Simulation en santé
et innovations pédagogiques

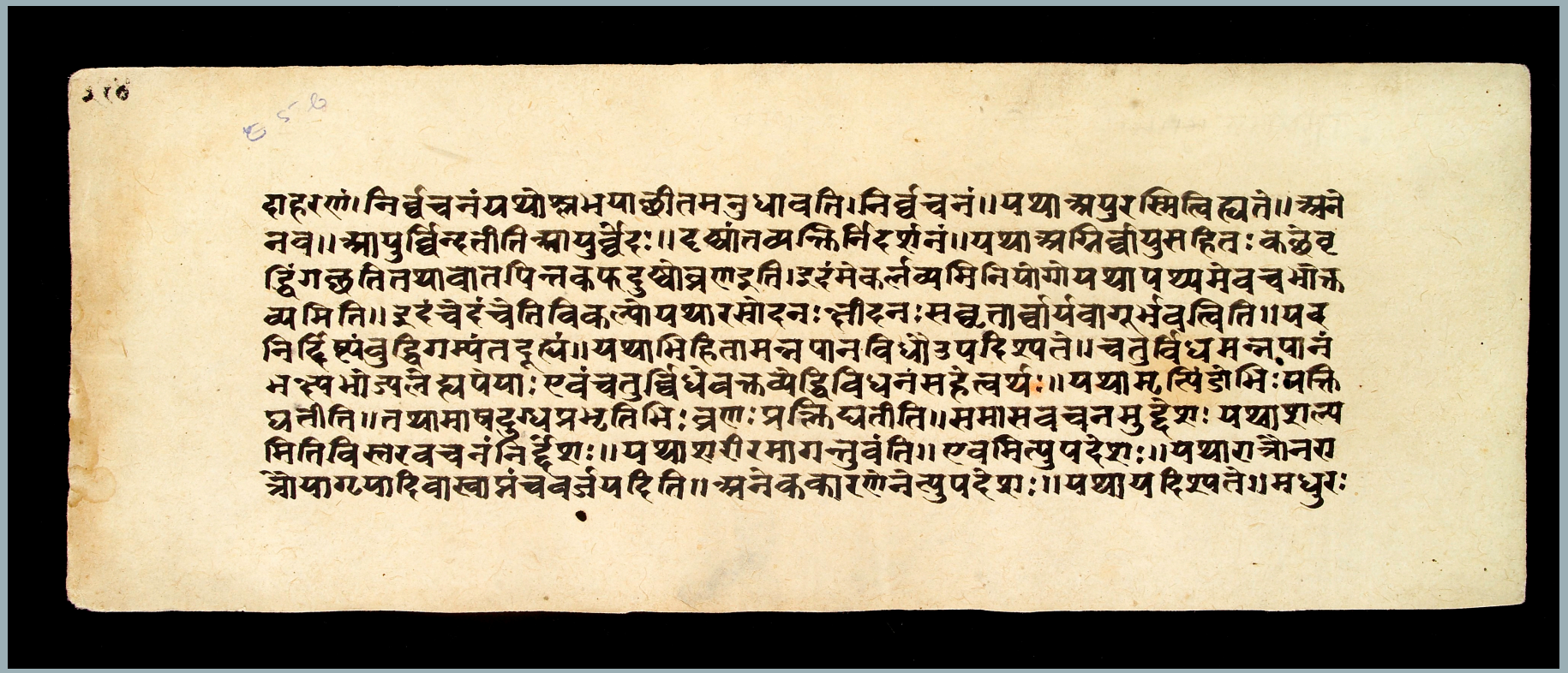
Il était une fois

M. Mouhaoui

Venus of Willendorf

Petite statuette en calcaire, découverte en 1908 à Willendorf, petit village en Autriche. Elle remonterait à 24 000 - 22 000 ans avant JC.

