

comment

Big data, genomes, large populations, and technology are a captivating mix—one that is being preached with panache and style but often little critical analysis

NO HOLDS BARRED Margaret McCartney

PPA COLUMNIST OF THE YEAR

Don't rush into precision medicine

Barack Obama's state of the union address in 2015 kicked precision medicine into the mainstream. He wanted the US to lead "a new era of medicine—one that delivers the right treatment at the right time," with a precision medicine initiative to "bring us closer to curing diseases like cancer and diabetes—and to give all of us access to the personalised information we need to keep ourselves and our families healthier." So far \$215m (£175m) has been invested into the initiative, and one million American people will provide genetic data and biological samples with the aim of "better predicting disease risk, understanding how diseases occur, and finding improved diagnosis and treatment strategies."

In the UK we use the term "personalised medicine" interchangeably with precision medicine. NHS England wants to "move away from a 'one size fits all' approach to the treatment and care of patients with a particular condition, to one that uses emergent approaches in areas such as diagnostic tests, functional genomic technologies, molecular pathways, data analytics, and real time monitoring of conditions to better manage patients' health and to target therapies." So we have the Precision Medicine Catapult, a project funded by the government via its innovation agency, Innovate UK.

Catapult is clear that it wants to bridge research and commercialisation. The pace is fast and the attitude insistent; for example, trials are under way to test a sponge device that collects cellular material to generate biomarkers to diagnose Barrett's oesophagus without an endoscopy. Yet the Catapult website infers that the trials are just a formality, saying that "assistance" will be provided so that the "Cytosponge is ready to be adopted



into clinical practice following completion of the BEST3 trial." Shouldn't we wait for the results of this large trial first? Big data, genomes, large populations, and technology are a captivating mix—one that is being preached from TEDx-type platforms with panache and style but often little critical analysis.

Precision medicine is also, paradoxically, a recipe for unhelpful early diagnosis, false alarms, poor sensitivity, and conflicts of interest. Collaboration on shared goals is one thing; government funded drives to use

products of uncertain value are another. Genetic analyses are no doubt capable of guiding and improving treatment for many conditions—cancers most obviously—but the promise of tangible interventions must be based on fact, not hope.

We could use a bit more personalised medicine and precision right now; it doesn't need a genome, and it doesn't need much technology. The tool is talking—having conversations to decide what interventions are wanted and warranted. Clinicians continue to overestimate the benefits of treatments and to underestimate the harms: we estimate benefits and harms accurately only 11% and 13% of the time, respectively. We know that palliative care can provide more quality and quantity of life than usual care, but we also know there are large gaps in provision. Personalised medicine is definitely the goal, but technology may not always be needed to obtain it.

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References are in the version on bmj.com.

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PERSONAL VIEW Kate Masters

DNACPR is a big, scary acronym

Doctors and patients should talk more openly about dying and death, says **Kate Masters**, whose mum's end of life care led to a change in the law

In March 2011 my mum, Janet Tracey, died in hospital. She'd broken her neck in a car accident; she also had terminal cancer. Care in her final days seemed to be dictated by a form with a funny acronym: DNACPR, which I now know means "do not attempt cardiopulmonary resuscitation."

Mum was often intubated and communicated with pen and paper. "Please do not exclude me," she wrote. Her medical notes recorded that she wanted to be involved in discussions about her care. But, when doctors decided that she would not survive resuscitation, they didn't discuss it with her. This medical decision was in my mum's best interests, they told the family. They didn't mention DNR, DNAR, DNACPR, or the red edged form documenting the decision and conversation.

Mum had already had two failed extubations, and we were told that she might die when they tried again. But she didn't. She spent that afternoon chatting with us and asked for a Burger King.

We were elated that she was feeling better. Staff said not to worry about the "DNACPR form" on my mum's file, but a few days later my sister looked it up online and asked the hospital to remove it. Mum didn't want that form, and now conversations with staff about it were frightening her. On one day her notes made more mention of the form than anything else.

