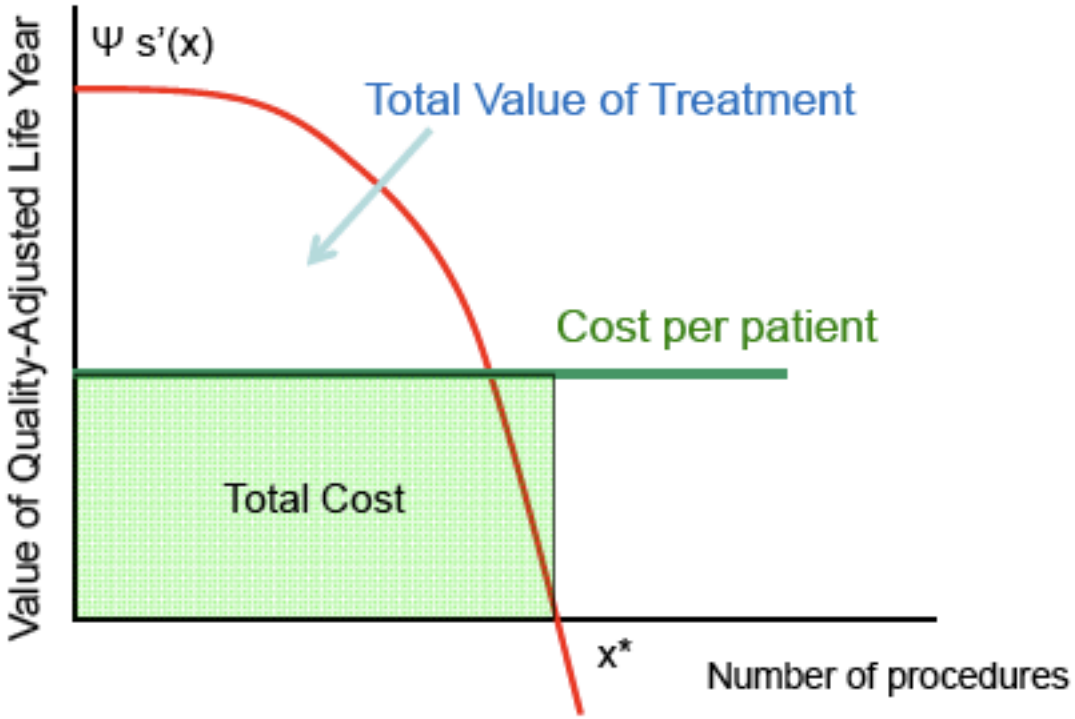

Figure 4: Benefits (area under the curve) and Costs of Category I Innovation Note: The vertical axis is scaled to reflect a constant value per quality-adjusted live year (e.g., $100,000 per life year).