Sushruta Samhita

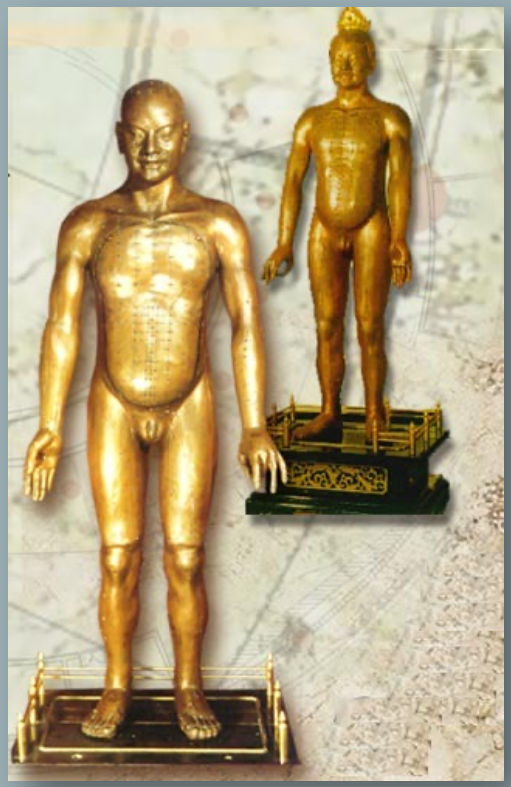


La Sushruta Samhita, remontant à 500 ans avant JC, est un traité de médecine et de chirurgie qui constitue l'un des deux textes fondateurs de l'Ayurveda.

Head of Maya

Tête de Maya, qui remonte au début de l'ère classique, environ 300 - 600 ans après JC. Cette tête est à moitié vivante et à moitié post-mortem.

Bronze statue for acupuncture



En 1027, Wang Wei-Yi, médecin de la dynastie chinoise, mit en place deux statues en bronze, pour l'apprentissage des points de ponction pour l'acupuncture.

Anatomia del Cigoli

L'Anatomia del Cigoli est une représentation en cire des différentes couches musculaires, et produite par Ludovico Cardi vers 1598.

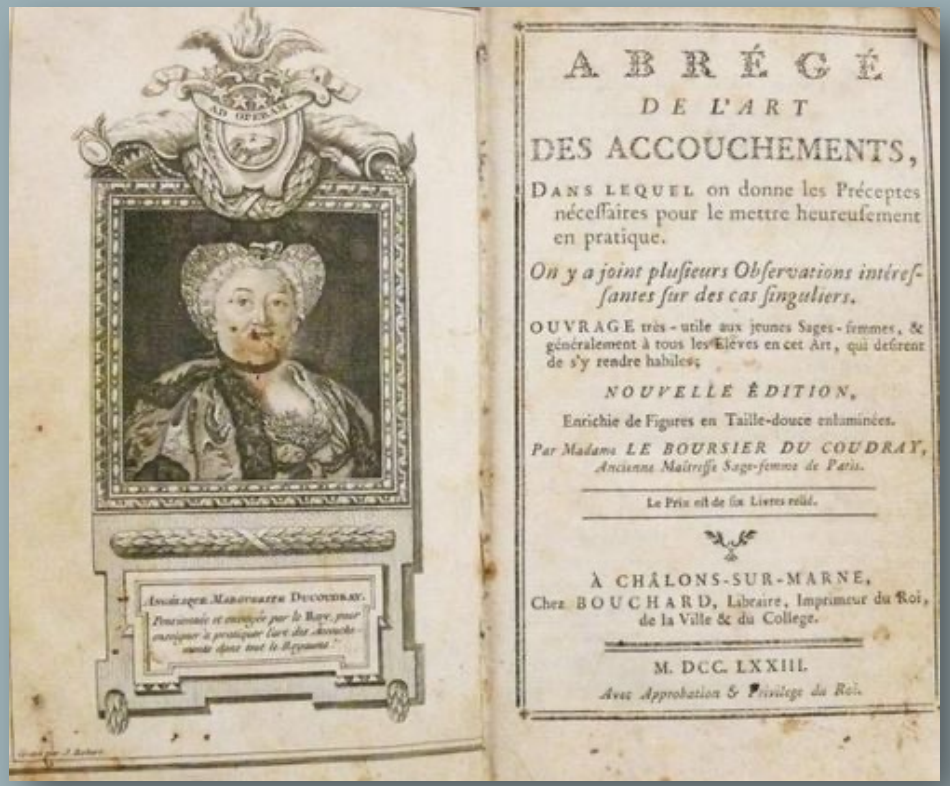
18ème siècle

Angélique Marguerite
Le Boursier De Coudray

La machine, 1759

18ème siècle

Angélique Marguerite
Le Boursier De Coudray



ABRÉGÉ
DE L'ART
DES ACCOUCHEMENTS,

DANS LEQUEL on donne les Préceptes néceſſaires pour le mettre heureuſement en pratique.