The family was also badgered about the form. The doctors told us that chest compressions would break my mum's ribs. Electrodes would burn her skin. She would be awake throughout. She probably wouldn't survive, and, if she did, she may be in



Outside the High Court, Janet Tracey's husband, David Tracey, and her daughters, left to right, Alison Noeland, Claire Tracey, and Kate Masters

Doctors should reassure patients that it does not mean "do not treat." An avoided or poor conversation can lead to mistrust that is hard to repair

a vegetative state, go to intensive care, and die soon anyway—and did I want to put her through that? Of course not. But my mum had made her decision: she didn't want the form.

It's really hard for patients to understand that CPR is brutal and often unsuccessful, especially when there's a big push to train the public, even schoolchildren, to provide it.

Mum was due to go to a hospice on a Monday. On Saturday another DNACPR form was placed on her file (the court found that this had been done with the agreement of the family). Mum died on the Monday morning.

Because we didn't know how ill my mum was, we missed out on

ACUTE PERSPECTIVE David Oliver

Why I'm changing my mind about resuscitation

I've written before about planning end of life care, pragmatism in decisions regarding "do not attempt cardiopulmonary resuscitation" (DNACPR), and possible dissonance between legal rulings and clinicians' daily realities. I've called for more measured media reporting and said that dying people need protection from undignified, distressing medicalised intervention.

My columns and others on DNACPR have elicited many responses, notably from Kate Masters, whose father's action led to the Tracey judgment. Kate has been contacted by many families with similar stories.

A memorable letter described resuscitation as "the routine,



We should do all we can to avoid CPR without patient consent or best interest discussions with families

institutionalised electrocution and torture of the dying" (BMA Newsletter, June 2016). Some people understandably prefer the term "allow natural death" to "DNACPR."

I've been contacted by doctors sharply distinguishing between resuscitation in people with life limiting conditions and in fit people with sudden unexpected illness or injury. I've read preliminary research from Scotland finding that many older inpatients were perfectly willing and able to discuss limits of treatment.

I've reflected on analogies between DNACPR and other medical interventions—despite its special status as an immediate lifesaving treatment that can be initiated

anywhere and by anyone.

For registered practitioners, common law precedent already protects us in acting without patient consent in life threatening situations when time won't allow otherwise. But, for most patients entering hospital, the possibility of resuscitation could reasonably be anticipated and planned for.

Consent law means that clinicians must disclose a reasonable degree of information on the risks and benefits of medical interventions. Compressions, intubation, cannulation, powerful drugs, and electrical shocks are surely such interventions. Informed consent for CPR would also need discussion of



HOSKINS/ANL/REX/SHUTTERSTOCK

time with her, and we weren't all there when she died. None of the family had the chance to say goodbye properly. I now know that clinicians use language such as "pain box" and "comfort" to indicate the end of life. "Poorly" meant dying.

Dad took the hospital to court, not because of the clinical decision not to attempt CPR but because of the communication. In June 2014 the judge ruled that clinicians must discuss DNACPR orders with patients unless this would cause them harm.

Since then I've spoken to many doctors who say that this legal duty causes them problems. For

example: "Why should we discuss something that won't work?" "We don't have time." "It always happens in the middle of the night." "Patients get upset when you talk about death." "It's hard to talk about death when we're trained to save lives." "CPR isn't like it is on *Holby City*."

DNACPR is a big, scary acronym that can strike fear into patients and clinicians alike. Doctors should reassure patients that it does not mean "do not treat" and be more open about what treatments will or won't work. An avoided or poor conversation can lead to mistrust that is hard to repair.

We urgently need a national conversation about death and dying to dispel myths and to inform the public about the reality of CPR and how it affects end of life care.

Information for patients about DNACPR is still lacking. With nationally available and consistent information, patients could engage properly with doctors about their end of life wishes. They could start the conversation.

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success rates, injuries, anoxic brain damage, intensive care admission, and ventilation—and the patient's own goals if he or she survives.