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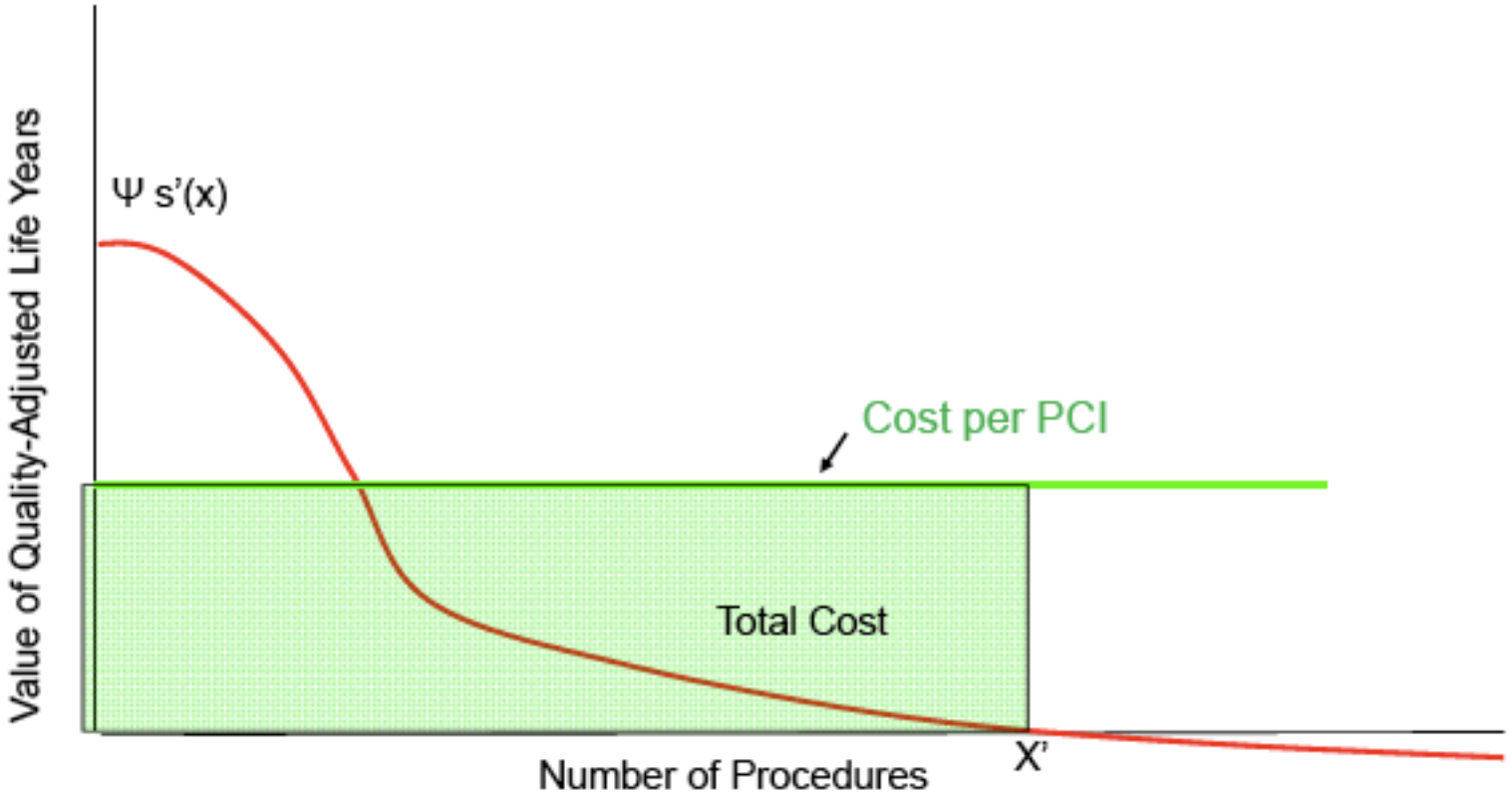

Figure 5: Benefits (area under the curve) and Costs of Category II Innovation Note: The vertical axis is scaled to reflect a constant value per quality-adjusted live year (e.g., $100,000 per life year).

Indice

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4. Conclusión

Concluyendo: puntos importantes

1. Las innovaciones en sanidad - clínicas, quirúrgicas, organizativas- son en gran parte exógenas al sector
2. Las políticas industrial, científica y sanitaria contribuyen a su dinámica
3. Gran parte de las nuevas tecnologías son propulsoras del gasto sanitario. Pero algunas tienen gran potencial de ahorro, particularmente las organizativas y TIC
4. Los medicamentos biotecnológicos están entre los factores propulsores del gasto sanitario en España más potentes

Concluyendo: puntos importantes

5. Es más sencillo evaluar el coste-efectividad de tecnologías "duras" que el de innovaciones organizativas y de intervenciones comunitarias preventivas
6. En España hay dificultades para la incorporación de tecnologías sanitarias, derivadas de la institucionalización de la evaluación y de los incentivos

Para leer +

González López-Valcárcel B. Difusión de nuevas tecnologías sanitarias y políticas públicas. Barcelona: Ed. Masson; 2005. ISBN 84-458-1525-3

B Gonzalez y Néboa Zozaya. Biotecnología y Economía de la Salud. Revista Panorama Social. Las claves de la sanidad futura: Investigación y gestión; (2008), nº 7

Beatriz G. López-Valcárcel, Jaime Pinilla "The Impact of Medical Technology on Health: A Longitudinal Analysis of Ischemic Heart Disease". Value in Health. 2008 Jan-Feb;11(1):88-96

B González López-Valcárcel La incorporación de nuevas tecnologías en el Sistema Nacional de Salud. Coste-efectividad y presiones sobre el gasto sanitario. Revista Presupuesto y Gasto Público 49/2007: 87-105

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