On y a joint pluſieurs Obſervations intéreſſantes ſur des cas ſinguliers.

OUVRAGE très-utile aux jeunes Sages-femmes, & généralement à tous les Elèves en cet Art, qui deſirent de s'y rendre habiles.

NOUVELLE ÉDITION,

Enrichie de Figures en Taille-douce enluminées.

Par Madame LE BOURSIER DU COUDRAY, Ancienne Maîtreſſe Sage-femme de Paris.

Le Prix eſt de ſix Livres relié.

À CHÂLONS-SUR-MARNE,
Chez BOUCHARD, Libraire, Imprimeur du Roi, de la Ville & du College.

M. DCC. LXXIII.

Avec Approbation & Privilege du Roi.

Pionnière de la la simulation moderne

18ème siècle

Angélique Marguerite
Le Boursier De Coudray

Madame du Coudray had detractors, for example, the Parisian surgeon Jean la Bas, who in 1776 wrote publicly of the mannequin,

> *…as no more than a fable, a phantom, a simulacrum, a shadow of reality, capable of giving false ideas to beginners who, once their heads are thus filled, will not be able to avoid practicing bad work on live subjects.…*[54(pp233,234)]

18ème siècle

En 1771, Felice Fontana commença ses ateliers de fabrication de modèles humains anatomiques à partir de la cire.