I'm coming gradually to a view that, for hospital inpatients and care home residents, we should do all we can to avoid CPR without patient consent or best interest discussions with families. Documenting CPR status for all patients would also remove the ambiguity when a crash team arrives at the bedside and finds no form. Is the decision to attempt resuscitation deliberate or an oversight?

Doctors are under no obligation to offer CPR on demand if it would be futile or harmful, but documenting the decision for every patient could ensure that it's been

explained and that no patients or families are taken by surprise.

I don't underestimate the difficulties in realising this. Competing pressures and priorities may cause perfunctory, rushed, poorly understood, or distressing discussions and take valuable time from other work. But I do welcome further debate, including any sparked by related articles in this issue of *The BMJ*, and the Resuscitation Council's ongoing "Emergency Care and Treatment Plan" (ReSPECT).

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BMJ OPINION Billy Boland

How do we become compassionate leaders?

It's been a while since I graduated from the Bevan programme at the NHS Leadership Academy, but I still benefit from it in unexpected ways. It's the relationships that I developed there that have been the lasting rewards for me.

I was scrolling through my newsfeed just before Christmas and came across this tweet from my facilitator, Mike Chitty:

"When we demand change, sustainability, transformation, and improvement we risk failing compassionate and inclusive leadership."

I don't know why he chose to share that advice but it's been bouncing around my head for ages. Personally, I'm completely committed to quality improvement. It makes perfect sense to me. But I also know that being overly evangelical about it can be off putting.

The truth is that most of the real change we are seeking in health services is not about creating new treatments or interventions. It's about the "how" of delivering care. Our main NHS resource is our people. And so, if we want to have an impact on the quality of care then we would do well to enable NHS staff to do their best work.

We need to remember that our people are our greatest asset

Given the immense strain that the service is under it is common to see change and transformation done in a way that overlooks the needs of staff, even though it is usually well meant. An excessive focus on systems, policy, and performance without talking about the people involved can exclude, undermine, and disillusion those we need to bring about such change.

Our colleagues are intelligent and educated. They work under pressure making difficult decisions and asking tough questions. That is what we want them to do. It serves no purpose to avoid these questions at times of stress and "demand" compliance, or see those who ask questions as trouble makers.

The beauty and strength of the NHS lie in its diversity. Services evolve positively when they listen to a range of voices, not just those that support the view of those driving change. Of course, not everything can be agreed, and consensus is not always possible. But we should seek to understand where others are coming from, and reflect on our own approach in light of this.

It's sometimes said that "people come and go," but in my experience systems and processes seem to come and go more often. We need to remember that our people are our greatest asset. If we force or demand action that does not make sense or excludes people, then we may not achieve the outcomes we seek.

Billy Boland is a consultant psychiatrist and associate medical director for quality and safety at Hertfordshire Partnership University NHS Foundation Trust

Resuscitation policy should focus on the patient, not the decision

Zoe Fritz and colleagues discuss new approaches to resuscitation decisions that incorporate broader goals of care

ALBERTO RUGGERI/GETTY IMAGES



KEY MESSAGES

- DNACPR decisions have taken on practical, legal and emotional significance far beyond their intended remit
- Alternative models should put CPR in the context of overall goals of care
- ReSPECT was developed with patients to incorporate individual preferences, encouraging person centred planning and care
- It supports informed discussions between patients and clinicians about the benefits and burdens of emergency treatments

Box 1 | Clinical context of CPR and DNACPR

- DNACPR decisions are considered in three situations:
 - when a patient with capacity refuses CPR or a patient without capacity has recorded their refusal of CPR in advance
 - when CPR is judged very unlikely to be effective because the patient is dying from an irreversible condition
 - when the potential burdens of CPR outweigh the potential benefits
- DNACPR policies are in widespread use. They exist in many countries,² and 80-90% of those who die in hospital have a DNACPR in place³
- A primary focus on acute care settings and a lack of consistency in policies between care settings is still widespread
- One in five CPR attempts made in hospital result in survival.⁴ Average survival rate is one in 10 in the community²³
- The decision not to attempt CPR should be distinct from decisions to initiate palliative care or to withhold other treatments
- Many patients with DNACPR decisions are discharged from hospital⁵
- Standardised DNACPR forms are often used to provide immediate access to decisions in the event of a cardiorespiratory arrest

Do not attempt cardiopulmonary resuscitation (DNACPR) decisions are made commonly in healthcare but can be a source of ethical concern and legal challenge. They differ from other healthcare decisions because they are made in anticipation of a future event and concern withholding, rather than giving, a treatment. DNACPR decisions were introduced to protect patients from invasive treatments that had little or no chance of success. However, inconsistencies in decision making, communication, and documentation have led to misunderstandings about what DNACPR means and to delivery of poorer care to some patients. Here we discuss the problems with current practice and outline newer approaches that place the patient, and their family, at the centre of the discussions. We focus on overall treatment plans and supporting clinicians and patients to make shared decisions about emergency treatments.

DNACPR decisions

CPR is an invasive medical treatment that was never intended to be given to patients who are dying from an irreversible condition.¹ DNACPR decisions provide a way of communicating when patients should not receive CPR, either because they do not want it or because it has

little chance of success (box 1). They are an important mechanism for protecting patients from harm, but they have taken on practical, legal, and emotional significance far beyond their intended remit.⁶

A comprehensive review in the NHS found shortcomings in considering, discussing, and implementing DNACPR decisions, as well as unintended consequences.⁷ The effects on patients and clinicians can be divided into three broad domains: futile or inappropriate CPR attempts, difficult and delayed discussion around DNACPR decisions, and inappropriate withholding of other treatments.

Firstly, we know that frailty⁸ and comorbidities⁹ are associated with worsening outcomes after cardiac arrest, and receiving attempted CPR when it has little prospect of success is one of the major concerns expressed both by patients approaching the end of their natural lives and by their relatives.⁷ This concern is well founded, as such attempts continue to take place.¹⁰ The ethics of widespread and indiscriminate use of CPR without balancing benefit with harms has been challenged.¹¹

Secondly, doctors are often hesitant to initiate conversations about DNACPR owing to concerns about causing distress to the patient or fear of complaints.²⁷ Patients rarely initiate conversations, even though



Box 4 | Alternative approaches in the UK

All of these approaches replace isolated resuscitation decisions with broader goals of care, encourage earlier conversations with patients and facilitate clear handover.

Universal Form of Treatment Options (UFTO)—UFTO was developed in Cambridge University Hospitals from focus groups with clinicians and patients and was informed by behavioural economics literature.²⁰ UFTO is for all patients in a hospital setting, not just those approaching the end of life. The form provides a dichotomous choice between goals of care (active treatment or optimal supportive care), a box in which more specific or nuanced instructions can be written, and documentation of the CPR decision

Treatment Escalation Plans (TEPs)—TEPs were introduced as a replacement for the DNACPR process at Torbay Hospital, south Devon, in 2006. Their use spread locally in 2012 to cover all health providers in the acute and community sectors across Devon (population 1.1 million). Many local care homes have embraced the concept; 30% of elderly inpatients now arrive at Torbay Hospital with a TEP.

Unwell and Potentially Deteriorating Patient Plan (UP)—UP was developed in oncology at Gloucestershire Hospitals NHS Trust and has been further refined through a multidisciplinary working group including representatives from intensive care, palliative care, medicine, and surgery. UP includes explicit guidance on escalation of treatment. Evaluation of and feedback on UP have been positive; rates of CPR discontinued on grounds of the National Cardiac Arrest Audit criterion of “futility” have fallen from 17% in 2011 to 2% in 2016