19ème siècle

Dark age

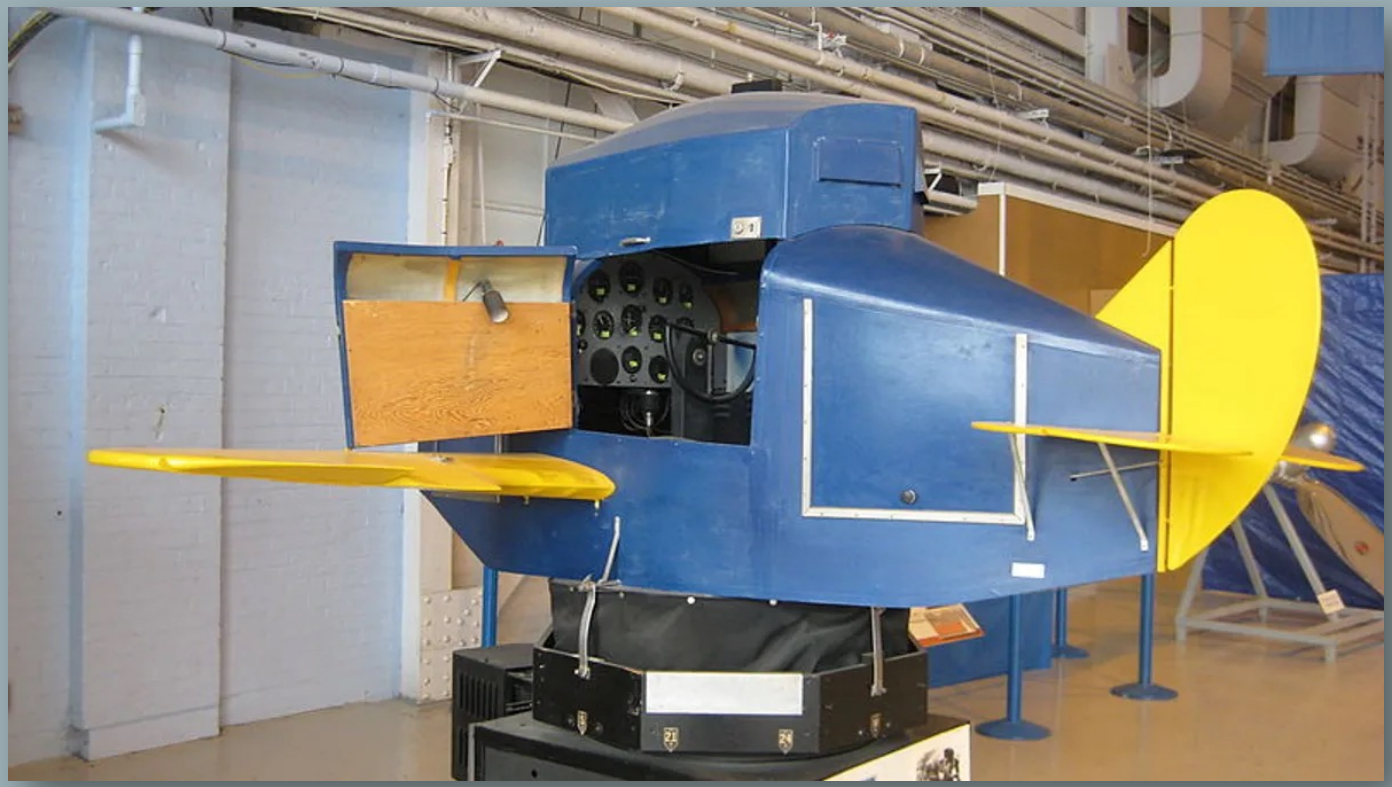
20ème siècle

Rediscovery

Rediscovery

Simulation procédurale

The Link trainer



Connu aussi sous le nom de "Blue box", créé par Edwin Albert Link en 1929, pour l'entraînement des pilotes, notamment à la 2ème guerre mondiale.

Mrs. Chase

Mannequin grandeur nature, pour l'entraînement
des étudiantes infirmières, vers 1950