Deciding Right—In the north east of England, Deciding Right puts CPR decisions into a wider context of planning emergency care in advance and in the context of mental capacity legislation. A free app is available to aid decision making. See www.nescn.nhs.uk/common-themes/deciding-right/

research shows that they would like to discuss CPR.¹² Changing the focus of discussion from specific treatment options to acceptable health states and valued life might be more acceptable to them.¹³ Some doctors don't understand the legal position of patients and families in making DNACPR decisions. The legal requirement to involve patients in DNACPR decisions varies across jurisdictions. In some countries DNACPR is prohibited,² in others patients must consent to a DNACPR decision. Doctors in the UK must consult the patient or their family when writing a DNACPR notice unless doing so would cause “physical or psychological harm.”¹⁴

Finally, doctors and nurses can sometimes conflate DNACPR decisions with end-of-life care and mistakenly think that other treatment should not be given. Scenario studies show that the presence of a DNACPR note makes doctors significantly less likely to take blood cultures, put in a central line, or refer to an intensive care unit.¹⁵ Nurses were significantly less likely to perform a variety of monitoring tasks and interventions for patients with a DNACPR decision than for those without.¹⁶ In clinical practice, patients with heart failure and a DNACPR decision were less likely to have their left ventricular function assessed or to receive secondary prevention than matched counterparts without such notices.¹⁷ A study of referrals

to a medical intensive care unit showed that a DNACPR notice was the only factor significantly associated with a decision to refuse a patient admission.¹⁸

Clinicians are presented with an ethical dilemma: if they do not discuss CPR with a patient and record a decision, the patient may receive CPR that doesn't work or that results in a quality of life that may not be acceptable to them; if they do, others may misinterpret it and compromise the patient's overall care. Deciding what would achieve overall benefit for each person is compounded by the uncertainty of predicting future events. DNACPR practice as it currently stands raises considerable ethical concerns. Shifting the focus from a specific decision about CPR to making personalised plans on broader emergency care and treatment will help to tackle some of these concerns.

Integration with advance care planning

DNACPR decisions have historically been separate from advance care plans. Some primary care doctors have been encouraged or incentivised to consider both for certain patient populations.¹⁹ Synergy with advance care planning can be achieved by putting CPR decisions in the context of overall goals of care and combining them with discussions about what treatments (or outcomes) a patient



We must shift the focus from a specific decision about CPR to making personalised plans on broader emergency care and treatment

would or would not want. This kind of holistic approach has been adopted in Canada (box 2, see bmj.com) and in paediatrics (box 3, see bmj.com).

Alternative approaches

Several alternative models to DNACPR have been developed (box 4).

The Universal Form of Treatment Options (UFTO) was developed for hospitals with doctors, nurses, and patients. It sets the overall goals of care as “active treatment” or “optimal supportive care” and is considered for all patients who are admitted to hospital with an acute illness. A mixed methods evaluation reported that 82% of patients had UFTOs, a quarter of whom recorded decisions to withhold CPR.²² Frequency and severity of harms experienced by patients were significantly reduced when the recommendation not to attempt CPR was recorded within overall goals of care on an UFTO rather than on a standalone DNACPR. Interviews with clinicians and observation of ward practice showed that the UFTO helped provide clarity of goals of care and reduced negative associations with resuscitation decisions for clinicians. It changed the subject of conversations at nurse handover from resuscitation decisions to the patient's condition and overall goals of care. This qualitative work provides a suggested mechanism for the observed reduction in harms.

ReSPECT Recommended Summary Plan for Emergency Care and Treatment for: Preferred name _____

1. Personal details

Full name _____ Date of birth _____ Date completed _____

NHS/CHI/health and care number _____ Address _____

2. Summary of relevant information for this plan (see also section 6)

Including diagnosis, communication needs (e.g. interpreter, communication aids) and reasons for the preferences and recommendations recorded.

Details of other relevant planning documents and where to find them (e.g. Advance Decision to Refuse Treatment, Advance Care Plan). Also include known wishes about organ donation.

3. Personal preferences to guide this plan (when the person has capacity)

How would you balance the priorities for your care (you may mark along the scale, if you wish):

Prioritise sustaining life, even at the expense of some comfort. Prioritise comfort, even at the expense of sustaining life.

Considering the above priorities, what is most important to you is (optional): _____

4. Clinical recommendations for emergency care and treatment

Focus on life-sustaining treatment as per guidance below. Focus on symptom control as per guidance below.

clinician signature _____ clinician signature _____

Box 5 | ReSPECT development

The group aimed to establish an approach which:

- is developed with and is acceptable to patients, those important to them, healthcare professionals, carers, and other members of the public
- includes a decision support framework that supports patients and clinicians to have informed discussions about benefits and burdens of emergency treatments including CPR
- ensures that dialogue between the patient and clinicians is central to decision making
- can be used across all care settings
- can be used for people of all ages
- is based on evidence and experience from other successful initiatives
- contextualises a decision about CPR within overall goals of care, focusing on choices of treatments to be given rather than specifically on withholding CPR
- Records patient preferences and treatment decisions to guide clinicians in an emergency when the patient lacks capacity to make decisions for themselves

Further information can be found at: www.respectprocess.org.uk

Towards a solution: development of ReSPECT

Patients, clinicians, healthcare commissioners, and regulators came together in a 100 strong meeting in 2014 to consider the role of DNACPR decisions, following a review of published evidence and evaluation of their use in the NHS.⁷ The group agreed that patient and family involvement in decisions needed improving and that resuscitation decisions should be considered in the context of overall treatment plans.

After this meeting 37 stakeholders (including patient advocates) convened regularly to develop an approach that could meet the needs of different care settings and travel with the patient. They used the approaches above as the starting point and drew upon examples of best practice in the UK and internationally.

The group agreed that the aims should be to contextualise resuscitation decisions among overall goals of care; facilitate early discussion with patients and their families; and restrict documentation to a single sheet of paper (or digital equivalent), for access in an emergency. A public consultation process attracted over 1000 responses. The vast majority (91%)

of respondents agreed with the aims. Inclusion of the terms “recommended” (to explain that the plan is not legally binding) and “summary” (to emphasise that more detailed information should be recorded in health records and in advance care plans) led to the acronym: ReSPECT (Recommended Summary Plan for Emergency Care and Treatment; www.respectprocess.org.uk).

ReSPECT was designed not only to replace DNACPR forms but to provide additional support for conversations about goals of care and to provide guidance to clinicians about which treatments would or would not be wanted in an emergency in the event of a patient not having capacity to make decisions for themselves (box 5).

The ReSPECT process can be initiated in different care settings, including admission to hospital, in the community or outpatient clinic for patients with chronic or life limiting conditions, or at admission to a care home. When these discussions are initiated with people who are well there is a risk that they will underestimate the state of ill health that they will tolerate and how many interventions they might want.^{23,24} However, the earlier conversation may prepare the person

Doctors and nurses can sometimes conflate DNACPR decisions with end-of-life care

for the acute situation. Ideally the conversation should begin early with a known clinician and should be revisited when there is a change in situation—for example, admission to hospital. We have provided guidance on discussing resuscitation and other treatment decisions elsewhere, including more detail about the ReSPECT process.²⁵

ReSPECT tackles some of the barriers to having meaningful conversations about resuscitation and other treatment decisions, but logistical and ethical challenges remain. Community services are under pressure, so finding time to have adequate conversations may be difficult. Robust evaluation of the effectiveness of ReSPECT in achieving its overall goals will be essential.¹⁹

Time for a change?

The aim of ensuring that recommendations are documented in such a way that patients receive the right treatments at the right time is one which is universally accepted. Changing the culture of resuscitation decision making will not be easy, but newer approaches may offer a step towards achieving this.

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● PRACTICE, p 408

Hans Rosling

“Edutainer” who preached for a “fact based view”

Hans Rosling (b 1948; q Uppsala University, Sweden, 1975), died from pancreatic cancer on 7 February 2017

Hans Rosling’s 2006 TED talk—“Debunking third world myths with the best stats you’ve ever seen”—was described by Microsoft founder Bill Gates as “mindblowing” and has become the stuff of legend. In it, Rosling described as anachronistic the belief that the world was divided into two halves between developed and developing nations, a topic he had written about as early as 1993. In 2005 he had cofounded the non-profit Gapminder Foundation—with his son, Ola, and his daughter in law, Anna Rosling Rönnlund—as “a fact tank,” to fight “devastating misconceptions about global development.” The software used to power Rosling’s visual graphics had been developed by his son.