L’inconnue de la seine

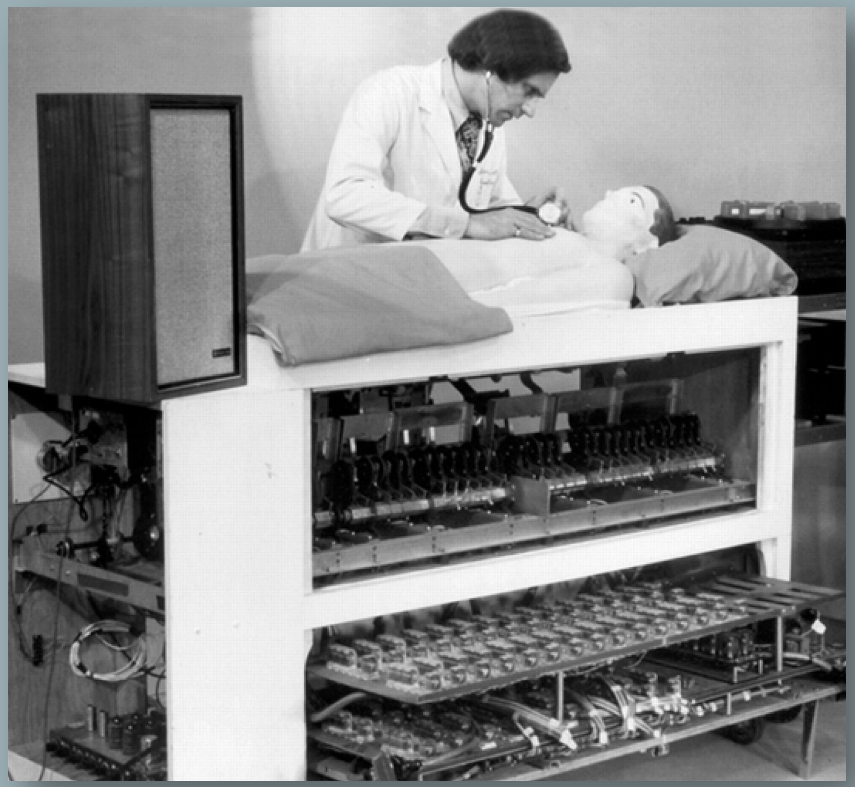
Resusci Anne

P. Safar

A. Laerdal

Laerdal avec Resuci Anne, 1960

Harvey

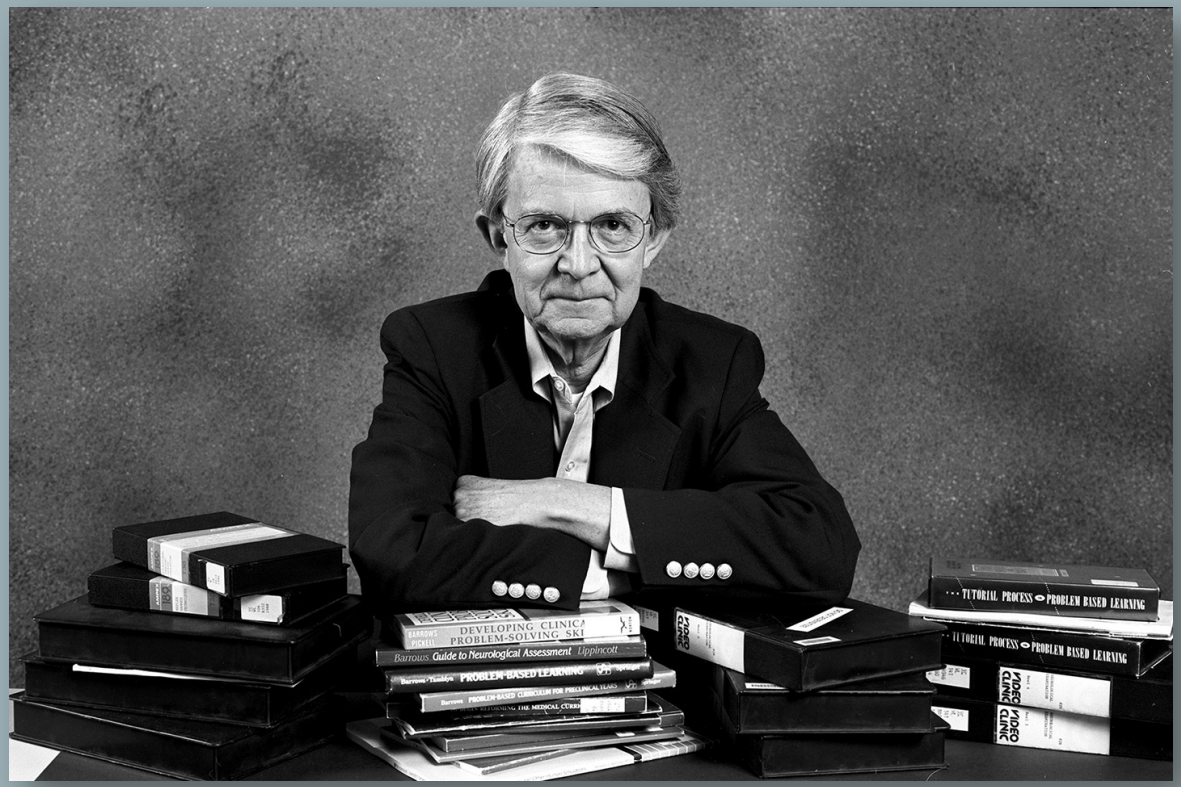


Dr. Michael Gordon, avec la toute première version du simulateur de l'auscultation cardiopulmonaire, au nom de Harvey.