Rosling’s 2007 TED talk (New insights on poverty) was even more “mindblowing” than his 2006 talk. He concluded by saying: “Please remember my main message, which is this: the seemingly impossible is possible. We can have a good world.”

Google founders Larry Page and Sergey Brin approached Rosling with an offer to buy the Gapminder Foundation software and make it freely available. The offer was accepted.

Rosling in subsequent years continued to give TED talks. He spoke at the annual World Economic Forum in Davos, Switzerland. He starred in television documentaries and advised billionaire philanthropists, and politicians, as well as myriad UN and global healthcare leaders.

Social justice

Hans Rosling was born in Uppsala, Sweden, on 27 July 1948. His father, who worked in a coffee factory, would talk to his son about the hard life of Africans who picked the coffee beans. In his late teens it was noticed that he had an abnormal liver



count—the first signs of ill health which would follow him throughout his life.

Rosling studied statistics and medicine at Uppsala University, where he met his future wife, Agneta Thordeman. They married in 1972 and travelled to Bangalore, India, where Rosling studied public health at St John’s Medical College. Rosling received his medical degree in 1975 from Uppsala University and trained in the town of Hudiksvall.

In 1978 he was diagnosed with testicular cancer, which had spread to his abdomen. His medical exams also showed chronic liver inflammation, which in the late 1980s was diagnosed as having been caused by hepatitis C after that virus was discovered. “He underwent a gruelling but successful course of radiation therapy (in 1978) for his testicular cancer, but hepatitis C continued to ravage his liver for the rest of his life,” according to a statement issued by the Karolinska Institute.

Konzo

In 1979, after successful radiation therapy, Rosling travelled with his wife and two young children to Mozambique to provide medical care. Towards the end of his two year stay, he examined 30 women and children whose legs were mysteriously paralysed. Unable to diagnose the disease, he investigated and eventually discovered the disease—now known as konzo—was caused by eating naturally occurring cyanide in cassava roots. After his return to Sweden, Rosling made several konzo

In his 2006 TED talk, Rosling described as anachronistic the belief that the world was divided into two halves between developed and developing nations

research trips to Tanzania and the Democratic Republic of Congo, and was the author of almost a dozen papers on the disease.

In a profile of Rosling published by *Nature* in December 2016, he said: “Extreme poverty produces diseases. Evil forces hide there. It is where Ebola starts. It’s where Boko Haram hides girls. It’s where konzo occurs.”

In 1990 Rosling was appointed associate professor of internal medicine at Uppsala University, and in 1996 he moved to the Karolinska.

In 2014 his hepatitis C infection had worsened, putting his life at risk. He travelled to Japan, where a new drug treatment not yet available in Sweden had been approved. The treatment was successful, giving him one more chance to work in Africa. His work with Liberia’s head of Ebola surveillance, Luke Bawo, was documented in *Science*. “I’m not a virologist,” he told the magazine, “and I’m not a clinician, but I have considerable experience investigating messy epidemics in poor parts of Africa.”

The *Nature* article of December 2016 made no mention of Rosling’s impending death. But those closest to him knew that the sad day was coming. Agneta Rosling announced her husband’s wish that any donations in his memory go to UNICEF.

Rosling leaves Agneta; two sons; and a daughter.

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Read a tribute by Hans Rosling’s friends and colleagues (goo.gl/oZ9N8R) and a summary of his life’s work (goo.gl/InJCqw)

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CONTINUITY OF CARE BY GPs

Care continuity's critical, elusive role in healthcare

Barker et al examine the association between continuity of care and unnecessary admissions (Research, 4 February). They find that patients with a usual source of primary care are less likely to have unnecessary admissions. This corroborates a study my colleagues and I conducted on a usual source of medical care and healthcare costs among US Medicare patients.