Rediscovery

Patient standardisé

Patient standardisé



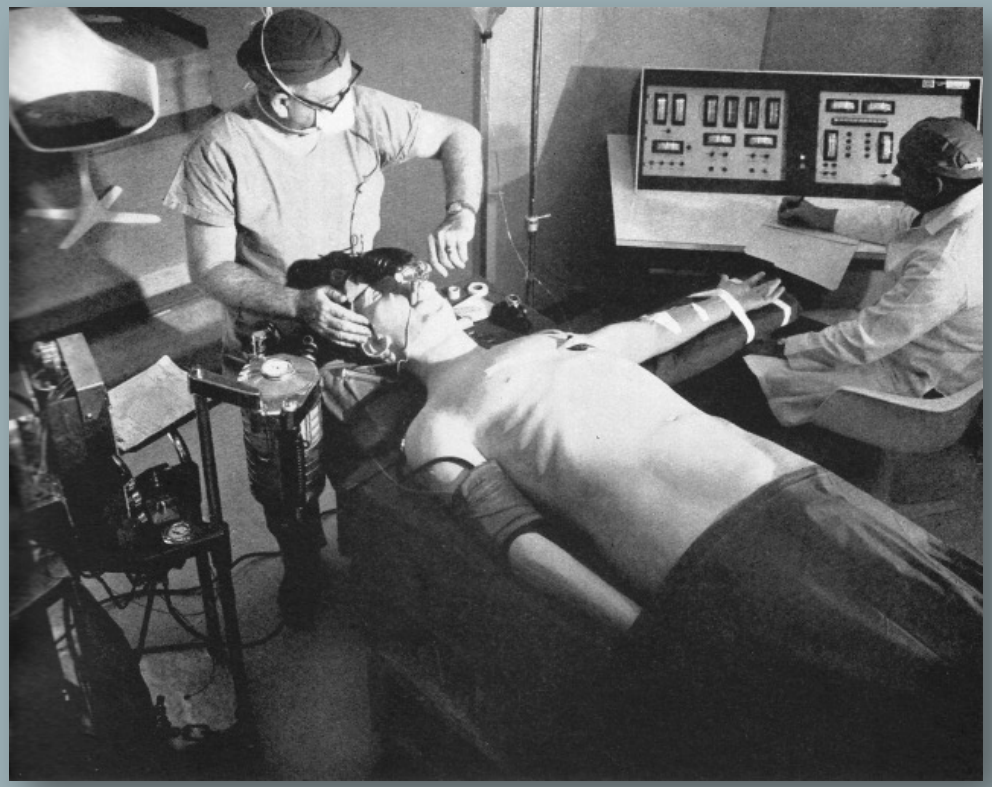
Howard S. Barrows, dès 1963

Rediscovery

Crisis resource management et simulation immersive

Sim One, 1967

Samuel Denson



Stephen Abrahamson

Sim One, 1967

MEDICINE | *Sim does almost everything—except say 'ouch'*

Among the trickiest tasks an anesthesiologist faces is getting a patient ready for surgery. The job may involve administering oxygen, injecting drugs, perhaps even inserting a stiff tube into the patient's windpipe, all the while keeping an eye on his pulse and respiration.

To speed the process of teaching apprentice anesthesiologists this difficult procedure, Professors Stephen Abrahamson and J. S. Denson of the University of Southern California Medical School, working with Aerojet-General Corp., have devised a marvelous mechanical man. Dubbed Sim One, it simulates a real patient in almost every respect except the ability to sit up on the operating table and say "ouch!" Controlled by computer, the plastic-skinned dummy has a heartbeat, breathes, tries to cough the air tube up out of its windpipe and even vomits. Sim is already serving students from Los Angeles County Hospital as a deathproof patient. Although still only a prototype and not in production, when Sims are available in quantity they may serve to reduce the time needed to train an anesthesiologist from eight years to six.

With a blood-pressure cuff on Sim's right arm and an electrocardiogram lead taped over its heart, a student doctor prepares to inject anesthetic into the dummy's left arm. Below, another resident doctor bends to check the dilation of Sim's pupils after inserting a tube in its windpipe.

Deathproof Patient for Student Doctors

CONTINUED

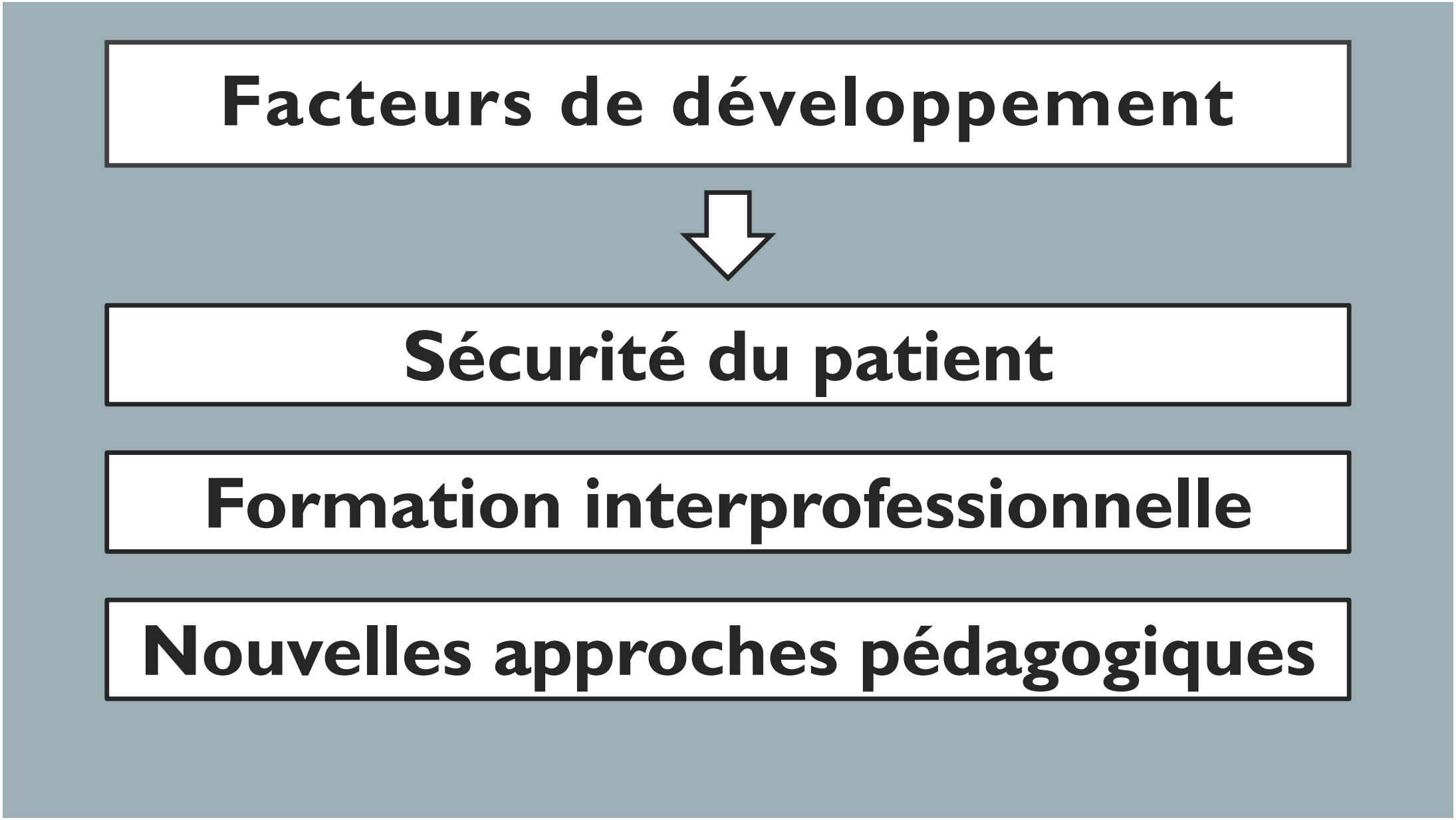
The dummy's amazingly lifelike eyes not only open and close realistically but the pupils also dilate (*above left*) and contract (*above right*). To the anesthesiologist, eye dilation is a danger signal, indicating that the patient must be given either more oxygen or less drug. Using the control panel (*right*), the instructor can monitor both the student's actions and Sim's reactions. The side view below shows what makes the device work—a clutter of electronic gear jammed under the operating table. The boxlike housings immediately below Sim contain the control centers for the abdomen and lungs.

To duplicate actual conditions often encountered in an operating room, the instructor can try to confound the student with problems such as coughing or spasms. He can also suspend the proceedings at any moment if he wants to discuss a point. Whereas with a live patient a difficult procedure need —and can—be done only once, Sim makes it possible for the student to practice a process dozens of times. The inventors are already looking ahead: future Sims will bleed, perspire, salivate and turn blue when short of oxygen.

It can get sick on command 30 times a day

CASE, 1987

Simulation in-situ, simulateur CASE "Comprehensive anesthesia simulation environment" par David Gaba


Facteurs de développement
Sécurité du patient
Formation interprofessionnelle
Nouvelles approches pédagogiques