We observed a significant reduction in total Medicare costs among patients at practices where continuity of care was high, compared with patients at practices with low continuity of care. This was driven by lower physician costs and lower ambulatory care sensitive condition costs, with and without 30 day post-acute care.

Both studies emphasise improvements from a usual source of primary care for elderly patients, but many countries still have a primary care physician shortage. We're left wondering when more emphasis will be placed on an adequate supply of primary care providers worldwide.

Rebecca J Perry (rjperry@rti.org)

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Policy makers need to heed this evidence

Our practice operates a personalised list service, even though local CCG leaders think it is outdated, expensive, and leads to more admissions. Despite having a larger than average elderly population, our practice has fewer non-elective admissions than the regional and CCG averages. Baker et al provide the evidence to support our model (Research, 4 February).

We have found that organisation continuity is as important as GP continuity in delivering effective personalised



LETTER OF THE WEEK

We must agree to redistribute wealth more fairly

Pickett and Wilkinson summarise some of the evidence that income inequalities severely affect health and happiness (Editorial, 11 February).

Globalisation and mechanisation have led, in developed countries such as the UK and US, to a change in manufacturing. Labour intensive, relatively low skilled work has been lost. We've benefited from this overall, as goods and components have become cheaper, and our countries have grown more affluent.

People in low skilled jobs tend to be less well paid to start with, and wealth and prosperity are associated with better health and happiness. Without a system to redistribute wealth, this redistribution of work exacerbates inequalities.

Norway is one of the world's healthiest countries, not just because it is wealthy but because it has systems to redistribute wealth. This may be partly because Norwegians view fairness, and reducing the impact of luck on prosperity, as important.

Like Norway, we could do more to improve our society's health and happiness by agreeing to redistribute wealth more fairly. The rich and powerful may fear that they'll lose out; but, if we don't, the rest of us—including those who are reasonably well off but not so affluent that we don't need to care—will lose out.

We mustn't let the top 1% feather their own nests, creating a less humane society, at the expense of the rest of us.

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care. All results, queries, and letters go to the named GP. All GPs have a named receptionist. This is underpinned by shared clinical protocols and on-call systems.

I urge policy makers to heed the findings of Baker et al and to strengthen the role of the named accountable GP. A significant reduction in unplanned admissions could be achieved with minor organisational changes. It may not be new and fancy. It is not vanguard nor blue sky. But we know it works.

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ALCOHOL INTERVENTIONS

Screening, target group, and patient centred care

It makes good sense for practitioners to discuss alcohol with their patients (Analysis, 4 February), but how?

Practitioners are reluctant to screen. We need smarter ways to start discussions about alcohol use, related to clinical relevance and patient concerns.

We also need to rethink the target group. Currently it comprises people with hazardous and harmful drinking, while those with dependence

should be referred to specialists. But large parts of the world have no specialists. Furthermore, unless practitioners are confident that they can help dependent drinkers they are unlikely to ask people about their drinking. So, paradoxically, to reach hazardous and harmful drinkers, practitioners need simple but effective tools to treat dependence.

People with alcohol dependence fear getting into trouble if they tell their doctor. We must put patients in the driving seat and enable them to choose treatment goals as well as types of treatment.

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Author's reply

We were struck by the breadth, clarity, and force of Andréasson's response to our article. He emphasises the scale of the scientific challenge of alcohol use and raises a range of issues, with which many will disagree.

A recent study that I was involved in shows a potential way forward. PREMIUM was a large trial that evaluated a counselling intervention, comprising four sessions, designed to tackle the needs of harmful (that is, already problematic, not hazardous) drinkers in a contextually valid way. It found promising short term self reported effects.

Although dependent drinkers receiving the intervention were excluded from this study, they were randomised to a pilot trial, the findings of which have yet to be reported. The trial was designed with wider applicability and implementation considerations in mind. Obviously the agenda for change is much more ambitious, but this is a start.

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